

Salmon River Project

Recertification Application to the Low Impact Hydropower Institute

LIHI # 20 (FERC Project No. 11408)



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INTRODUCTION

Erie Boulevard Hydropower, L.P. (Erie)(Licensee), a wholly owned subsidiary of Brookfield Renewable, is providing this application to the Low Impact Hydropower Institute (LIHI) for recertification of the Salmon River Project (LIHI #20), subsequent to a previous LIHI certification that expires November 14, 2021. The Salmon River Project consists of two hydroelectric developments along the Salmon River in the Towns of Redfield and Orwell, Oswego County, New York. The Salmon River Project is licensed with the Federal Energy Regulatory Commission (FERC or Commission) as FERC No. 11408 and is comprised of two developments – Bennetts Bridge Development and Lighthouse Hill Development.

Bennetts Bridge Development

The Bennetts Bridge Development has a total drainage area of 194 square miles (mi²) and consists of:

- A 607-foot-long and 45-foot-high concrete gravity dam with a reinforced concrete intake structure 92 feet long by 39.5 feet wide by 53 feet high. The dam is comprised of a 107-foot-long non-overflow section with crest elevation at 942 feet (U.S. Geological Survey [USGS]), a 244-foot-long ungated spillway section with crest elevation at 935 feet, equipped with 2-foot-high flashboards, and a 256-foot-long gated spillway section with crest elevation at 926 feet, with eleven (11.5-foot-high by 20-foot-wide) Tainter gates;
- An impoundment with gross storage capacity of 66,500 acre-feet, maximum surface area of 3,550 acres and normal maximum surface elevation at 937 feet; two earth dikes (1,330 and 695 feet long) located along the south shore of the impoundment;
- A 10,000-foot-long conduit system consisting of (a) a concrete tunnel section 650 feet long and 12 feet in diameter; (b) a reinforced plastic pipeline section 7,790 feet long and 12 feet in diameter; (c) a steel pipeline section 1,200 feet long and 11.5 feet in diameter; (d) a differential surge tank 105 feet high; (e) a steel distributor 200 feet long and 12 feet in diameter; and (f) four steel penstocks, each 330 feet long and 8 feet in diameter, with associate shut-off and air valves;
- A concrete/brick/steel powerhouse 206 feet long and 70 feet wide, containing four turbine generator units with a total installed capacity of about 28.75 megawatts (MWs); and,
- Three existing 12-kilovolt (kV) transmission lines with a total length of 17,300 feet and appurtenant facilities.

Lighthouse Hill Development

The Lighthouse Hill Development has a total catchment of 198 mi² and consists of:

- A 382-foot-long concrete gravity dam consisting of a 155-foot-long and 59-foot-high non-overflow section with crest elevation at 656 feet (USGS), a 43-foot-long and 53-foot-high un-gated spillway section with crest elevation at 650 feet controlled by 1 foot high flashboards, and a 184-foot-long and 46-foot-high spillway section with crest elevation at

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643 feet, gated with eight 20-foot-wide by 7-foot-high Tainter gates equipped with 1 foot high flashboards;

- An impoundment with gross storage capacity of 3,200 acre-feet, maximum surface area of 170 acres with normal maximum surface elevation at 651 feet;
- A 324-foot-long and 40-foot-high earthen dike with crest elevation at 656 feet;
- Three 17-foot-wide by 8-foot-high by 62-foot-long concrete penstocks;
- A 15-foot-long sluice gate section;
- A 125-foot-long concrete/brick/steel powerhouse with an intake structure, containing two existing turbine-generator units with a total installed capacity of about 7.5 MW;
- A 40-foot-wide and 2,800-foot-long tailrace channel; and
- A 400-foot-long, 12-Kv transmission line and appurtenant facilities.

There have been no material changes in the facility design or operation since the most recent LIHI review that was concluded on August 1, 2013. There also have been no material changes in the environmental conditions in the project vicinity since that most recent LIHI review. The only material change that has occurred since 2013 is the issuance of the 2nd Edition Low Impact Certification Handbook.

Erie has reviewed the project description for the Salmon River Project that is posted on the LIHI website and identified the following discrepancies with the following items:

- While the Salmon River Basin has a drainage area of 285 mi², the Bennetts Bridge and Lighthouse Hill Developments have drainage areas of 194 mi² and 198 mi², respectively.
- Erie identified inconsistent installed capacities lists on the LIHI website. Bennetts Bridge has an installed capacity of 28.75 MW and Lighthouse Hill had an installed capacity of 7.5 MW.

The information included in this recertification application provides an update to support a new LIHI certification.

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PART I. FACILITY DESCRIPTION

The key features of the Salmon River Project are described in Table I-1. A description of the project can be found on the LIHI website at <https://lowimpacthydro.org/lihi-certificate-20-salmon-river-hydroelectric-project-new-york/>

Table I-1. Facility Description Information for the Salmon River Project.

Item	Information Requested	Response (include references to further details)
Name of the Facility	Facility name (use FERC project name or other legal name)	Salmon River Project (FERC No. 11408) <i>Bennetts Bridge Development</i> <i>Lighthouse Hill Development</i>
Reason for applying for LIHI Certification	<ol style="list-style-type: none"> 1. To participate in state RPS program and specify the state and the total MW/MWh associated with that participation (value and % of facility total Mw/MWh). 2. To participate in voluntary REC market (e.g., Green-e) 3. To satisfy a direct energy buyer's purchasing requirement 4. To satisfy the facility's own corporate sustainability goals 5. For the facility's corporate marketing purposes 6. Other (describe) 	4. To satisfy the facility's own corporate sustainability goals
	If applicable, amount of annual generation (MWh and % of total generation) for which RECs are currently received or are expected to be received upon LIHI Certification	N/A
Location	River name (USGS proper name)	Salmon River
	Watershed name - Select region, click on the area of interest until the 8-digit HUC number appears. Then identify watershed name and HUC-8 number from the map at: https://water.usgs.gov/wsc/map_index.html	Salmon – Sandy River Basin (04140102)
	Nearest town(s), <u>county(ies)</u> , and state(s) to dam	Towns of Orwell and Redfield Oswego County, New York
	River mile of dam above mouth	Bennetts Bridge: RM 18.0 Lighthouse Hill: RM 17.0
	Geographic latitude of dam	Bennetts Bridge: 43.5444 N Lighthouse Hill: 43.524 N
	Geographic longitude of dam	Bennetts Bridge: -75.919 W Lighthouse Hill: - 75.971 W

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Item	Information Requested	Response (include references to further details)
Facility Owner	Application contact names (Complete the Contact Form in Section B-4 also):	Danny Maguire, PE Compliance Manager, NY and MN Brookfield Renewable See Part V of the LIHI certification application for more information
	Facility owner company and authorized owner representative name. For recertifications: If ownership has changed since last certification, provide the effective date of the change.	Same as above <i>Ownership has not changed since last certification</i>
	FERC licensee company name (if different from owner)	Erie Boulevard Hydropower, L.P.,
Regulatory Status	FERC Project Number (e.g., P-xxxxx), issuance and expiration dates, or date of exemption	FERC Project No. 11408 The FERC license was issued on February 21, 1996. However, the FERC license was amended on January 16, 2004 (revised installed capacity). The license expires on January 31, 2036
	FERC license type (major, minor, exemption) or special classification (e.g., "qualified conduit", "non-jurisdictional")	Major Project (>5 MW)
	Water Quality Certificate identifier, issuance date, and issuing agency name. Include information on amendments.	The Section 401 Water Quality Certificate was issued by the New York State Department of Environmental (NYSDEC) on April 28, 1994 and adopted into the FERC license. The NYSDEC DEC I.D. 7-3599-00013/00001-9.

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Item	Information Requested	Response (include references to further details)
	Hyperlinks to key electronic records on FERC e-library website or other publicly accessible data repositories ¹	<p>January 16, 2004 Order Amending License and Revising Annual Charges https://elibrary.ferc.gov/eLibrary/filedownload?fileid=10044994</p> <p>February 21, 1996 Order Issuing License and Final Environmental Assessment* https://elibrary.ferc.gov/eLibrary/idmws/common/opennat.asp?fileID=8402048 * Link includes December 9, 1993 Settlement Offer</p> <p>April 28, 1994 Water Quality Certificate https://lowimpacthydro.org/wp-content/uploads/2020/08/11408_Salmon_WQC.pdf</p>
Powerhouse	Date of initial operation (past or future for pre-operational applications)	Bennetts Bridge: 1914 Lighthouse Hill: 1930
	Total installed capacity (MW) For recertifications: Indicate if installed capacity has changed since last certification	<p>Bennetts Bridge: 28.75 MW Lighthouse Hill: 7.5 MW Total: 36.25 MW</p> <p><i>Installed capacities have not changed since last certification</i></p>
	Average annual generation (MWh) and period of record used For recertifications: Indicate if average annual generation has changed since last certification	<p>Bennetts Bridge: 93,438 MWh Lighthouse Hill: 22,916 MWh Total: MWh *Reported 10/1/2015 through 9/30/2020</p>
	Mode of operation (run-of-river, peaking, pulsing, seasonal storage, diversion, etc.) For recertifications: Indicate if mode of operation has changed since last certification	<p>Bennetts Bridge: Seasonal store and release that operates in a peaking mode.</p> <p>Lighthouse Hill: Store and release that operates in re-regulating mode.</p> <p><i>Modes-of-operations have not changed since last certification.</i></p>

¹ For example, the FERC license or exemption, recent FERC Orders, Water Quality Certificates, Endangered Species Act documents, Special Use Permits from the U.S. Forest Service, 3rd-party agreements about water or land management, grants of right-of-way, U.S. Army Corps of Engineers permits, and other regulatory documents. If extensive, the list of hyperlinks can be provided separately in the application.

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<i>Item</i>	<i>Information Requested</i>	<i>Response (include references to further details)</i>
	Number, type, and size of turbine/generators, including maximum and minimum hydraulic capacity and maximum and minimum output of each turbine and generator unit	<p>Bennetts Bridge: Type: Four Horizontal Francis Turbines Description: Each turbine has a design capacity of 12,850 HP at design head of 270 feet and a speed of 465 rpm. Minimum: Unit 1: 6.5 MW at 350 cfs Unit 2-4: 7.0 MW at 375 cfs (each) Maximum: Unit 1: 7.0 MW at 400 cfs Unit 2-4: 7.5 MW at 467 cfs (each)</p> <p>Lighthouse Hill: Type: Two Vertical Francis Turbines Description: Each turbine has a design capacity of 5,250 HP at design head of 62 feet and a speed of 150 rpm. Minimum: 3.5 MW at 725 cfs (each unit) Maximum: 4.2 MW at 984 cfs (each unit)</p>
	Trashrack clear spacing (inches) for each trashrack	<p>Bennetts Bridge: 3.5-inch (coarse) and 1.5-inch overlays (fine) Lighthouse Hill: 1-inch</p>
	Approach water velocity (ft/s) at each intake if known	Unknown
	Dates and types of major equipment upgrades For recertifications: Indicate only those since last certification	<p>Bennetts Bridge: 1913 – 1914: Original Construction 1981: Intake rehabilitation including installation of fine and coarse trashracks. The original 7,800-foot-long wood stave pipeline was replaced with a fiber reinforced plastic pipeline.</p> <p>Lighthouse Hill: 1929 - 1930: Original Construction 2000: Steel trackracks in intake gatehouse were replaced.</p>
	Dates, purpose, and type of any recent operational changes For recertifications: Indicate only those since last certification	<i>There have been no operational changes since the last certification was issued.</i>
	Plans, authorization, and regulatory activities for any facility upgrades or license or exemption amendments	There are no planned upgrades at this time.

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<i>Item</i>	<i>Information Requested</i>	<i>Response (include references to further details)</i>
Dam or Diversion	Date of original dam or diversion construction and description and dates of subsequent dam or diversion structure modifications	<p>Bennetts Bridge 1913 – 1914: Original Construction 1980: Dikes B and C were stabilized with riprap and the height of the dikes raised one foot.</p> <p>Lighthouse Hill: 1930: Original Construction 1993: Gate stops installed to increase spillway capacity.</p>
	Dam or diversion structure length, height including separately the height of any flashboards, inflatable dams, etc. and describe seasonal operation of flashboards and the like	<p>Bennetts Bridge: A 607-foot-long and 45-foot-high concrete gravity dam, consisting of (a) a 107-foot-long non-overflow section with crest elevation at 942 feet; (b) a 244-foot-long ungated spillway section with crest elevation at 935 feet, equipped with 2-foot-high flashboards; and (c) a 256-foot-long gated spillway section with crest elevation at 926 feet, with eleven 11.5-foot-high by 20-foot-wide Taintor gates. Additionally, there are two earth dikes 1,330 and 695 feet long located along the south shore of the impoundment. The flashboards are designed to fail with 2 feet of overtopping and are replaced when river conditions allow.</p> <p>Lighthouse Hill: A 382-foot-long concrete gravity dam consisting of (a) a 155-foot-long and 59-foot-high non-overflow section with crest elevation at 656 feet; (b) a 43-foot-long and 53-foot-high ungated spillway section with crest elevation at 650 feet controlled by a 1-foot-high flashboards; and (c) a 184-foot-long and 46-foot-high spillway section with crest elevation at 643 feet, gated with eight 20-foot-wide by 7-foot-high Taintor gates equipped with 1-foot-high flashboards. Additionally, a 324-foot-long and 40-foot-high earthen dike with crest elevation at 656 feet. The flashboards are designed to fail with 2.5 feet of overtopping and are replaced when river conditions allow.</p>

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<i>Item</i>	<i>Information Requested</i>	<i>Response (include references to further details)</i>
	Spillway maximum hydraulic capacity	<p>Bennetts Bridge: 52,500 cfs at elevation 941.0 feet (top of left abutment)</p> <p>Lighthouse Hill: 25,300 cfs at elevation 656.0 feet</p>
	Length and type of each penstock and water conveyance structure between the impoundment and powerhouse	<p>Bennetts Bridge: A 10,000-foot-long conduit system consisting of (a) a concrete tunnel section 650 feet long and 12 feet in diameter; (b) a reinforced plastic pipeline section 7,790 feet long and 12 feet in diameter; (c) a steel pipeline section 1,200 feet long and 11.5 feet in diameter; (d) a differential surge tank 105 feet high; (e) a steel distributor 200 feet long and 12 feet in diameter; and (f) four steel penstocks, each 330 feet long and 8 feet in diameter.</p> <p>Lighthouse Hill: Three 17-foot-wide by 8-foot-high by 62-foot-long concrete penstocks</p>
	Designated facility purposes (e.g., power, navigation, flood control, water supply, etc.)	<p>Bennetts Bridge: Power</p> <p>Lighthouse Hill: Power</p>
Conduit Facilities Only	Date of conduit construction and primary purpose of conduit	N/A
	Source water	N/A
	Receiving water and location of discharge	N/A
Impoundment and Watershed	Authorized maximum and minimum impoundment water surface elevations For recertifications: Indicate if these values have changed since last certification	<p>Bennetts Bridge: Maximum: 937 feet Minimum: 918 feet</p> <p>Lighthouse Hill: There is no license restriction on fluctuation, however, Erie operates above to 630 feet to maintain the minimum diversion to the NYSDEC Hatchery.</p> <p><i>Authorized impoundment elevations have not changed since last certification.</i></p>

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<i>Item</i>	<i>Information Requested</i>	<i>Response (include references to further details)</i>
	<p>Normal operating elevations and normal fluctuation range</p> <p>For recertifications: Indicate if these values have changed since last certification</p>	<p>Bennetts Bridge:</p> <p>Target Elevations*</p> <ul style="list-style-type: none"> - January: 935 ft (925 ft – 936 ft) - February: 932 ft (925 ft – 933 ft) - March: 923 ft (920 ft – 937 ft) - April: 926 ft (920 ft – 937 ft) - May: 936 ft (920 ft – 937 ft) - June: 936 ft (920 ft – 937 ft) - July: 936 ft (920 ft – 937 ft) - August: 935 ft (920 ft – 936 ft) - September: 933 ft (918 ft – 934 ft) - October: 930 ft (918 ft – 931 ft) - November: 930 ft (918 ft – 931 ft) - December: 931 ft (925 ft – 932 ft) <p>*Low-flow and high-flow trigger elevations are in parenthesis.</p> <p>Lighthouse Hill*</p> <p>Maximum: 651 feet</p> <p>Minimum: 630 feet</p> <p>*There is no license restriction on fluctuation, however, Erie operates above to 630 feet to maintain the minimum diversion to the NYSDEC Hatchery.</p> <p><i>Normal operating elevations have not changed since last certification.</i></p>
	<p>Gross storage volume and surface area at full pool</p> <p>For recertifications: Indicate if these values have changed since last certification</p>	<p>Bennetts Bridge: 66,000 acre-feet and 3,550 acres</p> <p>Lighthouse Hill: 3,200 acre-feet and 170 acres</p> <p><i>Storage volumes have not changed since last certification.</i></p>
	<p>Usable storage volume and surface area</p> <p>For recertifications: Indicate if these values have changed since last certification</p>	<p>Bennetts Bridge: 56,000 acre-feet and 3,550 acres</p> <p>Lighthouse Hill: 1,800 acre-feet and 170 acres</p> <p><i>Storage volumes have not changed since last certification.</i></p>

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<i>Item</i>	<i>Information Requested</i>	<i>Response (include references to further details)</i>
	Describe requirements related to impoundment inflow and outflow, elevation restrictions (e.g., fluctuation limits, seasonality) up/down ramping and refill rate restrictions.	The Salmon River Project operates according to Rule Curve 16, as described in the Water Budget Model, submitted May 5, 1993, and modified on June 16, 1993 and August 9, 1993. The requirements of Rule Curve 16 are outlined in Article 401 of the License.
	Upstream dams by name, ownership and river mile. If FERC licensed or exempt, please provide FERC Project number of these dams. Indicate which upstream dams have downstream fish passage.	N/A
	Downstream dams by name, ownership, river mile and FERC number if FERC licensed or exempt. Indicate which downstream dams have upstream fish passage	N/A
	Operating agreements with upstream or downstream facilities that affect water availability and facility operation	As required by Article 401 of the license, Erie diverts 22 cfs to NYSDEC Fish Hatchery downstream of the Lighthouse Hill Development.
	Area of land (acres) and area of water (acres) inside FERC project boundary or under facility control. Indicate locations and acres of flowage rights versus fee-owned property.	Bennetts Bridge: 3,950 acres (3,550 acres of water, 400 acres of land) Lighthouse Hill: 390 acres (174 acre of water, 216 acres of land)
Hydrologic Setting	Average annual flow at the dam, and period of record used	The average annual flow recorded at USGS Gage 04250200 Salmon River at Pineville, NY between 1996 and 2020 is 814 cfs.
	Average monthly flows and period of record used	The average monthly flow recorded at USGS Gage 04250200 Salmon River at Pineville, NY between 1996 and 2020 is <ul style="list-style-type: none"> - January: 902 cfs - February: 894 cfs - March: 1,269 cfs - April: 1,731 cfs - May: 786 cfs - June: 496 cfs - July: 414 cfs - August: 360 cfs - September: 446 cfs - October: 675 cfs - November: 848 cfs - December: 814 cfs

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<i>Item</i>	<i>Information Requested</i>	<i>Response (include references to further details)</i>
	Location and name of closest stream gaging stations above and below the facility	Upstream: N/A Downstream: 04250200 Salmon River at Pineville, NY (RM 11.7)
	Watershed area at the dam (in square miles). Identify if this value is prorated from gage locations and provide the basis for proration calculation.	Bennetts Bridge: 194 mi ² Lighthouse Hill: 198 mi ²
	Other facility specific hydrologic information	N/A
Designated Zones of Effect	Number of zones of effect	6
	Type of waterbody (river, impoundment, bypassed reach, etc.)	Zone 1: Impoundment (Bennetts Bridge) Zone 2: Bypassed Reach (Bennetts Bridge) Zone 3: Tailrace (Bennetts Bridge) Zone 4: Impoundment (Lighthouse Hill) Zone 5: Bypassed Reach (Lighthouse Hill) Zone 6: Downstream
	Upstream and downstream locations by river miles	Zone 1: 24.5 – 18.0 Zone 2: 18.0 – 14.5 Zone 3: 14.7 – 14.5 Zone 4: 14.5 – 13.8 Zone 5: 13.8 – 13.2 Zone 6: 13.8 – 0.0

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<i>Item</i>	<i>Information Requested</i>	<i>Response (include references to further details)</i>
	Delimiting structures or features	<p>Zone 1: From the head of the Bennetts Bridge impoundment (also known as Salmon River Reservoir), downstream approximately 6.5 miles to the Bennetts Bridge spillway and intake.</p> <p>Zone 2: From the Bennetts Bridge spillway, downstream approximately 3.5 miles to the Lighthouse Hill impoundment.</p> <p>Zone 3: From the tailrace, downstream approximately 0.2 miles to the Lighthouse Hill impoundment.</p> <p>Zone 4: From the head of the Lighthouse Hill impoundment (also known as Lower Reservoir) at the Bennetts Bridge tailrace and bypassed reach, downstream approximately 0.8 miles to the Lighthouse Hill dam and intake.</p> <p>Zone 5: From the Lighthouse Hill spillway, downstream approximately 0.6 miles to the confluence with the Lighthouse Hill tailrace.</p> <p>Zone 6: From the Lighthouse Hill powerhouse, downstream approximately 13.8 miles to Lake Ontario.</p>

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PART II. STANDARD MATRICES

The Salmon River Project has a total of six zones of effect that are defined as:

- (1) Zone one, which extends from the head of the Bennetts Bridge impoundment (also known as Salmon River Reservoir), downstream approximately 6.5 miles to the Bennetts Bridge spillway and intake.
- (2) Zone two, which extends from the Bennetts Bridge spillway, downstream approximately 3.5 miles to the Lighthouse Hill impoundment.
- (3) Zone three, which extends from the tailrace, downstream approximately 0.2 miles to the Lighthouse Hill impoundment.
- (4) Zone four, which extends from the head of the Lighthouse Hill impoundment (also known as Lower Reservoir) at Bennetts Bridge tailrace and bypassed reach, downstream approximately 0.8 miles to the Lighthouse Hill dam and intake.
- (5) Zone five, which extends from the Lighthouse Hill spillway, downstream approximately 0.6 miles to the confluence with the Lighthouse Hill tailrace.
- (6) Zone six, which extends from the Lighthouse Hill powerhouse, downstream approximately 13.8 miles to Lake Ontario.

The standards selected to satisfy the LIHI certification criteria in each of these zones are identified in the following table.

Table II-1. LIHI Standards Selected for Salmon River Project

Zone No., Zone Name, and Standard Selected (including PLUS if selected)	River Mile at upper and lower extent of Zone	Criterion							
		A	B	C	D	E	F	G	H
		Ecological Flows	Water Quality	Upstream Fish Passage	Downstream Fish Passage	Shoreline and Watershed Protection	Threatened and Endangered Species	Cultural and Historic Resources	Recreational Resources
Zone 1: Impoundment (Bennetts Bridge)	24.5 - 18.0	A-2	B-2	C-1	D-2	E-1 Plus	F-3	G-2	H-2
Zone 2: Bypassed Reach (Bennetts Bridge)	18.0 – 14.5	A-2	B-2	C-1	D-1	E-1 Plus	F-3	G-2	H-2
Zone 3: Tailrace (Bennetts Bridge)	14.7 - 14.5	A-2	B-2	C-1	D-1	E-1 Plus	F-3	G-2	H-2
Zone 4: Impoundment (Lighthouse Hill)	14.5 - 13.8	A-2	B-2	C-1	D-2	E-1 Plus	F-3	G-2	H-2
Zone 5: Bypassed Reach (Lighthouse Hill)	13.8 – 13.2	A-2	B-2	C-2	D-2	E-1 Plus	F-3	G-2	H-2
Zone 6: Downstream:	13.8 - 0	A-2	B-2	C-2	D-2	E-1 Plus	F-3	G-2	H-2

PART III. SUPPORTING INFORMATION

This section contains information that explains and justifies the standards selected to pass the LIHI certification criteria (see Part II for selections).

BENNETTS BRIDGE DEVELOPMENT

Information Required to Support Ecological Flows Standards.

III.A.1 Ecological Flows: Bennetts Bridge Development Zone 1

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
A	2	<p><u>Agency Recommendation (see Appendix A for definitions):</u></p> <ul style="list-style-type: none">• Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective).• Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement.• Explain how the recommendation relates to agency management goals and objectives for fish and wildlife.• Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

Zone 1 of the Salmon River Project is the Bennetts Bridge impoundment, also referred to as the Salmon River Reservoir. As required by the Settlement Offer and License Article 401, the Salmon River Project operates according to Rule Curve 16, as described in the Water Budget Model, submitted May 5, 1993, and modified on June 16, 1993 and August 9, 1993. Rule Curve 16 provides protection and enhancement of aquatic resources, water quality, fisheries, aesthetic resources, and recreation resources in the Salmon River basin. The Offer of Settlement requires a continuous year-round base flow from the Lighthouse Hill Reservoir while maintaining target water surface elevations in the Salmon River Reservoir. Monthly target water surface elevations are shown in the table below.

Target water surface elevations for Salmon River Reservoir are measured at Bennetts Bridge. Base flows are released directly from the Lighthouse Hill development, except for the 22 cubic feet per second (cfs) which is released from the Salmon River Fish Hatchery.

Target water surface elevations for Salmon River Reservoir may not be achievable during periods of high or low inflows. High-flow and low-flow periods are defined when the water surface elevation at Salmon River Reservoir reaches the limits included in the table below. During high-

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flow or low-flow periods, base flows should take precedence over reservoir elevations. However, base flows could be less than the required amount during extreme drought emergency conditions.

Salmon River Project Rule Curve 16 Targe Base Flows and Reservoir Elevations

Month	Base Flow at Lighthouse Hill (cfs)	Target Water Survey Elevation at Salmon River Reservoir (ft)	High-flow Trigger Elevation (ft)	Low-flow Trigger Elevation (ft)
January	285	935	936	925
February	285	932	933	925
March	285	923	937	920
April	285	926	937	920
May	185	936	937	920
June	185	936	937	920
July	185	936	937	920
August	185	935	936	920
September	335	933	934	918
October	335	930	931	918
November	335	930	931	918
December	335	931	932	925

The Salmon River Water Budget Model simulates daily inflow, reservoir elevations, generation, storage, and outflow for the two developments. The model used 17 years of generation and flow records collected prior to 1986 to simulate Project operations for three operating scenarios: run-of-river, historical, and Rule Curve 16.

According to the Environmental Assessment, the Licensee performed a field study in May and September 1993 to examine reservoir habitat which would be affected by drawdown and to determine the effects of alternative operation scenarios. Reservoir head-duration tables and reservoir surface area duration tables from the Salmon River Water Budget Model were used as the basis for fluctuation and drawdown analyses. The study found that Rule Curve 16 would have the following effects: (a) the Salmon River Reservoir would have an average annual fluctuation of 6 feet with the highest water level in May and lowest water level in October. A 6-foot drawdown exposes 600 acres (about 20%) around the perimeter of the reservoir which is 3,150 acres at normal elevation. The drawdown eliminates all flooding of terrestrial vegetation, and reduces cover in most littoral areas, but provides habitat for fall migrating shorebirds and increases shoreline recreation access; (b) Rule curve 16 would keep the Salmon River Reservoir near full elevation (933 to 934 feet mean sea level [MSL]) from May through July, thereby preserving spawning fish and waterfowl nesting habitat during the most critical reproduction period; (c) Rule Curve 16 would increase late summer elevations (up to 4 feet greater than historical) which could affect recreation and aesthetics; (d) Moderate fall drawdowns would continue to occur; and (e) Rule Curve 16 would preserve a continuous base flow needed for the trout and salmonid fishery downstream.

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As a result, FERC concluded that Rule Curve 16 protects the reservoir fisheries while maintaining continuous base flows to support the riverine fisheries resources in the Salmon River. Rule curve 16 provides enhancement over historical operation by maintaining higher water levels in early summer and using a more moderate drawdown in late summer/fall. Rule Curve 16 fulfills the resource agency's primary management objective to protect and enhance the important recreational trout and salmonid fishery in the Salmon River.

Environmental Assessment (included in the Order Issuing Original License):

<https://elibrary.ferc.gov/eLibrary/idmws/common/opennat.asp?fileID=8402048>

The Salmon River Project is in compliance with resource agency conditions issued regarding flow conditions. The FERC license, Settlement Offer, and Section 401 Water Quality Certificate (WQC) include the requirements for flow releases and water level control recommended by the New York State Department of Environmental Conservation (NYSDEC) and United States Fish and Wildlife Service (USFWS).

Article 402 of the license requires that a flow and reservoir elevation monitoring plan be developed to ensure compliance with Article 401 of the license. The licensee filed a Final Comprehensive Plan for Monitoring Stream Flows and Reservoir Water Surface Elevations on February 11, 1997, which was approved by the Commission on May 5, 1997. Consistent with the approved flow and reservoir elevation monitoring plan, the licensee installed staff gages in the Salmon River Reservoir for purposes of field verification. The reservoir levels in the Salmon River Reservoir are continuously monitored by the license's National System Control Center.

On August 20, 2003, the licensee filed a request to amend the flow and reservoir elevation monitoring plan to relieve the licensee of funding requirements associated with the USGS gage station USGS Gage 04250200 Salmon River at Pineville, NY. In lieu of funding the downstream USGS gage, the Licensee maintains a website to provide the public with short-term and long-term release information immediately downstream of Lighthouse Hill (<https://safewaters.com/facility/42>). FERC issued the Order Amending Article 402 and Streamflow Monitoring Plan on September 30, 2003.

Plan for Monitoring Stream Flows and Reservoir Water Surface Elevations:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=8357706>

Order Modifying and Approving Plan:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=3079501>

Request to Amend Order Modifying and Approving Monitoring Plan:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=9764445>

Order Amending Article 402 and Streamflow Monitoring Plan:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=9785431>

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Erie remains in compliance with the established flow conditions and impoundment levels and maintains records of these conditions at the Project. In the event of a deviation from established minimum flows or impoundment levels, Erie files documentation with FERC detailing the reasons for the deviation.

III.A.2 Ecological Flows: Bennetts Bridge Development Zone 2

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
A	2	<u>Agency Recommendation (see Appendix A for definitions):</u> <ul style="list-style-type: none">• Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective).• Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement.• Explain how the recommendation relates to agency management goals and objectives for fish and wildlife.• Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

Zone 2 of the Salmon River Project is the Bennetts Bridge bypassed reach. As required by the Settlement Offer and License Article 401, the Salmon River Project operates according to Rule Curve 16, as described in the Water Budget Model, submitted May 5, 1993, and modified on June 16, 1993 and August 9, 1993. Rule Curve 16 provides protection and enhancement of aquatic resources, water quality, fisheries, aesthetic resources, and recreation resources in the Salmon River basin. The Offer of Settlement requires:

- (1) A continuous year-round base flow from the Lighthouse Hill Reservoir while maintaining target water surface elevations in the Salmon River Reservoir. Monthly target water surface elevations are shown in the table below.

Target water surface elevations for the Salmon River Reservoir are measured at Bennetts Bridge. Base flows are released directly from the Lighthouse Hill development, except for the 22 cfs which is released from the Salmon River Fish Hatchery.

Target water surface elevations for Salmon River Reservoir may not be achievable during periods of high or low inflows. High-flow and low-flow periods are defined when the water surface elevation at Salmon River Reservoir reaches the limits included in the table below. During high-flow or low-flow periods, base flows should take precedence over reservoir elevations. However, base flows could be less than the required amount during extreme drought emergency conditions.

Salmon River Project Rule Curve 16 Targe Base Flows and Reservoir Elevations

Month	Base Flow at Lighthouse Hill (cfs)	Target Water Survey Elevation at Salmon River Reservoir (ft)	High-flow Trigger Elevation (ft)	Low-flow Trigger Elevation (ft)
January	285	935	936	925
February	285	932	933	925
March	285	923	937	920
April	285	926	937	920
May	185	936	937	920
June	185	936	937	920
July	185	936	937	920
August	185	935	936	920
September	335	933	934	918
October	335	930	931	918
November	335	930	931	918
December	335	931	932	925

- (2) Releasing a continuous minimum flow at the Bennetts Bridge dam into the Bennetts Bridge bypass reach of 20 cfs July 1 through September 30, and 7 cfs for the remainder of the year

The Salmon River Water Budget Model simulates daily inflow, reservoir elevations, generation, storage, and outflow for the two developments. The model used 17 years of generation and flow records collected prior to 1986 to simulate project operations for three operating scenarios: run-of-river, historical, and Rule Curve 16.

The licensee provides a flow in the bypassed reach of 7 cfs between October 1 and June 30, and 20 cfs between July 1 and September 30. According to the Environmental Assessment, Rule Curve 16 would have minimal effect on flows in the Bennetts Bridge bypassed reach, therefore the limited fishery in the bypassed reach would not change. The flow is intended primarily for aesthetics at the Salmon River Falls and flows correspond to periods when most sightseers would be in the area.

Environmental Assessment (included in the Order Issuing Original License):

<https://elibrary.ferc.gov/eLibrary/idmws/common/opennat.asp?fileID=8402048>

The Salmon River Project is in compliance with resource agency conditions issued regarding flow conditions. The FERC license, Settlement Offer, and Section 401 WQC include the requirements for flow releases and water level control recommended by the NYSDEC and USFWS.

Article 402 of the license requires that a Flow and Reservoir Elevation Monitoring Plan be developed to ensure compliance with Article 401 of the license. The licensee filed a Final Comprehensive Plan for Monitoring Stream Flows and Reservoir Water Surface Elevations on February 11, 1997, which was approved by the Commission on May 5, 1997. Consistent with the

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approved flow and reservoir elevation monitoring plan, the licensee installed a minimum flow pipe with valve to provide flow to the Bennetts Bridge bypassed reach.

On August 20, 2003, the licensee filed a request to amend the Flow and Reservoir Elevation Monitoring Plan to relieve the licensee of funding requirements associated with the USGS gage station USGS Gage 04250200 Salmon River at Pineville, NY. In lieu of funding the downstream USGS gage, the Licensee maintains a website to provide the public with short-term and long-term release information immediately downstream of Lighthouse Hill (<https://safewaters.com/facility/42>). FERC issued the Order Amending Article 402 and Streamflow Monitoring Plan on September 30, 2003.

Plan for Monitoring Stream Flows and Reservoir Water Surface Elevations:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=8357706>

Order Modifying and Approving Plan:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=3079501>

Request to Amend Order Modifying and Approving Monitoring Plan:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=9764445>

Order Amending Article 402 and Streamflow Monitoring Plan:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=9785431>

Article 408 of the license required the licensee to modify the streambed at the top of Salmon River Falls to better distribute the minimum flow releases required in Article 401 over the falls. On December 12, 1996, the license filed a plan to modify the stream bed which was approved by FERC on September 9, 1997.

Order Modify and Approving Stream Bed Modification Plan:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=8184198>

Erie remains in compliance with the established flow conditions and impoundment levels and maintains a record of these conditions at the Project. In the event of a deviation from established minimum flows or impoundment levels, Erie files documentation with FERC detailing the reasons for the deviation.

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III.A.3 Ecological Flows: Bennetts Bridge Development Zone 3

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
A	2	<u>Agency Recommendation (see Appendix A for definitions):</u> <ul style="list-style-type: none">• Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective).• Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement.• Explain how the recommendation relates to agency management goals and objectives for fish and wildlife.• Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

See response above for Zone 2.

Information Required to Support Water Quality Standards.

III.B.1 Water Quality: Bennetts Bridge Development Zone 1

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
B	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none">• Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective).• Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement.• Explain how the recommendation relates to agency management goals and objectives for fish and wildlife.• Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

The Salmon River is listed as an impaired in the 2018 Section 303(d) List of Impaired Waters Requiring a total maximum daily load (TMDL)/Other Strategy for polychlorinated biphenyls (PCBs) and Mirex contaminated sediments. The cause of this impairment is not related to the Salmon River Project. A copy of the Final 2018 Section 303(d) list for New York State can be viewed at https://www.dec.ny.gov/docs/water_pdf/section303d2018.pdf

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The NYSDEC classifies the Salmon River as a coldwater fishery that supports trout and is best suited for fishing. The NYSDEC determined that the impairment is not caused by the Salmon River Project but is caused by contaminated sediments; Mirex and PCBs.

The Salmon River Project operates according to Rule Curve 16, to provide protection and enhancement of aquatic resources, water quality, fisheries, aesthetic resources, and recreation resources in the Salmon River basin. The Offer of Settlement requires a continuous year-round base flow from the Lighthouse Hill Reservoir while maintaining target water surface elevations in the Salmon River Reservoir, consistent with Rule Curve 16.

According to the Environmental Assessment, the Licensee performed a field study in May and September 1993 to examine reservoir habitat, which would be affected by drawdown, and to determine the effects of alternative operation scenarios. The study found that Rule Curve 16 would have the following effects: (a) the Salmon River Reservoir would have an average annual fluctuation of 6 feet with the highest water level in May and the lowest water level in October. A 6-foot drawdown exposes 600 acres (about 20%) around the perimeter of the reservoir which is 3,150 acres at normal elevation. The drawdown eliminates all flooding of terrestrial vegetation, and reduces cover in most littoral areas, but provides habitat for fall migrating shorebirds and increases shoreline recreation access; (b) Rule curve 16 would keep the Salmon River Reservoir near full elevation (933 to 934 feet MSL) from May through July, thereby preserving spawning fish and waterfowl nesting habitat during the most critical reproduction period; (c) Rule Curve 16 would increase late summer elevations (up to 4 feet greater than historical) which could affect recreation and aesthetics; (d) Moderate fall drawdowns would continue to occur; and (e) Rule Curve 16 would preserve a continuous base flow needed for the trout and salmonid fishery downstream.

The Salmon River Project is in compliance with all conditions issued pursuant to a Clean Water Act – Section 401 WQC. The Section 401 WQC is conditioned on compliance with the terms of the Settlement Offer. The WQC for the Project was issued April 28, 1994 (https://lowimpacthydro.org/wp-content/uploads/2020/08/11408_Salmon_WQC.pdf). Consistent with License Article 403, on-going water quality monitoring at the Project is limited to temperature monitoring at the Lighthouse Hill Reservoir, USGS Pineville Gage, and the Salmon River Fish Hatchery.

Generally, any changes to the original WQC are necessitated by significant changes in or to the Project environment affecting the Conditions of the original WQC, which culminates in an amendment of the original WQC. This situation has not occurred for the Salmon River Project WQC, and the original WQC, issued on April 28, 1994 is still in effect.

Additionally, the Applicant contacted the NYSDEC on July 8, 2021, regarding the current WQC status for the Project. The NYSDEC responded on July 12, 2021 stating that the existing WQC is

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valid for the duration of the FERC license. The consultation documentation regarding the 401 WQC is included in Appendix D.

III.B.2 Water Quality: Bennetts Bridge Development Zone 2

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
B	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none">• Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective).• Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement.• Explain how the recommendation relates to agency management goals and objectives for fish and wildlife.• Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

See above response for Zone 1.

III.B.3 Water Quality: Bennetts Bridge Development Zone 3

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
B	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none">• Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective).• Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement.• Explain how the recommendation relates to agency management goals and objectives for fish and wildlife.• Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

See above response for Zone 1.

Information Required to Support Upstream Fish Passage Standards.

III.C.1 Upstream Fish Passage: Bennetts Bridge Development Zone 1

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
C	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none">• Explain why the facility does not impose a barrier to upstream fish passage in the designated zone. Typically, impoundment zones will qualify for this standard since once above a dam and in an impoundment, there is no facility barrier to further upstream movement.• Document available fish distribution data and the lack of migratory fish species in the vicinity.• If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

There are no upstream fish passage barriers or migratory fish management issues in Zone 1 because it is an impoundment. There are no mandatory prescriptions (Section 18 or similar) for the passage of riverine fish at the Development. In the Settlement Offer, the Department of the Interior (Interior) did request reservation of its authority to prescribe upstream and downstream fish passage devices in the future, which is provided in Article 406 of the 1996 FERC license.

According to the Environmental Assessment, the Salmon River Reservoir is considered a good self-sustaining largemouth bass fishery but is dominated by stunted yellow perch. Other species present in small populations include rock bass, brown bullhead, pumpkinseed, and occasional rainbow, brown, and brook trout.

Environmental Assessment (included in the Order Issuing Original License):

<https://elibrary.ferc.gov/eLibrary/idmws/common/opennat.asp?fileID=8402048>

III.C.2 Upstream Fish Passage: Bennetts Bridge Development Zone 2

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
C	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none">• Explain why the facility does not impose a barrier to upstream fish passage in the designated zone. Typically, impoundment zones will qualify for this standard since once above a dam and in an impoundment, there is no facility barrier to further upstream movement.• Document available fish distribution data and the lack of migratory fish species in the vicinity.• If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

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There are no mandatory prescriptions (Section 18 or similar) for the passage of riverine fish at the Development. In the Settlement Offer, the Interior did request reservation of its authority to prescribe upstream and downstream fish passage devices in the future, which is provided in Article 406 of the 1996 FERC license.

The 110-foot-high Salmon River Falls, located on the Bennetts Bridge bypassed reach, physically separates the upper and lower segments of the bypassed reach. The Salmon River Falls provides a natural historical barrier to upstream movement of fish from Lake Ontario to the Salmon River above the falls.

According to Environmental Assessment, there is little suitable habitat for fish in the Bennetts Bridge bypassed reach. Surveys performed prior to issuance of the 1996 FERC license identified brown trout, rainbow trout, yellow perch, pumpkinseed, and brown bullhead in the Lighthouse Hill impoundment. However, the natural barrier in the bypassed reach hinders upstream passage.

Environmental Assessment (included in the Order Issuing Original License):

<https://elibrary.ferc.gov/eLibrary/idmws/common/opennat.asp?fileID=8402048>

III.C.3 Upstream Fish Passage: Bennetts Bridge Development Zone 3

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
C	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none">• Explain why the facility does not impose a barrier to upstream fish passage in the designated zone. Typically, impoundment zones will qualify for this standard since once above a dam and in an impoundment, there is no facility barrier to further upstream movement.• Document available fish distribution data and the lack of migratory fish species in the vicinity.• If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

See response to Zone 2.

Information Required to Support Downstream Fish Passage Standards.

III.D.1 Downstream Fish Passage: Bennetts Bridge Development Zone 1

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
D	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none">• Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective).• Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is part of a Settlement

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		<p>Agreement or not.</p> <ul style="list-style-type: none">Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.
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The Interior requested reservation of its authority to prescribe upstream and downstream fish passage devices in the future, which was granted in Article 406 of the license. Article 404 of the license requires Erie to install 1.0-inch trashracks at Bennetts Bridge when the existing trashracks wear out. The existing 1.5-inch trashracks are still being utilized at the Bennetts Bridge intake. According to the Environmental Assessment, the velocity at the intake with 1-inch trashracks would not exceed 2.0 feet per second. Consistent with Article 404, Erie plans to install 1-inch trashracks when the 1.5-inch trashracks wear out. The recommendation for 1-inch trashracks was based on entrainment and mortality studies performed at other hydroelectric facilities.

According to the Environmental Assessment, the Salmon River Reservoir is considered a good self-sustaining largemouth bass fishery but is dominated by stunted yellow perch. Other species present in small populations include rock bass, brown bullhead, pumpkinseed, and occasional rainbow, brown, and brook trout.

Environmental Assessment (included in the Order Issuing Original License):

<https://elibrary.ferc.gov/eLibrary/idmws/common/opennat.asp?fileID=8402048>

III.D.2 Downstream Fish Passage: Bennetts Bridge Development Zone 2

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
D	1	<p><u>Not Applicable / De Minimis Effect:</u></p> <ul style="list-style-type: none">Explain why the facility does not impose a barrier to downstream fish passage in the designated zone, considering both physical obstruction and increased mortality relative to natural downstream movement (e.g., entrainment into hydropower turbines). Typically, tailwater/downstream zones will qualify for this standard since below a dam and powerhouse there is no facility barrier to further downstream movement. Bypassed reach zones must demonstrate that flows in the reach are adequate to support safe, effective and timely downstream migration.For riverine fish populations that are known to move downstream, explain why the facility does not contribute adversely to the sustainability of these populations or to their access to habitat necessary for successful completion of their life cycles.Document available fish distribution data and the lack of migratory fish species in the vicinity.If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

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There are no mandatory prescriptions (Section 18 or similar) for the passage of riverine fish at the Development. In the Settlement Offer, the Interior did request reservation of its authority to prescribe upstream and downstream fish passage devices in the future, which is provided in Article 406 of the 1996 FERC license.

The 110-foot-high Salmon River Falls, located on the Bennetts Bridge bypassed reach, physically separates the upper and lower segments of the bypassed reach. The Salmon River Falls provides a natural historical barrier to upstream movement of fish from Lake Ontario to the Salmon River above the falls.

According to the Environmental Assessment, there is little suitable habitat for fish in the Bennetts Bridge bypassed reach. Surveys performed prior to issuance of the 1996 FERC license identified brown trout, rainbow trout, yellow perch, pumpkinseed, and brown bullhead in the Lighthouse Hill impoundment.

Environmental Assessment (included in the Order Issuing Original License):

<https://elibrary.ferc.gov/eLibrary/idmws/common/opennat.asp?fileID=8402048>

III.D.3 Downstream Fish Passage: Bennetts Bridge Development Zone 3

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
D	1	<p><u>Not Applicable / De Minimis Effect:</u></p> <ul style="list-style-type: none">• Explain why the facility does not impose a barrier to downstream fish passage in the designated zone, considering both physical obstruction and increased mortality relative to natural downstream movement (e.g., entrainment into hydropower turbines). Typically, tailwater/downstream zones will qualify for this standard since below a dam and powerhouse there is no facility barrier to further downstream movement. Bypassed reach zones must demonstrate that flows in the reach are adequate to support safe, effective and timely downstream migration.• For riverine fish populations that are known to move downstream, explain why the facility does not contribute adversely to the sustainability of these populations or to their access to habitat necessary for successful completion of their life cycles.• Document available fish distribution data and the lack of migratory fish species in the vicinity.• If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

See response to Zone 2.

Information Required to Support Shoreline and Watershed Protection Standards.

III.E.1 Shoreline and Watershed Protection: Bennetts Bridge Development Zone 1

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
E	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none">• If there are no lands with significant ecological value associated with the facility, document and justify this (e.g., describe the land use and land cover within the FERC project or facility boundary).• Document that there have been no Shoreline Management Plans or similar protection requirements for the facility.
E	PLUS	<u>Bonus Activities:</u> <ul style="list-style-type: none">• Provide documentation that the facility has a formal conservation plan protecting a buffer zone of 50% or more of the undeveloped shoreline that the facility owns around its reservoirs and river corridors.• In lieu of a formal conservation plan, provide documentation that the facility has established a watershed enhancement fund for ecological land management that will achieve the equivalent land protection value of an ecologically effective buffer zone of 50% or more around undeveloped shoreline.

The Bennetts Bridge Development is located in the towns of Redfield and Orwell. The Project area is rural in character and dominated by water, small hamlets, and forestland. The Salmon River Reservoir is surrounded by woodlands, with summer residence and camps located along the north shoreline. The shoreline ranges from shallow to steep banks. According to the Environmental Assessment, fine-sized (clay, silt, and fine sand-size) components of the area's stony glacial till have been washed away by waver action leaving behind coarser sands, gravel, and cobbles. No unstable banks or shoreline erosion has been reported.

There is no Shoreline Management Plan for this development.

The NYSDEC estimates that more than 50% of the Project impoundments have dedicated buffer zones for conservation purposes; however, the project boundary does not extend 200-feet from the high-water mark. Much of the upland property is owned by New York State and managed as state forest land, based on a transfer of ownership from the licensee as part of the Settlement Offer.

Additionally, exempt from any FERC license requirement, Erie voluntarily developed land use management policies for Project lands that manage previously developed shoreline and protect undeveloped properties. Erie also established and finances the Salmon River Enhancement Fund which supports NYSDEC proposed enhancement for the Salmon River basin.

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III.E.2 Shoreline and Watershed Protection: Bennetts Bridge Development Zone 2

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
E	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none">• If there are no lands with significant ecological value associated with the facility, document and justify this (e.g., describe the land use and land cover within the FERC project or facility boundary).• Document that there have been no Shoreline Management Plans or similar protection requirements for the facility.
E	PLUS	<u>Bonus Activities:</u> <ul style="list-style-type: none">• Provide documentation that the facility has a formal conservation plan protecting a buffer zone of 50% or more of the undeveloped shoreline that the facility owns around its reservoirs and river corridors.• In lieu of a formal conservation plan, provide documentation that the facility has established a watershed enhancement fund for ecological land management that will achieve the equivalent land protection value of an ecologically effective buffer zone of 50% or more around undeveloped shoreline.

See response above for Zone 1.

III.E.3 Shoreline and Watershed Protection: Bennetts Bridge Development Zone 3

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
E	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none">• If there are no lands with significant ecological value associated with the facility, document and justify this (e.g., describe the land use and land cover within the FERC project or facility boundary).• Document that there have been no Shoreline Management Plans or similar protection requirements for the facility.
E	PLUS	<u>Bonus Activities:</u> <ul style="list-style-type: none">• Provide documentation that the facility has a formal conservation plan protecting a buffer zone of 50% or more of the undeveloped shoreline that the facility owns around its reservoirs and river corridors.• In lieu of a formal conservation plan, provide documentation that the facility has established a watershed enhancement fund for ecological land management that will achieve the equivalent land protection value of an ecologically effective buffer zone of 50% or more around undeveloped shoreline.

See response above for Zone 1.

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Information Required to Support Threatened and Endangered Species Standards.

III.F.1 Threatened and Endangered Species: Bennetts Bridge Development Zone 1

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
F	3	<p><u>Recovery Planning and Action:</u></p> <ul style="list-style-type: none">• If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents.• Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

Based on information received from the USFWS's New York Field Office on July 2, 2021, regarding a request for information on rare, threatened or endangered (RTE) species it appears that the Northern Long-eared Bat (*Myotis septentrionalis*) may potentially occur within the Project area. There are no critical habitats located within the Bennetts Bridge Development area.

The USFWS has not adopted a formal recovery plan for the northern long-eared bat. On January 14, 2016, the USFWS published the final 4(d) rule identifying prohibitions for the protection of northern long-eared bats. Operations of the Salmon River Project, especially with regard to tree clearing from June 1 through July 31, adhere to the prohibitions outlined in the final 4(d) rule.

During preparation of this application, Erie also consulted with NYSDEC's Natural Heritage Program for an updated list of threatened and endangered species that may occur in the vicinity of the Salmon River Project. By letter dated August 12, 2021, the NYSDEC indicated that Bald Eagle (*Haliaeetus leucocephalus*) and Pied-billed Grebe (*Podilymbus podiceps*), which are state-listed as threatened, have been documented in the vicinity of the Salmon River Project. The Bald Eagle and Pied-billed Grebe are protected under Environmental Conservation Law Section 11-0535, New York Code of Rules and Regulations (6 NYCRR Part 182), and the Migratory Bird Treaty Act. Bald Eagles have been documented in multiple locations within the project boundary and Pied-billed Grebe have been documented with 200 years of the Lighthouse Hill reservoir. There are no critical habitats documented within the Salmon River Project area.

The NYSDEC has developed a Conservation Plan for Bald Eagles in New York State:

NYSDEC. 2016. Conservation Plan for Bald Eagles in New York State.

Conservation strategies include limiting construction, foresting, and recreation activities in the vicinity of nest trees and deep winter roost sites.

The NYSDEC has not adopted a formal recovery plan for the Pied-billed Grebe. However, Pied-billed Grebe nesting habitat, freshwater wetlands, are protected under the Freshwater Wetlands Act which wetlands greater than 12.4 acres in size.

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There are no specific additional requirements for threatened or endangered species protection in the FERC license or WQC for the Salmon River Project.

The record of RTE consultation is included in Appendix E.

III.F.2 Threatened and Endangered Species: Bennetts Bridge Development Zone 2

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
F	3	<u>Recovery Planning and Action:</u> <ul style="list-style-type: none">• If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents.• Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

See response above for Zone 1.

III.F.3 Threatened and Endangered Species: Bennetts Bridge Development Zone 3

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
F	3	<u>Recovery Planning and Action:</u> <ul style="list-style-type: none">• If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents.• Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

See response above for Zone 1.

Information Required to Support Cultural and Historic Resources Standards.

III.G.1 Cultural and Historic Resources: Bennetts Bridge Development Zone 1

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
G	2	<u>Approved Plan:</u> <ul style="list-style-type: none">• Provide documentation of all approved state, federal, and recognized tribal plans for the protection, enhancement, and mitigation of impacts to cultural and historic resources affected by the facility.• Document that the facility is in compliance with all such plans.

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Article 411 of the license requires implementation of the "Programmatic Agreement Among the Federal Energy Regulatory Commission, the Advisory Council on Historic Preservation, and the New York State Historic Preservation Officer, for Managing Historic Properties That May Be Affected By A License Issuing to Niagara Mohawk Power Corporation For the Continued Operation of the Salmon River Hydroelectric Power Project in New York," executed on January 13, 1995.

According to the 1996 Environmental Assessment, cultural resource studies in the area of potential effect (APE) identified that the Bennetts Bridge Development (powerhouse, surge tank, and dam) is eligible for listing on the National Register of Historic Places. Bennetts Bridge is eligible because of its contribution to the period of innovation and experimentation which characterized hydroelectricity between 1895 and 1920. During this period, the Salmon River was described in the Engineering Record as the next best source of waterpower in the state, after the Niagara River.

Environmental Assessment (included in the February 21, 1996 Order Issuing License):

<https://elibrary.ferc.gov/eLibrary/idmws/common/opennat.asp?fileID=8402048>

The licensee filed a Cultural Resources Management Plan (CRMP) on February 25, 1997, which was subsequently approved by FERC on June 1, 1998. The licensee implements its Programmatic Agreement and CRMP to mitigate the effects of operations within the project's APE, pursuant to license Article 411.

The licensee files an annual monitoring report on activities undertaken that may be subject to the CRMP. The annual monitoring report for 2020 was filed on February 23, 2021. The licensee appears to be in compliance with its requirements with regard to cultural resources.

Cultural Resources Management Plan:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=8216663>

Order Approving CRMP:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=49654>

February 23, 2021 Annual CRMP Report:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=15721563>

III.G.2 Cultural and Historic Resources: Bennetts Bridge Development Zone 2

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
G	2	<u>Approved Plan:</u> <ul style="list-style-type: none">• Provide documentation of all approved state, federal, and recognized tribal plans for the protection, enhancement, and mitigation of impacts to cultural and historic resources affected by the facility.• Document that the facility is in compliance with all such plans.

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See above response for Zone 1.

III.G.3 Cultural and Historic Resources: Bennetts Bridge Development Zone 3

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
G	2	<u>Approved Plan:</u> <ul style="list-style-type: none">• Provide documentation of all approved state, federal, and recognized tribal plans for the protection, enhancement, and mitigation of impacts to cultural and historic resources affected by the facility.• Document that the facility is in compliance with all such plans.

See above response for Zone 1.

Information Required to Support Recreational Resources Standards.

III.H.1 Recreational Resources: Bennetts Bridge Development Zone 1

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
H	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none">• Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations.• Document that the facility is in compliance with all such recommendations and plans.

Article 412 requires the licensee to file a recreation plan to provide enhanced recreation at the Hogback Road campground, Lighthouse Hill Reservoir, and Salmon River Reservoir. Consistent with Article 412, the recreation plan shall include: improving fishing and boating areas; providing canoe and car-top boat access; installing parking, picnic tables and signage; and establishing natural buffer zones within six months from date of issuance of the license.

On May 1, 1997 FERC issued an Order Approving the Recreation Plan, which was submitted to FERC on December 12, 1996. Recreation enhancements included (1) constructing a parking area, picnic area, and canoe and car-top boating access at the Hogback Road area; (2) regrading boat launches and parking areas at the Falls Road Recreation facility at the west end of the Salmon River Reservoir; (3) expanding the boat launch and parking area at the Redfield site on the Salmon River Reservoir; and (4) selectively clearing trees at some of the recreation areas to improve scenic views, and used the existing vegetation to act as a natural buffer to screen recreation sites from waterway users.

On October 10, 2020, Erie filed a request to amend the Recreation Plan to incorporate changes based on observed recreational use, which FER approved on February 10, 2004. The Salmon River Project is in compliance with recreational access, accommodation, and facilities' conditions in the FERC license.

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Article 412 Recreation Plan:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=8231300>

Order Approving the Recreation Plan:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=3079127>

Order Amending Recreation Plan:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=10060166>

Erie permits free public access to the shoreline of the Bennetts Bridge Development across Erie's lands where Project facilities, hazardous areas and existing leases, easements, and private ownership do not preclude access.

III.H.2 Recreational Resources: Bennetts Bridge Development Zone 2

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
H	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none">• Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations.• Document that the facility is in compliance with all such recommendations and plans.

See response above for Zone 1.

III.H.3 Recreational Resources: Bennetts Bridge Development Zone 3

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
H	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none">• Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations.• Document that the facility is in compliance with all such recommendations and plans.

See response above for Zone 1.

LIGHTHOUSE HILL DEVELOPMENT

Information Required to Support Ecological Flows Standards.

III.A.4 Ecological Flows: Lighthouse Hill Development Zone 4

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
A	2	<u>Agency Recommendation (see Appendix A for definitions):</u> <ul style="list-style-type: none">• Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective).• Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement.• Explain how the recommendation relates to agency management goals and objectives for fish and wildlife.• Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

Zone 4 of the Salmon River Project is the Lighthouse Hill impoundment. As required by the Settlement Offer and License Article 401, the Salmon River Project operates according to Rule Curve 16, as described in the Water Budget Model, submitted May 5, 1993, and modified on June 16, 1993 and August 9, 1993. Rule Curve 16 provides protection and enhancement of aquatic resources, water quality, fisheries, aesthetic resources, and recreation resources in the Salmon River basin.

The Salmon River Water Budget Model simulates daily inflow, reservoir elevations, generation, storage, and outflow for the two developments. The model used 17 years of generation and flow records collected prior to 1986 to simulate project operations for three operating scenarios: run-of-river, historical, and Rule Curve 16. Under Rule Curve 16, the Lighthouse Hill impoundment may fluctuate between 645 feet and 651 feet.

According to the Environmental Assessment, the Licensee performed a field study in May and September 1993 to examine reservoir habitat which would be affected by drawdown and to determine the effects of alternative operation scenarios. Reservoir head-duration tables and reservoir surface area duration tables from the Salmon River Water Budget Model were used as the basis for fluctuation and drawdown analyses. The study found that under Rule Curve 16, fluctuations in Salmon River Reservoir would be reduced and fluctuations in Lighthouse Hill Reservoir would continue. As a result, FERC concluded that Rule Curve 16 protects the reservoir fisheries while maintaining continuous base flows to support the riverine fisheries resources in the Salmon River. Rule curve 16 provides enhancement over historical operation by maintaining higher water levels in early summer and using a more moderate drawdown in late summer/fall.

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Rule Curve 16 fulfills the resource agency's primary management objective to protect and enhance the important recreational trout and salmonid fishery in the Salmon River.

Environmental Assessment (included in the Order Issuing Original License):

<https://elibrary.ferc.gov/eLibrary/idmws/common/opennat.asp?fileID=8402048>

The Salmon River Project is in compliance with resource agency conditions issued regarding flow conditions. The FERC license, Settlement Offer, and Section 401 Water Quality Certificate (WQC) include the requirements for flow releases and water level control recommended by the NYSDEC and USFWS.

Article 402 of the license requires a flow and reservoir elevation monitoring plan be developed to ensure compliance with Article 401 of the license. The licensee filed a Final Comprehensive Plan for Monitoring Stream Flows and Reservoir Water Surface Elevations on February 11, 1997, which was approved by the Commission on May 5, 1997. Consistent with the approved flow and reservoir elevation monitoring plan, the licensee installed staff gages in the Salmon River Reservoir for purposes of field verification. The reservoir levels in the Salmon River Reservoir are continuously monitored by the license's National System Control Center.

On August 20, 2003, the licensee filed a request to amend the Flow and Reservoir Elevation Monitoring Plan to relieve the licensee of funding requirements associated with the USGS Gage 04250200 Salmon River at Pineville, NY. In lieu of funding the downstream USGS gage, the Licensee maintain a website to provide the public with short-term and long-term release information immediately downstream of Lighthouse Hill (<https://safewaters.com/facility/42>). FERC issued the Order Amending Article 402 and Streamflow Monitoring Plan on September 30, 2003.

Plan for Monitoring Stream Flows and Reservoir Water Surface Elevations:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=8357706>

Order Modifying and Approving Plan:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=3079501>

Request to Amend Order Modifying and Approving Monitoring Plan:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=9764445>

Order Amending Article 402 and Streamflow Monitoring Plan:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=9785431>

Erie remains in compliance with the established flow conditions and impoundment levels and maintains records of these conditions at the Project. In the event of a deviation from established minimum flows or impoundment levels, Erie files documentation with FERC detailing the reasons for the deviation.

III.A.5 Ecological Flows: Lighthouse Hill Development Zone 5

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
A	2	<u>Agency Recommendation (see Appendix A for definitions):</u> <ul style="list-style-type: none">• Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective).• Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement.• Explain how the recommendation relates to agency management goals and objectives for fish and wildlife.• Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

Zone 5 of the Salmon River Project is the Lighthouse Hill bypassed reach. As required by the Settlement Offer and License Article 401, the Salmon River Project operates according to Rule Curve 16, as described in the Water Budget Model, submitted May 5, 1993, and modified on June 16, 1993 and August 9, 1993. Rule Curve 16 provides protection and enhancement of aquatic resources, water quality, fisheries, aesthetic resources, and recreation resources in the Salmon River basin. The Offer of Settlement requires:

- (1) A continuous year-round base flow from the Lighthouse Hill Reservoir while maintaining target water surface elevations in the Salmon River Reservoir. Monthly target water surface elevations are shown in the table below.

Target water surface elevations for Salmon River Reservoir would be measured at Bennetts Bridge. Base flows would be released directly from the Lighthouse Hill development, except for the 22 cfs which would be released from the Salmon River Fish Hatchery.

Target water surface elevations for Salmon River Reservoir may not be achievable during periods of high or low inflows. High-flow and low-flow periods are defined when the water surface elevation at Salmon River Reservoir reaches the limits included in the table below. During high-flow or low-flow periods, base flows should take precedence over reservoir elevations. However, base flows could be less than the required amount during extreme drought emergency conditions.

Salmon River Project Rule Curve 16 Targe Base Flows and Reservoir Elevations

Month	Base Flow at Lighthouse Hill (cfs)	Target Water Survey Elevation at Salmon River Reservoir (ft)	High-flow Trigger Elevation (ft)	Low-flow Trigger Elevation (ft)
January	285	935	936	925
February	285	932	933	925
March	285	923	937	920
April	285	926	937	920
May	185	936	937	920
June	185	936	937	920
July	185	936	937	920
August	185	935	936	920
September	335	933	934	918
October	335	930	931	918
November	335	930	931	918
December	335	931	932	925

- (2) Providing flow from the Lighthouse Hill Reservoir to Salmon River Fish Hatchery, not to exceed 22 cfs;
- (3) Ramping flows when changes to the releases are not the result of increased inflow. The flow would be ramped by increasing flows in increments of 400 cfs or less every 24 hours when base flows are greater than 185 cfs, and increments of 200 cfs or less when base flows are 285 cfs or less. Down-ramping, or decreasing flows, would occur on a 12-hour basis according to the same flow schedule;
- (4) Releases for whitewater boating activities at least five weekends per year from Lighthouse Hill for whitewater users, as specified in the attachment to the Offer of Settlement dated August 9, 1993 and amendment filed with the Commission by letter dated May 9, 1994. These flows should be provided as follows: one weekend in June - 400 cfs; two weekends in July - 750 cfs; the first full weekend in August - 750 cfs; and the first weekend in September - 750 cfs.

The Salmon River Water Budget Model simulated daily inflow, reservoir elevations, generation, storage, and outflow for the two developments. The model used 17 years of generation and flow records collected prior to 1986 to simulate project operations for three operating scenarios: run-of-river, historical, and Rule Curve 16.

Between 1985 and 1987, an instream flow incremental methodology (IFIM) study was conducted along a 17-mile segment of the Salmon River below Lighthouse Hill to identify optimum habitat for fisheries in the Salmon River, and to evaluate the effect of alternative operating regimes (run-of-river, historical, and Rule Curve 16) on the fisheries and other aquatic resource uses. The study included 24 transects representing 80% of the study area. Target fish species were selected to represent the species and life stages endemic to the aquatic community. Four life-history stages (fry, juvenile, spawning, and adult) were modeled for longnose dace, white sucker, common

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shiner, and Atlantic salmon. Flows between 25 cfs and 2,900 cfs were modeled and a habitat-duration analysis was conducted to determine the average annual habitat for each target species and life stage.

According to the Environmental Assessment, the IFIM study showed (a) the optimum flow for all species/life stages in the Salmon River for the entire year is between 400 and 500 cfs, (b) a minimum flow of 350 cfs is needed to permit salmonid movement, (c) bank-to-bank wetted surface area occurs at 350 to 400 cfs (d) water temperatures would be best moderated at 350 to 400 cfs or greater, and (e) professional drift boat fishermen would need a minimum of 350 cfs, preferably greater, in the fall to operate their drift boats. However, flow modeling studies showed that available storage could not consistently provide uninterrupted minimum flows in the range of 400 to 500 cfs, the optimum flow for all fish species and life stages. Since uninterrupted minimum flow was the primary resource agency objective for enhancing aquatic resources in the Salmon River, seasonal flows of 285 cfs (January 1 through April 30), 185 cfs (May 1 through August 31), and 335 cfs (September 1 through December 31) were established. Additionally, ramping rates were established to protect aquatic habitat and fisheries from extreme and sudden changes in flow, as required for whitewater boating releases.

Environmental Assessment (included in the Order Issuing Original License):

<https://elibrary.ferc.gov/eLibrary/idmws/common/opennat.asp?fileID=8402048>

The Salmon River Project is in compliance with resource agency conditions issued regarding flow conditions. The FERC license, Settlement Offer, and Section 401 WQC include the requirements for flow releases and water level control recommended by the NYSDEC and USFWS.

Article 402 of the license requires that a Flow and Reservoir Elevation Monitoring Plan be developed to ensure compliance with Article 401 of the license. The licensee filed a Final Comprehensive Plan for Monitoring Stream Flows and Reservoir Water Surface Elevations on February 11, 1997, which was approved by the Commission on May 5, 1997. Consistent with the approved Flow and Reservoir Elevation Monitoring Plan, the licensee installed staff gages in the Salmon River Reservoir for purposes of field verification. The reservoir levels in the Salmon River Reservoir are continuously monitored by the license's National System Control Center.

On August 20, 2003, the licensee filed a request to amend the Flow and Reservoir Elevation Monitoring Plan to relieve the licensee of funding requirements associated with the USGS Gage 04250200 Salmon River at Pineville, NY. In lieu of funding the downstream USGS gage, the Licensee maintains a website to provide the public with short-term and long-term release information immediately downstream of Lighthouse Hill (<https://safewaters.com/facility/42>). FERC issued the Order Amending Article 402 and Streamflow Monitoring Plan on September 30, 2003.

Plan for Monitoring Stream Flows and Reservoir Water Surface Elevations:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=8357706>

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Order Modifying and Approving Plan:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=3079501>

Request to Amend Order Modifying and Approving Monitoring Plan:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=9764445>

Order Amending Article 402 and Streamflow Monitoring Plan:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=9785431>

Consistent with Article 405, Erie continues to participate in the NYSDEC sea lamprey control program by providing periodic flow releases of about 36 cfs from Lighthouse Hill, when requested by the NYSDEC, to facilitate chemical treatment of the Salmon River with lampricide.

Erie remains in compliance with the established flow conditions and impoundment levels and maintains records of these conditions at the Project. In the event of a deviation from established minimum flows or impoundment levels, Erie files documentation with FERC detailing the reasons for the deviation.

III.A.6 Ecological Flows: Lighthouse Hill Development Zone 6

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
A	2	<p><u>Agency Recommendation (see Appendix A for definitions):</u></p> <ul style="list-style-type: none">• Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective).• Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement.• •Explain how the recommendation relates to agency management goals and objectives for fish and wildlife.• Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

See response above for Zone 5.

Information Required to Support Water Quality Standards.

III.B.4 Water Quality: Lighthouse Hill Development Zone 4

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
B	2	<p><u>Agency Recommendation:</u></p> <ul style="list-style-type: none">• Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective).• Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement.• Explain how the recommendation relates to agency management goals and objectives for fish and wildlife.• Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

The Salmon River is listed as impaired in the 2018 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy for PCBs and Mirex contaminated sediments. The cause of this impairment is not related to the Salmon River Project. A copy of the Final 2018 Section 303(d) list for New York State can be viewed at https://www.dec.ny.gov/docs/water_pdf/section303d2018.pdf

The NYSDEC classifies the Salmon River as a cold-water fishery that supports trout and is best suited for fishing. The NYSDEC has determined that the impairment is not caused by the Salmon River Project but is caused by contaminated sediments: Mirex and PCBs.

The Salmon River Project operates according to Rule Curve 16 (License Article 401), to provide protection and enhancement of aquatic resources, water quality, fisheries, aesthetic resources, and recreation resources in the Salmon River basin. The Offer of Settlement requires a continuous year-round base flow from the Lighthouse Hill Reservoir while maintaining target water surface elevations in the Salmon River Reservoir, consistent with Rule Curve 16.

Between 1985 and 1987, an IFIM study was conducted along a 17-mile segment of the Salmon River below Lighthouse Hill to identify optimum habitat for fisheries in the Salmon River and evaluate the effect of alternative operating regimes (run-of-river, historical, and Rule Curve 16) on the fisheries and other aquatic resource uses. Additionally, in May and September 1993, the licensee performed a field study to examine reservoir habitat which would be affected by drawdown and to determine the effects of alternative operation scenarios.

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The study found that Rule Curve 16 would have the following effects: (a) Rule curve 16 would keep the Salmon River Reservoir near full elevation (933 to 934 feet MSL) from May through July, thereby preserving spawning fish and waterfowl nesting habitat during the most critical reproduction period; (b) Rule Curve 16 would increase late summer elevations (up to 4 feet greater than historical) which could affect recreation and aesthetics; (c) Moderate fall drawdowns would continue to occur; and (d) Rule Curve 16 would preserve a continuous base flow needed for the trout and salmonid fishery downstream.

According to the Environmental Assessment, a continuous base flow would decrease water temperature fluctuations, help moderate water temperatures throughout the Salmon River, and reduce adverse temperature-related impacts on the fishery. Spawning runs of salmonids and other fish are dependent on environmental cues, including water temperature and flow. Water temperature and varying flows, as modified by operation of the Salmon River Project, could adversely affect the salmonid fishery of the Salmon River. Article 403 of the license required the licensee to file a plan to install, operate, maintain and monitor water temperature gages on the Salmon River (Lighthouse Hill Reservoir, USGS Pineville Gage, and Salmon River Fish Hatchery). The licensee filed a water temperature monitoring plan on December 12, 1996, which FERC approved on October 2, 1997.

Environmental Assessment (included in the Order Issuing Original License):

<https://elibrary.ferc.gov/eLibrary/idmws/common/opennat.asp?fileID=8402048>

Final Plan for License Article 403, 408, and 412:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=8231300>

Order Approving Water Temperature Monitoring Plan:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=8178405>

The Salmon River Project is in compliance with all conditions issued pursuant to a Clean Water Act – Section 401 WQC. The Section 401 WQC is conditioned on compliance with the terms of the Settlement Offer. The WQC for the Project was issued April 28, 1994 (https://lowimpacthydro.org/wp-content/uploads/2020/08/11408_Salmon_WQC.pdf). Consistent with License Article 403, on-going water quality monitoring at the Project is limited to temperature monitoring at Lighthouse Hill Reservoir, USGS Pineville Gage, and Salmon River Fish Hatchery.

Generally, any changes to the original WQC are necessitated by significant changes in or to the Project environment affecting the Conditions of the original WQC, which culminates in an amendment of the original WQC. This situation has not occurred for the Salmon River Project WQC, and the original WQC, issued on April 28, 1994 is still in effect.

Additionally, the Applicant contacted the NYSDEC on July 8, 2021, regarding the current WQC status for the Project. The NYSDEC responded on July 12, 2021 stating that the existing WQC is

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valid for the duration of the FERC license. The consultation documentation regarding the 401 WQC is included in Appendix D.

III.B.5 Water Quality: Lighthouse Hill Development Zone 5

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
B	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none">• Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective).• Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement.• Explain how the recommendation relates to agency management goals and objectives for fish and wildlife.• Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

See above response for Zone 4.

III.B.6 Water Quality: Lighthouse Hill Development Zone 6

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
B	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none">• Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective).• Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement.• Explain how the recommendation relates to agency management goals and objectives for fish and wildlife.• Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

See above response for Zone 4.

Information Required to Support Upstream Fish Passage Standards.

III.C.4 Upstream Fish Passage: Lighthouse Hill Development Zone 4

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
C	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none">• Explain why the facility does not impose a barrier to upstream fish passage in the designated zone. Typically, impoundment zones will qualify for this standard since once above a dam and in an impoundment, there is no facility barrier to further upstream movement.• Document available fish distribution data and the lack of migratory fish species in the vicinity.• If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

There are no upstream fish passage barriers or migratory fish management issues in Zone 4 because it is an impoundment. There are no mandatory prescriptions (Section 18 or similar) for the passage of riverine fish at the development. In the Settlement Offer, the Interior did request reservation of its authority to prescribe upstream and downstream fish passage devices in the future, which is provided in Article 406 of the 1996 FERC license.

According to the Environmental Assessment, surveys performed prior to the issuance of the 1996 FERC license identified brown trout, rainbow trout, yellow perch, pumpkinseed, and brown bullhead in the Lighthouse Hill impoundment.

Environmental Assessment (included in the Order Issuing Original License):

<https://elibrary.ferc.gov/eLibrary/idmws/common/opennat.asp?fileID=8402048>

III.C.5 Upstream Fish Passage: Lighthouse Hill Development Zone 5

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
C	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none">• Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective).• Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement.• Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.

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		<ul style="list-style-type: none">• Provide evidence that required passage facilities are being operated and maintained as mandated (e.g. meets season, coordination with agencies)
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There are no mandatory prescriptions (Section 18 or similar) for the passage of riverine fish at the development. In the Settlement Offer, the Interior did request reservation of its authority to prescribe upstream and downstream fish passage devices in the future, which is provided in Article 406 of the 1996 FERC license.

As required by the Settlement Offer and License Article 401, the Salmon River Project operates according to Rule Curve 16 for protection and enhancement of aquatic resources, water quality, fisheries, aesthetic resources, and recreation resources in the Salmon River basin.

The Salmon River Water Budget Model simulated daily inflow, reservoir elevations, generation, storage, and outflow for the two developments. The model used 17 years of generation and flow records collected prior to 1986 to simulate project operations for three operating scenarios: run-of-river, historical, and Rule Curve 16.

Between 1985 and 1987, an IFIM study was conducted along a 17-mile segment of the Salmon River below Lighthouse Hill to identify optimum habitat for fisheries in the Salmon River, and evaluate the effect of alternative operating regimes (run-of-river, historical, and Rule Curve 16) on the fisheries and other aquatic resource uses. The study included 24 transects representing 80% of the study area. Target fish species were selected to represent the species and life stages endemic to the aquatic community. Four life-history stages (fry, juvenile, spawning, and adult) were modeled for longnose dace, white sucker, common shiner, and Atlantic salmon. Flows between 25 cfs and 2,900 cfs were modeled and a habitat-duration analysis was conducted to determine average annual habitat for each target species and life stage.

According to the Environmental Assessment, the IFIM study showed (a) the optimum flow for all species/life stages in the Salmon River for the entire year is between 400 and 500 cfs, (b) a minimum flow of 350 cfs is needed to permit salmonid movement, (c) bank-to-bank wetted surface area occurs at 350 to 400 cfs (d) water temperatures would be best moderated at 350 to 400 cfs or greater, and (e) professional drift boat fishermen would need a minimum of 350 cfs, preferably greater, in the fall to operate their drift boats. However, flow modeling studies showed that available storage could not consistently provide uninterrupted minimum flows in the range of 400 to 500 cfs, the optimum flow for all fish species and life stages. Since uninterrupted minimum flow was the primary resource agency objective for enhancing aquatic resources in the Salmon River, seasonal flows of 285 cfs (January 1 through April 30), 185 cfs (May 1 through August 31), and 335 cfs (September 1 through December 31) were established. Additionally, ramping rates were established to protect aquatic habitat and fisheries from extreme and sudden changes in flow, as required for whitewater boating releases.

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Environmental Assessment (included in the Order Issuing Original License):

<https://elibrary.ferc.gov/eLibrary/idmws/common/opennat.asp?fileID=8402048>

The Salmon River Project is in compliance with resource agency conditions issued regarding flow conditions. The FERC license, Settlement Offer, and Section 401 WQC include the requirements for flow releases and water level control recommended by the NYSDEC and USFWS.

Erie remains in compliance with the established flow conditions and impoundment levels and maintains records of these conditions at the Project. In the event of a deviation from established minimum flows or impoundment levels, Erie files documentation with FERC detailing the reasons for the deviation.

According to Environmental Assessment, prior to 1940, thirty-one species of fish were identified downstream of the hydropower projects. Smallmouth bass reproduction and fishing were very good below Pulaski. Limited brown trout and rainbow trout fishing occurred above Pulaski during spring and summers when water temperatures remained cool. In 1956, Atlantic salmon stocked 2 miles below Lighthouse Hill were found to have grown well. In 1968, the NYSDEC initiated a Pacific salmon and steelhead stocking program in the Salmon River and tributaries below Lighthouse Hill. In 1977, however, salmonid stocking was significantly reduced due to health concerns associated with high levels of PCBs discovered in Lake Ontario fish. The New York State Department of Health initiated an education program, health advisories, and fish consumption restrictions in 1976-77. Stocking resumed to previous levels in 1979. Throughout the 1980's and 1990's tributaries downstream of the hydroelectric projects provided excellent habitat for brook trout, steelhead, coho salmon, and chinook salmon. These tributaries had a diversity of other fish, at least 18 species include suckers, shiners, darters, dace, American eels, and lamprey. A 1992 angler survey showed a diminished fishery in the Salmon River (40% fewer anglers and 20% fewer chinook salmon in 1992 than 1989). The diminished fishery is partially due to changes in the states' snagging regulations incurred in 1992, and partially due to reported declines of salmon populations in Lake Ontario. Based on discussions with the NYSDEC, migratory species identified in the Salmon River downstream Lighthouse Hill include Atlantic salmon, steelhead, coho salmon, and chinook salmon. While the Lighthouse Hill dam may hinder upstream passage for migratory fish, the Salmon River Falls in the Bennetts Bridge bypass reach acts as a natural barrier that prevents additional upstream passage beyond Lighthouse Hill.

III.C.6 Upstream Fish Passage: Lighthouse Hill Development Zone 6

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
C	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none">Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective).

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		<ul style="list-style-type: none">• Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement.• Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.• Provide evidence that required passage facilities are being operated and maintained as mandated (e.g. meets season, coordination with agencies)
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See response to Zone 5.

Information Required to Support Downstream Fish Passage Standards.

III.D.4 Downstream Fish Passage: Lighthouse Hill Development Zone 4

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
D	2	<p><u>Agency Recommendation:</u></p> <ul style="list-style-type: none">• Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective).• Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is part of a Settlement Agreement or not.• Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.

The Interior requested reservation of its authority to prescribe upstream and downstream fish passage devices in the future, which was granted in Article 406 of the license. Article 404 of the license requires Erie to install 1.0-inch trashracks at Lighthouse Hill within 4 years from the issuance of the license. FERC issued the Order Modifying and Approving Trashrack Installation Plan on November 16, 1999 based on the plan filed on October 22, 1999. On July 2, 2001, Erie filed a request to amend the Order Modifying and Approving Trashrack Installation Plan to reflect installation of new 1-inch trashracks, which FERC approved on September 28, 2001.

Order Modifying and Approving Trashrack Installation Plan:
<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=3176451>

Order Amending Trashrack Installation Plan:
<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=3234239>

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According to the Environmental Assessment, the velocity at the intake with 1-inch trashracks would not exceed 2.0 feet per second. The recommendation for 1-inch trashracks was based on entrainment and mortality studies performed at other hydroelectric facilities.

According to the Environmental Assessment, the fish population in the Lighthouse Hill Reservoir includes brown trout, rainbow trout, yellow perch, pumpkinseed, and brown bullhead.

Environmental Assessment (included in the Order Issuing Original License):

<https://elibrary.ferc.gov/eLibrary/idmws/common/opennat.asp?fileID=8402048>

III.D.5 Downstream Fish Passage: Lighthouse Hill Development Zone 5

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
D	2	<p><u>Agency Recommendation:</u></p> <ul style="list-style-type: none">• Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective).• Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is part of a Settlement Agreement or not.• Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.

There are no mandatory prescriptions (Section 18 or similar) for the passage of riverine fish at the development. In the Settlement Offer, the Interior did request reservation of its authority to prescribe upstream and downstream fish passage devices in the future, which is provided in Article 406 of the 1996 FERC license.

As required by the Settlement Offer and License Article 401, the Salmon River Project operates according to Rule Curve 16 for protection and enhancement of aquatic resources, water quality, fisheries, aesthetic resources, and recreation resources in the Salmon River basin.

The Salmon River Water Budget Model simulated daily inflow, reservoir elevations, generation, storage, and outflow for the two developments. The model used 17 years of generation and flow records collected prior to 1986 to simulate project operations for three operating scenarios: run-of-river, historical, and Rule Curve 16.

Between 1985 and 1987, an IFIM study was conducted along a 17-mile segment of the Salmon River below Lighthouse Hill to identify optimum habitat for fisheries in the Salmon River and evaluate the effect of alternative operating regimes (run-of-river, historical, and Rule Curve 16) on the fisheries and other aquatic resource uses. The study included 24 transects representing 80% of the study area. Target fish species were selected to represent the species and life stages endemic

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to the aquatic community. Four life-history stages (fry, juvenile, spawning, and adult) were modeled for longnose dace, white sucker, common shiner, and Atlantic salmon. Flows between 25 cfs and 2,900 cfs were modeled and a habitat-duration analysis was conducted to determine average annual habitat for each target species and life stage.

According to the Environmental Assessment, the IFIM study showed: (a) the optimum flow for all species/life stages in the Salmon River for the entire year is between 400 and 500 cfs; (b) a minimum flow of 350 cfs is needed to permit salmonid movement; (c) bank-to-bank wetted surface area occurs at 350 to 400 cfs; (d) water temperatures would be best moderated at 350 to 400 cfs or greater; and (e) professional drift boat fishermen would need a minimum of 350 cfs, preferably greater, in the fall to operate their drift boats. However, flow modeling studies showed that available storage could not consistently provide uninterrupted minimum flows in the range of 400 to 500 cfs, the optimum flow for all fish species and life stages. Since uninterrupted minimum flow was the primary resource agency objective for enhancing aquatic resources in the Salmon River, seasonal flows of 285 cfs (January 1 through April 30), 185 cfs (May 1 through August 31), and 335 cfs (September 1 through December 31) were established. Additionally, ramping rates were established to protect aquatic habitat and fisheries from extreme and sudden changes in flow, as required for whitewater boating releases.

Environmental Assessment (included in the Order Issuing Original License):

<https://elibrary.ferc.gov/eLibrary/idmws/common/opennat.asp?fileID=8402048>

The Salmon River Project is in compliance with resource agency conditions issued regarding flow conditions. The FERC license, Settlement Offer, and Section 401 Water Quality Certificate (WQC) include the requirements for flow releases and water level control recommended by the NYSDEC and USFWS.

Erie remains in compliance with the established flow conditions and impoundment levels and maintains records of these conditions at the Project. In the event of a deviation from established minimum flows or impoundment levels, Erie files documentation with FERC detailing the reasons for the deviation.

According to Environmental Assessment, Atlantic salmon stocked 2 miles below Lighthouse Hill were found to have grown well. In 1968, the NYSDEC initiated a Pacific salmon and steelhead stocking program in the Salmon River and tributaries below Lighthouse Hill. In 1977, however, salmonid stocking was significantly reduced due to health concerns associated with high levels of PCBs discovered in Lake Ontario fish. The New York State Department of Health initiated an education program, health advisories, and fish consumption restrictions in 1976-77. Stocking resumed to previous levels in 1979. A 1992 angler survey showed a diminished fishery in the Salmon River (40% fewer anglers and 20% fewer chinook salmon in 1992 than 1989). The diminished fishery is partially due to changes in the states' snagging regulations incurred in 1992, and partially due to reported declines of salmon populations in Lake Ontario.

III.D.6 Downstream Fish Passage: Lighthouse Hill Development Zone 6

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
D	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none">• Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective).• Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is part of a Settlement Agreement or not.• Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.

See response to Zone 5.

Information Required to Support Shoreline and Watershed Protection Standards.

III.E.1 Shoreline and Watershed Protection: Lighthouse Hill Development Zone 4

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
E	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none">• If there are no lands with significant ecological value associated with the facility, document and justify this (e.g., describe the land use and land cover within the FERC project or facility boundary).• Document that there have been no Shoreline Management Plans or similar protection requirements for the facility.
E	PLUS	<u>Bonus Activities:</u> <ul style="list-style-type: none">• Provide documentation that the facility has a formal conservation plan protecting a buffer zone of 50% or more of the undeveloped shoreline that the facility owns around its reservoirs and river corridors.• In lieu of a formal conservation plan, provide documentation that the facility has established a watershed enhancement fund for ecological land management that will achieve the equivalent land protection value of an ecologically effective buffer zone of 50% or more around undeveloped shoreline.

The Lighthouse Hill Development is located in the Town of Orwell. The Lighthouse Hill Reservoir shorelines are almost completely undeveloped. The reservoir may be viewed from various points along County Route 22, which passes along its south shore. Views of the reservoir and surrounding hills and woodlands also exist along Hogback Road to the north. According to the Environmental Assessment, the reservoir fluctuations of six feet only affect 12 percent of the reservoir water surface area. The shoreline ranges from shallow to steep banks. According to the Environmental Assessment, fine-sized (clay, silt, and fine sand-size) components of the area's stony glacial till

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have been washed away by wave action leaving behind coarser sands, gravel, and cobbles. No unstable banks or shoreline erosion has been reported.

There is no Shoreline Management Plan for this development. However, Article 407 of the License required the licensee to file a plan for enhancing wetland OR-18, associated with Lighthouse Hill reservoir. Wetland OR-18 is located north of and adjacent to the Lighthouse Hill Reservoir and consist of three separate, but connected pools. Two of the pools are hydraulically connected to the Lighthouse Hill Reservoir and are controlled by backwater effects through a culvert on Hogs Back Road. The plan for enhancing wetland OR-18 is intended to provide a water control structure to allow free passage of water and organisms when Lighthouse Hill Reservoir is at or near normal pool. The license filed a Wetland Enhancement Plan on January 29, 1997, which FERC approved on April 15, 1997.

Plan for Enhancing Wetland OR-18, associated with Lighthouse Hill Reservoir:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=8409964>

Order Approving Wetland Enhancement Plan:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=3077124>

The NYSDEC estimates that more than 50% of the project impoundments have dedicated buffer zones for conservation purposes; however, the project boundary does not extend 200-feet from the high-water mark. Much of the upland property is owned by New York State and managed as state forest land, based on a transfer of ownership from the licensee as part of the Settlement Offer.

Additionally, exempt from any FERC license requirement, Erie voluntarily developed land use management policies for Project lands that manage previously developed shoreline and protect undeveloped properties. Erie also established and finances the Salmon River Enhancement Fund which supports NYSDEC proposed enhancement for the Salmon River basin.

III.E.2 Shoreline and Watershed Protection: Lighthouse Hill Development Zone 5

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
E	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none">• If there are no lands with significant ecological value associated with the facility, document and justify this (e.g., describe the land use and land cover within the FERC project or facility boundary).• Document that there have been no Shoreline Management Plans or similar protection requirements for the facility.
E	PLUS	<u>Bonus Activities:</u> <ul style="list-style-type: none">• Provide documentation that the facility has a formal conservation plan protecting a buffer zone of 50% or more of the undeveloped shoreline that the facility owns around its reservoirs and river corridors.• In lieu of a formal conservation plan, provide documentation that the facility has established a watershed enhancement fund for

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<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
		ecological land management that will achieve the equivalent land protection value of an ecologically effective buffer zone of 50% or more around undeveloped shoreline.

See response above for Zone 4.

III.E.3 Shoreline and Watershed Protection: Lighthouse Hill Development Zone 6

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
E	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none">• If there are no lands with significant ecological value associated with the facility, document and justify this (e.g., describe the land use and land cover within the FERC project or facility boundary).• Document that there have been no Shoreline Management Plans or similar protection requirements for the facility.
E	PLUS	<u>Bonus Activities:</u> <ul style="list-style-type: none">• Provide documentation that the facility has a formal conservation plan protecting a buffer zone of 50% or more of the undeveloped shoreline that the facility owns around its reservoirs and river corridors.• In lieu of a formal conservation plan, provide documentation that the facility has established a watershed enhancement fund for ecological land management that will achieve the equivalent land protection value of an ecologically effective buffer zone of 50% or more around undeveloped shoreline.

See response above for Zone 4.

Information Required to Support Threatened and Endangered Species Standards.

III.F.1 Threatened and Endangered Species: Lighthouse Hill Development Zone 4

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
F	3	<u>Recovery Planning and Action:</u> <ul style="list-style-type: none">• If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents.• Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

Based on information received from the USFWS's New York Field Office on July 2, 2021, regarding a request for information on RTE species it appears that the Northern Long-eared Bat

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(*Myotis septentrionalis*) may potentially occur within the Project area. There are no critical habitats located within the Lighthouse Hill Development area.

During preparation of this application, Erie also consulted with NYSDEC's Natural Heritage Program for an updated list of threatened and endangered species that may occur in the vicinity of the Salmon River Project. A response from the NYSDEC was not provided at the time of the application but will be provided to LIHI once received.

The USFWS has not adopted a formal recovery plan for the northern long-eared bat. On January 14, 2016, the USFWS published the final 4(d) rule identifying prohibitions for the protection of northern long-eared bats. Operations of the Salmon River Project, especially with regard to tree clearing from June 1 through July 31, adhere to the prohibitions outlined in the final 4(d) rule.

During preparation of this application, Erie also consulted with NYSDEC's Natural Heritage Program for an updated list of threatened and endangered species that may occur in the vicinity of the Salmon River Project. By letter dated August 12, 2021, the NYSDEC indicated that Bald Eagle (*Haliaeetus leucocephalus*) and Pied-billed Grebe (*Podilymbus podiceps*), which are state-listed as threatened, have been documented in the vicinity of the Salmon River Project. The Bald Eagle and Pied-billed Grebe are protected under Environmental Conservation Law Section 11-0535, New York Code of Rules and Regulations (6 NYCRR Part 182), and the Migratory Bird Treaty Act. Bald Eagles have been documented in multiple locations within the project boundary and Pied-billed Grebe have been documented with 200 years of the Lighthouse Hill reservoir. There are no critical habitats documented within the Salmon River Project area.

The NYSDEC has developed a Conservation Plan for Bald Eagles in New York State:

NYSDEC. 2016. Conservation Plan for Bald Eagles in New York State.

Conservation strategies include limiting construction, foresting, and recreation activities in the vicinity of nest trees and deep winter roost sites.

The NYSDEC has not adopted a formal recovery plan for the Pied-billed Grebe. However, Pied-billed Grebe nesting habitat, freshwater wetlands, are protected under the Freshwater Wetlands Act which wetlands greater than 12.4 acres in size.

There are no specific additional requirements for threatened or endangered species protection in the FERC license or WQC for the Salmon River Project.

The record of RTE consultation is included in Appendix E.

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III.F.2 Threatened and Endangered Species: Lighthouse Hill Development Zone 5

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
F	3	<u>Recovery Planning and Action:</u> <ul style="list-style-type: none">• If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents.• Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

See response above for Zone 4.

III.F.3 Threatened and Endangered Species: Lighthouse Hill Development Zone 6

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
F	3	<u>Recovery Planning and Action:</u> <ul style="list-style-type: none">• If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents.• Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

See response above for Zone 1.

Information Required to Support Cultural and Historic Resources Standards.

III.G.1 Cultural and Historic Resources: Lighthouse Hill Development Zone 4

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
G	2	<u>Approved Plan:</u> <ul style="list-style-type: none">• Provide documentation of all approved state, federal, and recognized tribal plans for the protection, enhancement, and mitigation of impacts to cultural and historic resources affected by the facility.• Document that the facility is in compliance with all such plans.

Article 411 of the license requires implementation of the "Programmatic Agreement Among the Federal Energy Regulatory Commission, the Advisory Council on Historic Preservation, and the New York State Historic Preservation Officer, for Managing Historic Properties That May Be Affected By A License Issuing to Niagara Mohawk Power Corporation For the Continued Operation of the Salmon River Hydroelectric Power Project in New York," executed on January 13, 1995.

According to the 1996 Environmental Assessment, cultural resource studies in the APE did not identify any features at the Lighthouse Hill Development that were eligible for listing on the National Register of Historic Places.

Environmental Assessment (included in the February 21, 1996 Order Issuing License):

<https://elibrary.ferc.gov/eLibrary/idmws/common/opennat.asp?fileID=8402048>

The licensee filed a CRMP on February 25, 1997, which was subsequently approved by FERC on June 1, 1998. The licensee implements its Programmatic Agreement and CRMP to mitigate the effects of operations within the project's APE, pursuant to license Article 411.

The licensee files an annual monitoring report on activities undertaken that may be subject to the CRMP. The annual monitoring report for 2020 was filed on February 23, 2021. The licensee appears to be in compliance with its requirements with regard to cultural resources.

Cultural Resources Management Plan:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=8216663>

Order Approving CRMP:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=49654>

February 23, 2021 Annual CRMP Report:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=15721563>

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III.G.2 Cultural and Historic Resources: Bennetts Bridge Development Zone 2

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
G	2	<u>Approved Plan:</u> <ul style="list-style-type: none">• Provide documentation of all approved state, federal, and recognized tribal plans for the protection, enhancement, and mitigation of impacts to cultural and historic resources affected by the facility.• Document that the facility is in compliance with all such plans.

See above response for Zone 1.

III.G.3 Cultural and Historic Resources: Bennetts Bridge Development Zone 3

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
G	2	<u>Approved Plan:</u> <ul style="list-style-type: none">• Provide documentation of all approved state, federal, and recognized tribal plans for the protection, enhancement, and mitigation of impacts to cultural and historic resources affected by the facility.• Document that the facility is in compliance with all such plans.

See above response for Zone 1.

Information Required to Support Recreational Resources Standards.

III.H.1 Recreational Resources: Lighthouse Hill Development Zone 4

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
H	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none">• Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations.• Document that the facility is in compliance with all such recommendations and plans.

Article 412 requires the licensee to file a recreation plan to provide enhanced recreation at the Hogback Road campground, Lighthouse Hill Reservoir, and Salmon River Reservoir. Consistent with Article 412, the recreation plan shall include: improving fishing and boating areas; providing canoe and car-top boat access; installing parking, picnic tables and signage, and establishing natural buffer zones within six months from date of issuance of the license.

On May 1, 1997 FERC issued an Order Approving the Recreation Plan, which was submitted to FERC on December 12, 1996. Recreation enhancements included: (1) constructing a parking area, picnic area, and canoe and car-top boating access at the Hogback Road area; (2) regrading the boat launches and parking areas at the Falls Road Recreation facility at the west end of the Salmon

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River Reservoir; (3) expanding the boat launch and parking area at the Redfield site on the Salmon River Reservoir; and (4) selectively clearing trees at some of the recreation areas to improve scenic views, and used the existing vegetation to act as a natural buffer to screen recreation sites from waterway users.

On October 10, 2020, Erie filed a request to amend the Recreation Plan to incorporate changes based on observed recreational use, which FERC approved on February 10, 2004. The Salmon River Project is in compliance with recreational access, accommodation, and facilities' conditions in the FERC license.

Article 412 Recreation Plan:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=8231300>

Order Approving the Recreation Plan:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=3079127>

Order Amending Recreation Plan:

<https://elibrary.ferc.gov/eLibrary/filedownload?fileid=10060166>

Erie permits free public access to the shoreline of the Lighthouse Hill Development across Erie's lands where Project facilities, hazardous areas and existing leases, easements, and private ownership do not preclude access.

Additionally, consistent with Article 401 of the license, Erie supports five whitewater releases each year. The whitewater releases are provided as follows: one weekend in June - 400 cfs; two weekends in July - 750 cfs; the first full weekend in August - 750 cfs; and the first weekend in September - 750 cfs. Erie posts the annual release schedule to their Safe Waters website (<https://safewaters.com/facility/42>).

III.H.2 Recreational Resources: Lighthouse Hill Development Zone 5

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
H	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none">• Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations.• Document that the facility is in compliance with all such recommendations and plans.

See response above for Zone 4.

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III.H.3 Recreational Resources: Lighthouse Hill Development Zone 6

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
H	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none">• Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations.• Document that the facility is in compliance with all such recommendations and plans.

See response above for Zone 4.

PART IV. SWORN STATEMENT AND WAIVER

As an Authorized Representative of Erie Boulevard Hydropower, L.P., the Undersigned attests that the material presented in the application is true and complete.

The Undersigned acknowledges that the primary goal of the Low Impact Hydropower Institute's certification program is public benefit, and that the LIHI Governing Board and its agents are not responsible for financial or other private consequences of its certification decisions.

The Undersigned further acknowledges that if LIHI Certification of the applying facility is granted, the LIHI Certification Mark License Agreement must be executed prior to marketing the electricity product as LIHI Certified®.

The Undersigned further agrees to hold the Low Impact Hydropower Institute, the Governing Board and its agents harmless for any decision rendered on this or other applications, from any consequences of disclosing or publishing any submitted certification application materials to the public, or on any other action pursuant to the Low Impact Hydropower Institute's certification program.

Company Name: Erie Boulevard Hydropower, L.P.

Authorized Representative

Name: Daniel J. Maguire

Title: Compliance Manager

Authorized Signature: _____

Date: _____

PART V. CONTACTS

Table V-1. Complete contact information for Erie Boulevard Hydropower, L.P.

Project Owner:	
Name and Title	
Company	Erie Boulevard Hydropower, L.P., a subsidiary of Brookfield Renewable
Phone	
Email Address	
Mailing Address	184 Elm Street, Potsdam, NY 13676
Project Operator (if different from Owner):	
Name and Title	
Company	
Phone	
Email Address	
Mailing Address	
Consulting Firm / Agent for LIHI Program (if different from above):	
Name and Title	
Company	
Phone	
Email Address	
Mailing Address	
Compliance Contact (responsible for LIHI Program requirements):	
Name and Title	Daniel J. Maguire, P.E., Compliance Manager
Company	Brookfield Renewable
Phone	315-267-1036
Email Address	Danny.Maguire@brookfieldrenewable.com
Mailing Address	184 Elm Street, Potsdam, NY 13676
Party responsible for accounts payable:	
Name and Title	
Company	Brookfield Renewable
Phone	
Email Address	AP@brookfieldrenewable.com
Mailing Address	41 Victoria, Gatineau, QC J8X 2A1
Name and Title	Sandeep Mascarenhas, Senior Analyst, Capacity & Ancillary Services Management
Company	Brookfield Renewable
Phone	819-561-2722 ext. 6743
Email Address	Sandeep.Mascarenhas@brookfieldrenewable.com
Mailing Address	41 Victoria, Gatineau, QC J8X 2A1

Salmon River Project Recertification Application

Table V-2. Complete contact information for current and relevant state, federal, provincial, and tribal resource agency contacts.

Agency Contact (Check area of responsibility: Flows <u> X </u> , Water Quality <u> X </u> , Fish/Wildlife Resources <u> X </u> , Watersheds <u> </u> , T/E Spp. <u> </u> , Cultural/Historic Resources <u> </u> , Recreation <u> X </u>):	
Agency Name	New York State Department of Environmental Conservation
Name and Title	Kristen Cady-Poulin, Environmental Analyst
Phone	518-186-9955
Email address	Kristen.Cady-Poulin@dec.ny.gov
Mailing Address	625 Broadway, Albany, NY 12238

Agency Contact (Check area of responsibility: Flows <u> </u> , Water Quality <u> </u> , Fish/Wildlife Resources <u> </u> , Watersheds <u> </u> , T/E Spp. <u> X </u> , Cultural/Historic Resources <u> </u> , Recreation <u> </u>):	
Agency Name	New York State Department of Environmental Conservation
Name and Title	Nicholas Conrad, Information Resources Coordinator
Phone	518-402-8935
Email address	Nick.Conrad@dec.ny.gov
Mailing Address	625 Broadway, Albany, NY 12233-4757

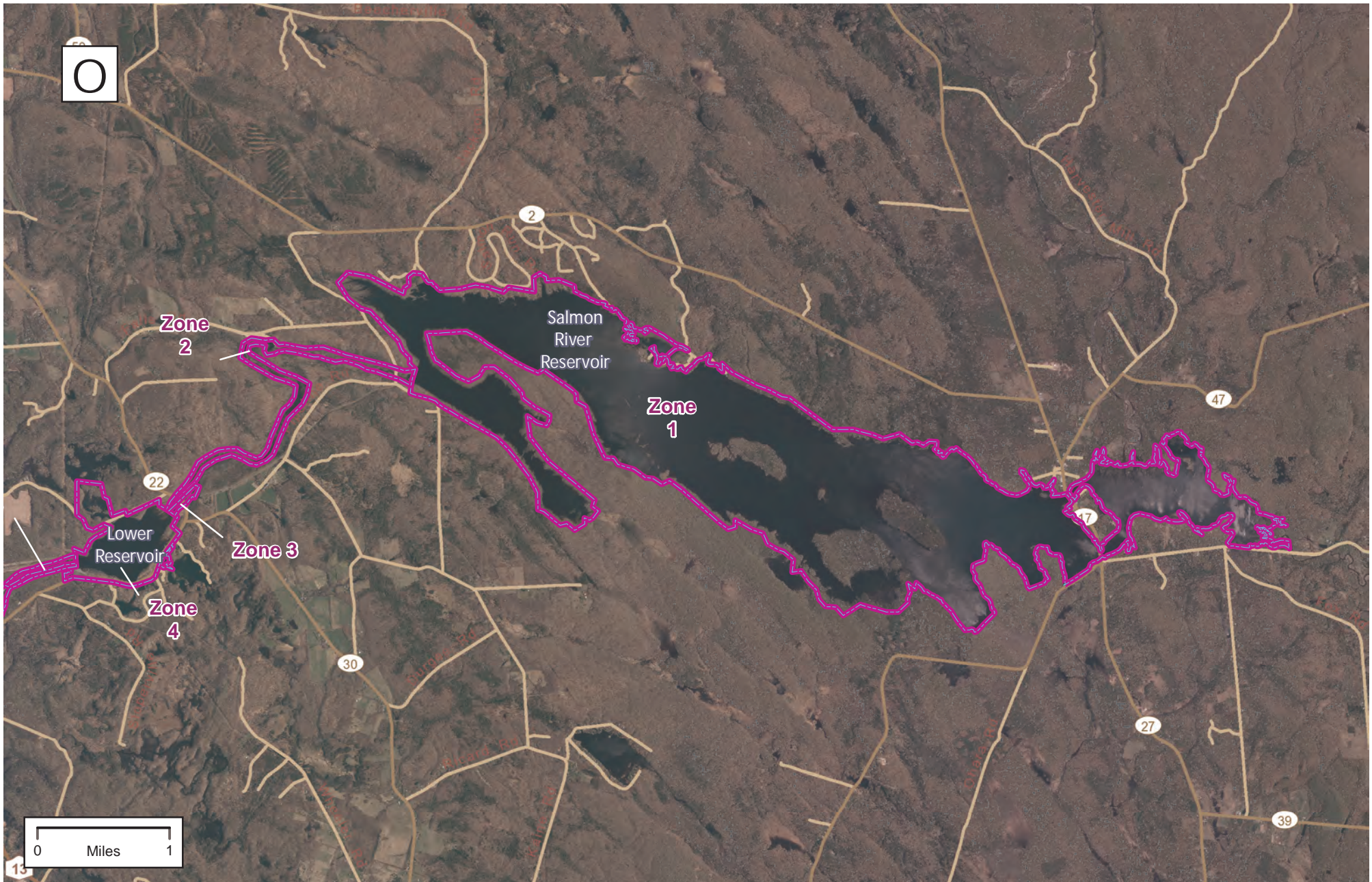
Agency Contact (Check area of responsibility: Flows <u> </u> , Water Quality <u> </u> , Fish/Wildlife Resources <u> </u> , Watersheds <u> </u> , T/E Spp. <u> X </u> , Cultural/Historic Resources <u> </u> , Recreation <u> </u>):	
Agency Name	U.S. Fish and Wildlife Service
Name and Title	Robyn Niver, Endangered Species Biologist
Phone	607-753-9334
Email address	Robyn.Niver@fws.gov
Mailing Address	3817 Luker Road, Cortland, NY 13045

Agency Contact (Check area of responsibility: Flows <u> X </u> , Water Quality <u> X </u> , Fish/Wildlife Resources <u> X </u> , Watersheds <u> </u> , T/E Spp. <u> X </u> , Cultural/Historic Resources <u> </u> , Recreation <u> </u>):	
Agency Name	U.S. Fish and Wildlife Service
Name and Title	John Wiley
Phone	607-753-9334
Email address	john_wiley@fws.gov
Mailing Address	3817 Luker Road, Cortland, NY 13045

Agency Contact (Check area of responsibility: Flows <u> </u> , Water Quality <u> </u> , Fish/Wildlife Resources <u> </u> , Watersheds <u> </u> , T/E Spp. <u> </u> , Cultural/Historic Resources <u> X </u> , Recreation <u> </u>):	
Agency Name	New York State Division for Historic Preservation
Name and Title	Michael Lynch, Division Director
Phone	518-237-8643
Email address	Michael.Lynch@parks.ny.gov
Mailing Address	Peebles Island State Park, P.O. Box 189, Waterford, NY 12188-0189

APPENDIX A

SALMON RIVER PROJECT ZONES OF EFFECT





APPENDIX B

PHOTOS OF KEY PROJECT FEATURES

APPENDIX B – PHOTOGRAPHS OF KEY PROJECT FEATURES



Bennetts Bridge Spillway



Bennetts Bridge Spillway



Bennetts Bridge Powerhouse and Surge Tank



Salmon River Falls, Bennetts Bridge Bypassed Reach



Lighthouse Hill Intake



Lighthouse Hill Trashracks

APPENDIX C
PROJECT MAPS AND AERIALS

Jefferson

Ellisburg

Lorraine

Worth

Montague

Martinsburg

Boylston

West Turin

Sandy Creek

Jefferson
Oswego

Bennetts Bridge Dam

Lewis

Osceola

Lower
Reservoir

Salmon
River
Reservoir

Lighthouse Hill Dam

Oswego

Albion

Lewis

Maple
View

Williamstown

Florence

Mexico

Williamstown

Parish

Oneida

Amboy

Annsville

Palermo

Hastings

Westdale

Camden

Hastings

West Monroe

Constantia




Vienna

Mallory

Salmon River Hydroelectric Project



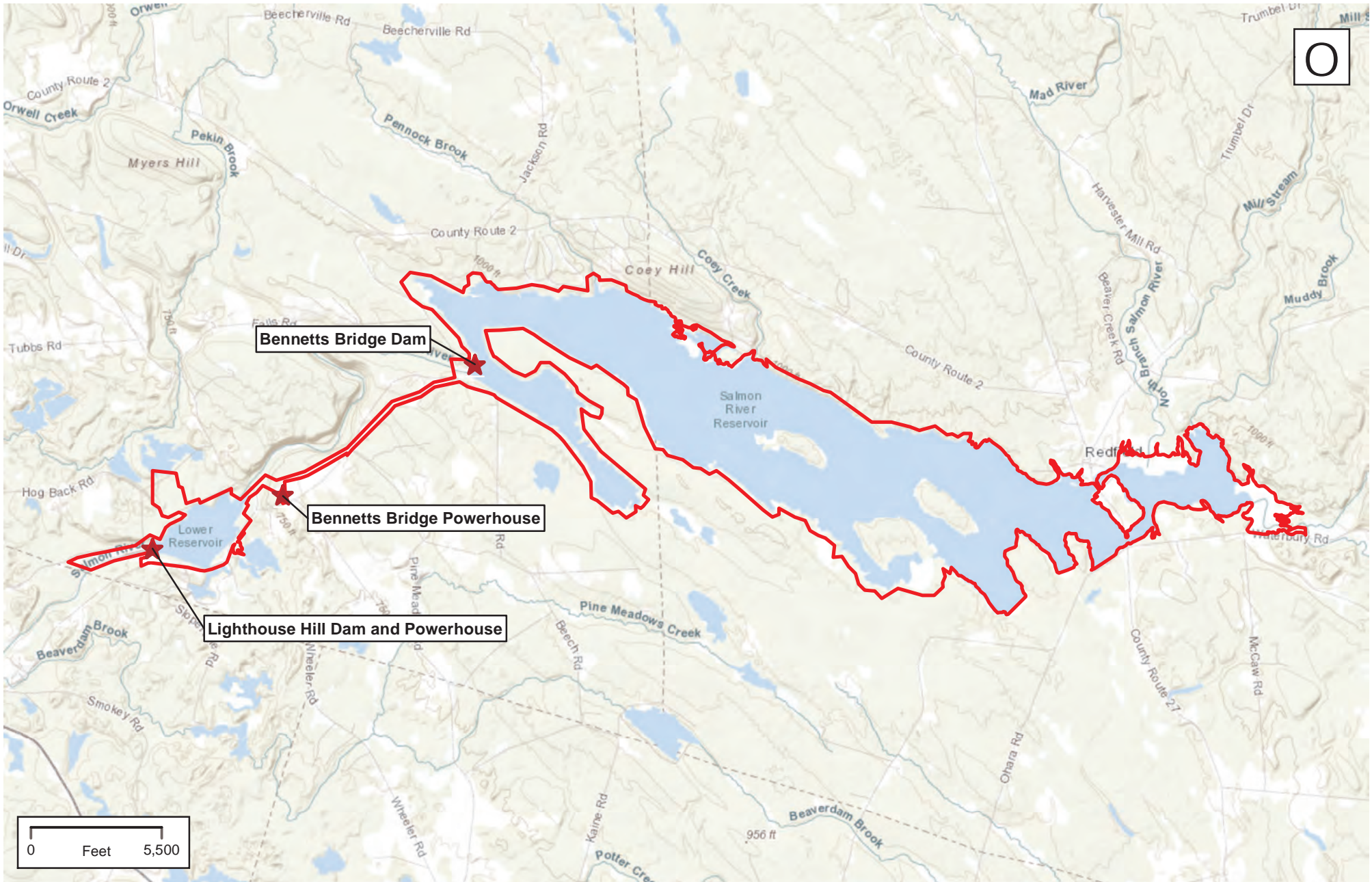
Legend

-  Project Boundary
-  County Boundary
-  Town Boundary



0 150 300
MILES

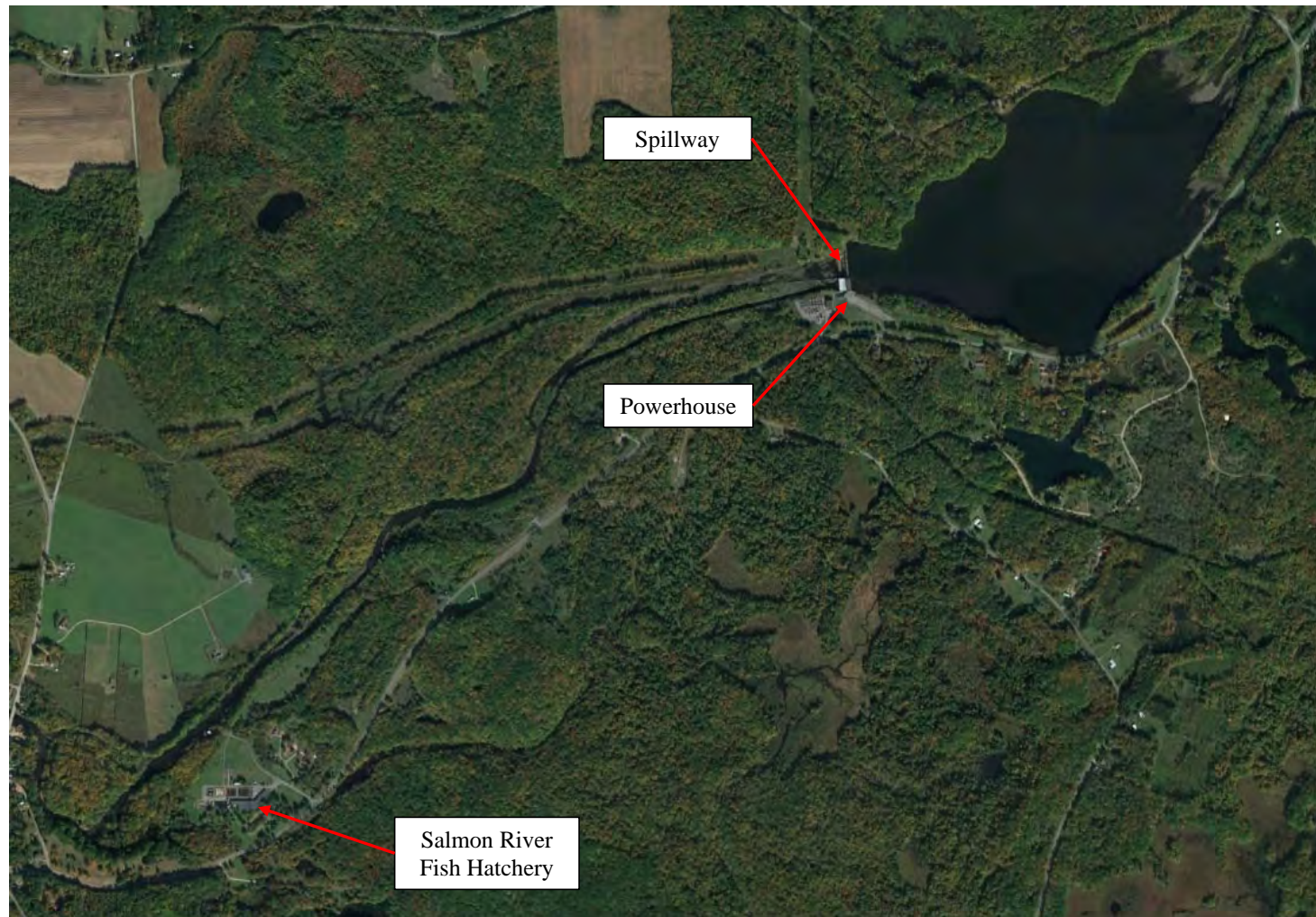
DATA SOURCES: Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



APPENDIX C – MAPS AND AERIAL PHOTOS OF FACILITY AREA AND RIVER BASIN
BENNETTS BRIDGE DEVELOPMENT



APPENDIX C – MAPS AND AERIAL PHOTOS OF FACILITY AREA AND RIVER BASIN
LIGHTHOUSE HILL DEVELOPMENT



APPENDIX D

401 WATER QUALITY CERTIFICATION CONSULTATION

July 8, 2021

Mr. Scott Prindle
New York State Department of Environmental Conservation
615 Erie Boulevard. West
Syracuse, NY 13204

Subject: **Salmon River Hydroelectric Project (FERC No.11408)**
Low Impact Hydropower Institute Re-certification
Water Quality Certificate Verification

Dear Mr. Prindle:

Erie Boulevard Hydropower, L.P. (Erie) is applying for Low Impact Hydropower Institute (LIHI) re-certification for the Salmon River Project (FERC No. 11408). This Project is comprised of the Bennetts Bridge Development (RM 18.0) and the Lighthouse Hill Development (RM 17.0) located on the Salmon River in the Town of Orwell, Oswego County.

Erie is requesting confirmation from the New York State Department of Environmental Conservation stating that the 401 Water Quality Certificate issued for the operation of Salmon River Project on April 28, 1994 is still valid. Please provide this confirmation by reply to this letter via letter or email.

Erie would appreciate a response within 30 days of the date of this letter. Thank you in advance for your assistance, and if you have any questions, please do not hesitate to contact me at Danny.Maguire@brookfieldrenewable.com or (315) 267-1036 with any questions or concerns.

Respectfully submitted,



Daniel Maguire, P.E.
Compliance Manager
New York and Minnesota

Brookfield Renewable

399 Big Bay Road
Queensbury, NY 12804

www.brookfieldrenewable.com

Tel: 518.743.2091
Fax: 518.745.4292

Caley, Katherine

From: Cady-Poulin, Kristen K (DEC) <kristen.cady-poulin@dec.ny.gov>
Sent: Monday, July 12, 2021 2:46 PM
To: Caley, Katherine
Cc: Balduzzi, Kevin M (DEC); Prindle, Scott E (DEC)
Subject: FW: Salmon River Hydroelectric Project (FERC No 11408) - Water Quality Certification Verification
Attachments: 20210708_Salmon River LIHI - 401 WQC Consultation DEC.pdf

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hello,

NYSDEC received the below and attached request regarding the status of the 401 Water Quality Certificate (401 WQC) for the Salmon River Hydroelectric project (FERC #11408) which includes the Bennetts Bridge and Lighthouse Hill Developments, on the Salmon River in Town of Orwell, Oswego County, NY.

NYSDEC confirms that the 401 WQC issued on April 28, 1994 for the operation of the Salmon River project is still valid.

Please feel free to contact me if you have any further questions.

Sincerely,

Kristen Cady-Poulin

Environmental Analyst, Division of Environmental Permits
New York State Department of Environmental Conservation
625 Broadway, Albany, NY 12238
P: (518) 486-9955 | Kristen.Cady-Poulin@dec.ny.gov

www.dec.ny.gov |



From: Caley, Katherine <Katherine.Caley@hdrinc.com>

Sent: Thursday, July 08, 2021 3:47 PM

To: dec.sm.DEP.R7 <DEP.R7@dec.ny.gov>

Cc: Maguire, Danny <Danny.Maguire@brookfieldrenewable.com>; Zehr, Jason <jason.zehr@brookfieldrenewable.com>; Prindle, Scott E (DEC) <scott.prindle@dec.ny.gov>

Subject: Salmon River Hydroelectric Project (FERC No 11408) - Water Quality Certification Verification

ATTENTION: This email came from an external source. Do not open attachments or click on links from unknown senders or unexpected emails.

Good Afternoon,

Erie Boulevard Hydropower, L.P. is applying for Low Impact Hydropower Institute (LIHI) re-certification for the Salmon River Project (FERC No. 11408). Consistent with LIHI Handbook, the applicant is required to verify that the Water Quality Certificate is still valid if it is more than 10 years old. On behalf of Erie Boulevard, I am submitting the attached request for confirmation from the NYSDEC stating that the 401 Water Quality Certificate issued for the operation of Salmon River Project on April 28, 1994 is still valid.

Please let me know if you have any questions on the attached request. We respectfully request a response within 30 days of this letter to ensure a timely submittal of the re-certification application to LIHI.

Thank you,
Katherine

Katherine Caley, P.E. (NY)
Water Resources Engineer

HDR
1304 Buckley Road, Suite 202
Syracuse, New York 13212
D 315.414.2213 **M** 315.243.9183
Katherine.Caley@hdrinc.com

hdrinc.com/follow-us

APPENDIX E

RARE, THREATENED AND ENDANGERS SPECIES CONSULTATION



United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office

3817 Luker Road

Cortland, NY 13045-9385

Phone: (607) 753-9334 Fax: (607) 753-9699

<http://www.fws.gov/northeast/nyfo/es/section7.htm>



In Reply Refer To:

July 02, 2021

Consultation Code: 05E1NY00-2021-SLI-3277

Event Code: 05E1NY00-2021-E-10100

Project Name: Salmon River LIHI Recertification

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). This list can also be used to determine whether listed species may be present for projects without federal agency involvement. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list.

Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list. If listed, proposed, or candidate species were identified as potentially occurring in the project area, coordination with our office is encouraged. Information on the steps involved with assessing potential impacts from projects can be found at: <http://www.fws.gov/northeast/nyfo/es/section7.htm>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the Services wind

energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the ESA. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New York Ecological Services Field Office

3817 Luker Road

Cortland, NY 13045-9385

(607) 753-9334

Project Summary

Consultation Code: 05E1NY00-2021-SLI-3277

Event Code: 05E1NY00-2021-E-10100

Project Name: Salmon River LIHI Recertification

Project Type: DAM

Project Description: The Salmon River Project (FERC No. 11408) consists of two developments located on the Salmon River in the Towns of Redfield and Orwell, Oswego, New York. The two developments progressing downstream towards Lake Ontario are: Bennett's Bridge dam at river mile 18 and Lighthouse Hill dam located at approximately river mile 13.8 from where the river meets Lake Ontario. The Salmon River Project is applying to the Low Impact Hydropower Institute (LIHI) for a recertification of their project that expires on November 14, 2021, and is looking for information regarding rare, threatened or endangered species that may occur in the project area. LIHI requires documentation of a finding of no negative effects or documentation that the facility is in compliance with relevant conditions in the species recovery plans.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.53349155,-75.85834992878146,14z>



Counties: Oswego County, New York

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Caley, Katherine

From: naturalheritage@nynhp.org
Sent: Friday, July 2, 2021 10:26 AM
To: Caley, Katherine
Subject: Confirmation of your submitted request to New York Natural Heritage

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Submission ID: 5945

Submitted on Friday, July 2, 2021 - 10:26 Submitted values are:

Company, Organization, or Agency: HDR, Inc.

Requestor Name: Katherine Caley

Requestor Address (Street/PO Box): 1304 Buckley Road, Suite 202 Requestor City: Syracuse Requestor State: New York

Requestor Zip Code: 13212 Requestor Telephone #: 315-414-2213 Requestor Email: Katherine.Caley@hdrinc.com

Project Type: hydroelectric facility/project Project Name: Salmon River LIHI Application Project Applicant: Erie Boulevard

Hydropower Project County: Oswego Town (Oswego County):

- Orwell

- Redfield

Project Summary:

Erie is presently working with the Low Impact Hydropower Institute (LIHI) to re-certify the Salmon River Project (FERC No. 11408). In preparing the application for LIHI certification, Erie must update or confirm consultation with resource agencies with respect to the presence of threatened or endangered species within the vicinity of the hydroelectric project. Erie respectfully requests information on the presence of threatened or endangered species within the vicinity of the Salmon River Project.

As a matter of background, the license from the Federal Energy Regulatory Commission (FERC) was issued for the Project on February 21, 1996. Project operations and environmental protection measures at this Project have been largely determined by a comprehensive Offer of Settlement that Erie developed in conjunction with the New York State Department of Environmental Conservation and other entities in 1993. The licensing processes for this Project included consultation with resource agencies regarding threatened and endangered species.

Current Land Use: The sites is currently developed for the primary purpose of hydroelectric energy production on the Salmon River.

Tax parcel number:

Latitude: 43.5444 N

Longitude: 75.919 W

Street Address of Project:

Project Notes:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Fish and Wildlife, New York Natural Heritage Program
625 Broadway, Fifth Floor, Albany, NY 12233-4757
P: (518) 402-8935 | F: (518) 402-8925
www.dec.ny.gov

August 12, 2021

Katherine Caley
HDR, Inc.
1304 Buckley Road, Suite 202
Syracuse, NY 13212

Re: Salmon River LIHI Application
County: Oswego Town/City: Orwell, Redfield

Dear Katherine Caley:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

Enclosed is a report of rare or state-listed animals and plants, and significant natural communities that our database indicates occur in the vicinity of the project site.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our database. We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the NYS DEC Region 7 Office, Division of Environmental Permits, at dep.r7@dec.ny.gov.

Sincerely,



Heidi Krahling
Environmental Review Specialist
New York Natural Heritage Program



**The following state-listed animals have been documented
in the vicinity of the project site.**

The following list includes animals that are listed by NYS as Endangered, Threatened, or Special Concern; and/or that are federally listed.

For information about any permit considerations for your project, please contact the Permits staff at the NYSDEC Region 7 Office at dep.r7@dec.ny.gov, 315-426-7438.

The following species has been documented at multiple locations within the project site boundary.

COMMON NAME	SCIENTIFIC NAME	NY STATE LISTING	FEDERAL LISTING
Birds			
Bald Eagle <i>Breeding</i>	<i>Haliaeetus leucocephalus</i>	Threatened	5979

The following species has been documented within 200 yards of the Lower Reservoir.

COMMON NAME	SCIENTIFIC NAME	NY STATE LISTING	FEDERAL LISTING
Birds			
Pied-billed Grebe <i>Breeding</i>	<i>Podilymbus podiceps</i>	Threatened	11644

This report only includes records from the NY Natural Heritage database.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the listed animals in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org, and from NYSDEC at www.dec.ny.gov/animals/7494.html.



**The following rare plants, rare animals, and significant natural communities
have been documented at the project site, or in its vicinity.**

We recommend that potential impacts of the proposed project on these species or communities be addressed as part of any environmental assessment or review conducted as part of the planning, permitting and approval process, such as reviews conducted under SEQR. Field surveys of the project site may be necessary to determine the status of a species at the site, particularly for sites that are currently undeveloped and may still contain suitable habitat. Final requirements of the project to avoid, minimize, or mitigate potential impacts are determined by the lead permitting agency or the government body approving the project.

The following natural communities are considered significant from a statewide perspective by the NY Natural Heritage Program. Each community is either an example of a community type that is rare in the state, or a high-quality example of a more common community type. By meeting specific, documented criteria, the NY Natural Heritage Program considers these community occurrences to have high ecological and conservation value.

<i>COMMON NAME</i>	<i>SCIENTIFIC NAME</i>	<i>NY STATE LISTING</i>	<i>HERITAGE CONSERVATION STATUS</i>
Wetland/Aquatic Communities			
Red Maple-Hardwood Swamp			High Quality Occurrence of Uncommon Community Type
Documented at the project site at Fox Brook. This occurrence is a large, mature, diverse example, with no recent (last 75-100 years) disturbance in a moderate-sized landscape block managed primarily for timber resources.			7200
Floodplain Forest			High Quality Occurrence of Rare Community Type
Documented at the project site at the Salmon River gorge: A relatively small floodplain forest sporting very high diversity and a wide range of substrate and physiognomic types in a moderately-sized and moderate-condition landscape.			12015
Vernal Pool			High Quality Occurrence of Uncommon Community Type
Documented at the aqueduct portion of the project site south of Pipe Line Road. This relatively large vernal pool complex is in good condition within a moderate size landscape comprised of a patchy mix of natural areas, agricultural lands, and scattered residences along rural roads.			11621
Documented at the project site at Hog Back Road. This relatively large vernal pool complex is in good condition bisected by secondary road within a moderate size landscape comprised of a patchy mix of natural areas, agricultural lands, and scattered residences along rural roads.			11617
Confined River			High Quality Occurrence of Uncommon Community Type
East Branch Salmon River: The occurrence is moderate-sized with good diversity in excellent condition in a large natural landscape with limited disturbances.			11013
Mad River continuing into Salmon River: The midreach stream is moderately large with only few and minor disturbances, good habitat and species diversity, and intact hydrology in a large natural landscape with 100% forest cover and only a few minor road crossings.			11018
Rocky Headwater Stream			High Quality Occurrence
Documented within 1/2 mile north of the project site at Mill Stream. The rocky headwater stream is very large with only few and minor disturbances, good habitat and species diversity, and intact hydrology located in a large natural landscape with nearly 100% forest cover and only a few minor road crossings.			11019

Upland/Terrestrial Communities

Shale Talus Slope Woodland

High Quality Occurrence of
Uncommon Community Type

Documented at the Salmon River Falls and gorge. 2005. This is a moderate-sized very rich expression of a talus slope woodland running along both gorge walls. Connectivity is excellent within the gorge, but less so outside the gorge.

3836

Shale Cliff and Talus Community

High Quality Occurrence of
Uncommon Community Type

Documented at the Salmon River Falls and gorge. 2005. This community is small to moderate-sized and occurs in three patches interspersed among a shale-talus slope woodland community. It is in very good condition, with good connectivity to the nearby landscape, and relatively inaccessible and undisturbed.

6544

Calcareous Shoreline Outcrop

High Quality Occurrence of
Rare Community Type

Documented at the Salmon River Falls and gorge. This is moderate-sized shoreline outcrop occurring in many patches along the Salmon River. Herbaceous species diversity is relatively high and maintained by periodic releases from the upstream dam.

12013

Calcareous Cliff Community

High Quality Occurrence of
Uncommon Community Type

Documented at the Salmon River Falls gorge. This is a relatively small series of calcareous cliffs in very good condition within a small, but contained and protected landscape.

12014

The following plant is listed as Threatened by New York State, and so is a vulnerable natural resource of conservation concern.

Vascular Plants

Bird's Eye Primrose

Primula mistassinica

Threatened

Imperiled in NYS

Documented within 1/3 mile of the aqueduct portion of the project site.

2370

This report only includes records from the NY Natural Heritage database. For most sites, comprehensive field surveys have not been conducted, and we cannot provide a definitive statement as to the presence or absence of all rare or state-listed species. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the rare animals and plants in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org, from NatureServe Explorer at www.natureserve.org/explorer, and from USDA's Plants Database at <http://plants.usda.gov/index.html> (for plants).

Information about many of the natural community types in New York, including identification, dominant and characteristic vegetation, distribution, conservation, and management, is available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org. For descriptions of all community types, go to www.dec.ny.gov/animals/97703.html for Ecological Communities of New York State.