Stage II Review for Recertification of the Salmon River Hydroelectric Project, LIHI #20 by the Low Impact Hydropower Institute's (LIHI)

Prepared by Gary M. Franc
December 27, 2021

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I. INTRODUCTION

The owner of the Salmon River Hydroelectric Project (Project) is Erie Boulevard Hydropower, L.P. (EBH), a wholly owned subsidiary of Brookfield Renewable Energy Group (BREG).[1] The Project is located in the Salmon/Sandy River Basin (04140102) on the Salmon River in New York and is comprised of two developments, Bennetts Bridge and Lighthouse Hill. The original dam construction was completed at Bennetts Bridge (Lat-43.5444 N, Long-75.919 W) in 1913-1914 and at Lighthouse Hill (Lat-43.524 N, Long-75.971 W) in 1930.

As was done for all of its "Class of '93" projects, Niagara Mohawk Power Corporation (NMPC), the owner at the time, initiated settlement negotiations with relicensing interveners in 1993. A Section 401 Water Quality Certificate (WQC)[2] for the Project was issued by the New York State Department of Environmental Conservation (NYSDEC) on April 28, 1994, on condition that the terms and conditions of the Salmon River Project Settlement Offer (SRPSO), signed by NYSDEC, NMPC, New York Rivers United (NYRU), the Adirondack Mountain Club (AMC), and Trout Unlimited (TU) were met.

The Federal Energy Regulatory Commission (FERC) issued a 40 year Project license[3], No. 11408, to NMPC on February 21, 1996, which expires on February 20, 2036. The license contains a Final Environmental Assessment (FEA) dated February 16, 1996 (See page 24). The SRPSO is contained as Attachment A of the FEA (See page 105).

NMPC sold all of its hydro assets to EBH, a subsidiary of Orion Power, a newly formed private power wholesaler in 1999[4]. In 2003, EBH hydro assets were acquired by Entergy. On January 16, 2004, FERC amended the license and revised annual FERC charges[5]. In 2006, Entergy sold these EBH assets to BREG.

The Project has a total installed capacity of 36.25 megawatts (MW), with the Bennetts Bridge development installed at 28.75 MW and the Lighthouse Hill development installed at 7.5 MW. The application states that for water years 2015 through 2020, the Bennetts Bridge development produced an average annual generation (AAG) of 93,438 megawatt-hours (MWh), which corresponds to a plant factor of 37.1%. The Lighthouse Hill development produced 22,916 MWh, corresponding to a plant factor of 34.9%.

On June 10, 2021, LIHI sent EBH a reminder letter that the Project's current eight year certification, as LIHI #20, expires on November 14, 2021. The LIHI application for recertification was submitted in August 2021 by EBH. The Stage I Recertification Review was completed on September 29, 2021, with findings of no significant shortcomings.

The application states that no material changes have occurred at the Project throughout the current certification period. Additionally, LIHI released a new, second edition of the LIHI Certification Handbook in March of 2016, based on a revised set of low impact criteria. Therefore, a Stage II recertification review was deemed necessary. On October 27, 2021, LIHI posted the application for public comments. Comments needed to be received on or before 5 pm EST December 26, 2021. None were received. On November 16,

[1] EBH - 184 Elm Street, Potsdam, NY 13676 – Daniel J. Maguire, P.E., Compliance Manager - 315-267-1036, Danny.Maguire@brookfieldrenewable.com
[2] WQC - https://lowimpacthydro.org/wpcontent/uploads/2020/08/11408_Salmon_WQC.pdf
[3] FERC license - https://elibrary.ferc.gov/eLibrary/idmws/common/opennat.asp?fileID=8402048
[4] http://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=126466
[5] Amended FERC license - https://elibrary.ferc.gov/eLibrary/filedownload?fileid=10044994

2021, LIHI extended the certification term of the Project to February 28, 2022. Although not required, EBH submitted a revised LIHI Recertification application on December 1, 2021.

II. PROJECT GEOGRAPHIC LOCATION

The Salmon River is a small river north of Syracuse in Upstate New York. The Salmon River derives its name from the landlocked Atlantic salmon which were of great importance to Native Americans and early settlers of the region. These native salmon were extirpated from the river by 1872 due to overfishing, dam construction downstream of the Project[6], deforestation, pollution and agriculture, and were extirpated from Lake Ontario by 1898[7].

From its headwaters in the Tug Hill[8] region of New York, it flows 44 miles westward through two hydroelectric dams before it empties into eastern Lake Ontario at Port Ontario in Oswego County. The Salmon River watershed drains approximately 285 square miles (SQMI). (See Figure 1).

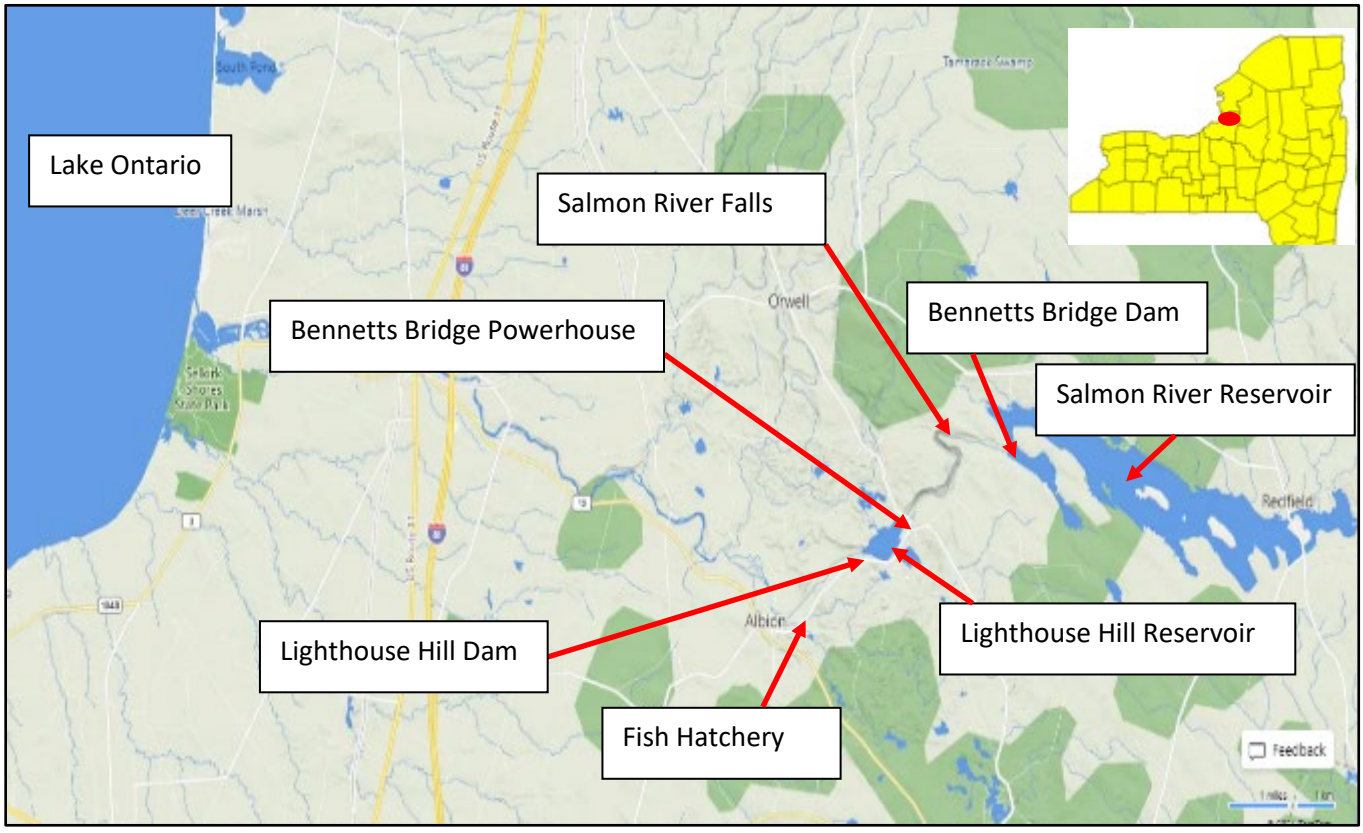

Figure 1 - Location Map

[6] In 1837 a wooden trust dam was constructed just west of Pulaski hindering upstream migration. This dam was eventually removed years before the construction of the Bennetts Bridge and Lighthouse Hill developments.

[7] https://www.fishsalmonriver.com/History-of-the-Salmon-River-Fishery

[8] The Tug Hill upland region in northern New York State is famous for heavy winter snow. Some winters, the annual snow fall is the highest in the US.

The headwaters of the Salmon River are located in western Lewis County. The primary upper tributaries are the North Branch Salmon River, fed by the Mad River and the East Branch Salmon River. The river's upper reaches are heavily forested and sparsely populated, allowing for the water quality of the river to be extremely high.

The Salmon River reservoir, also known as the Redfield Reservoir, is a 6.9-mile-long man-made waterbody in Oswego County with a contributing drainage area of 194 SQMI. The reservoir was created with the completion of the Bennetts Bridge dam, at river mile (RM) 21.5. It covers an area of 3,550 acres with a maximum depth of 50 feet and has the capacity to hold 66,000 acre feet (ACFT) of water.

The 110-foot-high Salmon River Falls, located on the Bennetts Bridge bypassed reach, about 1.0 mile below the dam, provides a natural historical barrier to upstream movement of fish from Lake Ontario to the Salmon River above the falls. (See Figure 2). Prior to 1993, the falls and surrounding land was owned by the NMPC. Ownership was transferred to New York State as part of FERC relicensing, with the land being managed by the NYSDEC.

The Lighthouse Hill reservoir, also known as the Lower Salmon River Reservoir, is located in Oswego County near Altmar, about three miles downstream of the Salmon River Reservoir. The basin's contributing drainage area at its outlet is 198 SQMI. The 170-acre reservoir was created with the completion of the Lighthouse Hill Dam at RM 17.0 in 1930, which currently represents the first barrier to upstream migration for salmon and trout.

Figure 2 - Salmon River Falls

The Salmon River's main stem below the Lighthouse Hill dam flows westerly reaching the river's mouth at Lake Ontario. The amount of water flowing in the river's mainstem is controlled by the Lighthouse Hill Dam, including summertime recreational releases of water to enhance whitewater rafting opportunities.

Two tributaries, Trout Brook and Orwell Brook, enter the river below the dam and are also accessible to migrating salmon and trout. Salmon also run up a third tributary, Beaverdam Brook which connects to the Salmon River Fish Hatchery. The hatchery directly takes in brood stock and releases juvenile hatchery-raised fish.

Since the late 1960s, the Salmon River has been stocked primarily with Chinook salmon, Coho salmon, steelhead, and brown trout, in addition to a smaller proportion of Atlantic salmon. These fish return to the river for annual spawning runs after spending a majority of the year in Lake Ontario. It is a popular sport fishing destination, and the most heavily fished of New York's Lake Ontario tributaries.

One US Geological Survey (USGS) gage is located in the vicinity of the hydroelectric developments that can be used to estimate available flow. USGS gage 04250200 on the Salmon River at Pineville, New York

(GAGE1), located below the Lighthouse Hill dam, has a contributing drainage area of 238 SQMI and contains daily average period-of-record (POR) flows from November 5, 1992 to present day.

The LIHI application states the average annual flow (AAF) at GAGE1 for calendar years 1996 through 2020 is 814 cubic feet per second (CFS). I also performed a flow duration analysis to estimate the AAF at the Lighthouse Hill development using POR flows. A drainage area ration (DAR) of (198/238) or 0.832 was used to estimates flow at Lighthouse Hill from recorded flows at Pineville.

The analysis indicates, the minimum daily flow of 53 CFS occurred on August 21, 1995. The maximum daily flow of 8,219 CFS occurred on January 8, 1998 and the average daily flow is 668 CFS (3.37 CFS per SQMI). The corresponding January through December flows in CFS are:

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
745	703	1,012	1,428	631	402	342	299	379	572	724	785

Flow duration analyses indicate a daily flow of 199 CFS is exceeded about 90% of the time annually, a daily flow of 431 CFS is exceeded about 50% of the time annually, a daily flow of 1,472 CFS is exceeded about 10% of the time annually and a daily flow of 2,896 CFS is exceeded about 1% of the time annually.

Flow frequency analyses indicate the 10-year daily flow is about 6,921 CFS, the 50-year daily flow is about 9,234 CFS, and the 100-year daily flow is 10,194 CFS, while the 7Q10[9] flow is 93 CFS.

III. PROJECT SITE CHARACTERISTICS

The Salmon River Project consists of two hydroelectric developments, Bennetts Bridge and Lighthouse Hill, listed from upstream to downstream. There are no other dams currently present on the Salmon River.

A. Bennetts Bridge

The Bennetts Bridge development has a total catchment of 194 SQMI and consists of:

- A 607-foot-long and 45-foot-high concrete gravity dam (See Figure 3) with:
  - A reinforced concrete intake structure 92 feet long by 39.5 feet wide by 53 feet high;
  - A 107-foot-long non-overflow section with crest elevation at 942 feet mean sea level (FTMSL);
  - A 244-foot-long ungated spillway section with crest elevation at 935 FTMSL, equipped with 2-foot-high flashboards, and;
  - A 256-foot-long gated spillway section with crest elevation at 926 FTMSL, with eleven 11.5-foot-high by 20-foot-wide Tainter gates;

[9] 7Q10 flow is the daily seven day rolling average flow that is exceeded 90% of the time annually. There is only a 10% chance that a seven day rolling average flow less than this value will occur in a given year.

- Three earth dikes 100, 1,330 and 695 feet long located along the south shore of the impoundment;
- An impoundment with gross storage capacity of 66,000 ACFT, maximum surface area of 3,550 acres and normal maximum surface elevation at 937 FTMSL;
- A 10,000-foot-long conduit system, directing water from the reservoir to the downstream powerhouse, consisting of:
    - A concrete tunnel section 650 feet long and 12 feet in diameter;
    - A reinforced plastic pipeline section 7,790 feet long and 12 feet in diameter;
    - A steel pipeline section 1,200 feet long and 11.5 feet in diameter;
    - A differential surge tank 105 feet high (See Figure 4);
    - A steel distributor 200 feet long and 12 feet in diameter, and;
    - Four steel penstocks, each 330 feet long and 8 feet in diameter, with associate shut-off and air valves;

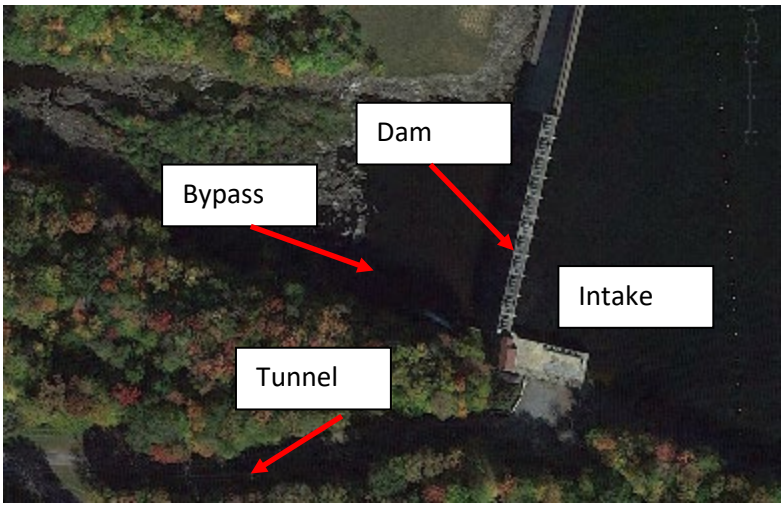

Figure 3 - Overview of Bennetts Bridge Dam

- A concrete, brick and steel powerhouse 206 feet long and 70 feet wide, with 3.5-inch spaced coarse trashracks and 1.5-inch spaced overlays within each intake directing flow to four horizontal Francis turbine-generators with a total installed capacity of about 28.75 MW. At a design head of 270 feet:
    - Unit 1 produces 6.5 MW at a minimum turbine flow of 350 CFS and 7.0 MW at a maximum turbine flow of 400 CFS.
    - Similarly, Units 2, 3 and 4 produces 7.0 MW at a minimum turbine flow of 375 CFS and 7.5 MW at a maximum turbine flow of 467 CFS;

Figure 4 - Bennetts Bridge Powerhouse

- Three existing 12-kilovolt (KV) transmission lines with a total length of 17,300 feet and appurtenant facilities.

B. Lighthouse Hill

The Lighthouse Hill development has a total catchment of 198 SQMI and consists of:

- A 382-foot-long concrete gravity dam consisting of (See Figure 5):
  - A 155-foot-long and 59-foot-high non overflow section with crest elevation at 656 FTMSL;
  - A 15-foot-long sluice gate section;
  - A 43-foot-long and 53-foot-high ungated spillway section with crest elevation at 650 FTMSL controlled by 1-foot-high flashboards, and;
  - A 184-foot-long and 46-foot-high spillway section with crest elevation at 643 FTMSL, 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 ACFT, maximum surface area of 170 acres with normal maximum surface elevation at 651 FTMSL;
- A 324-foot-long and 40-foot-high earthen dike with crest elevation at 656 FTMSL;
- Three 17-foot-wide by 8-foot-high by 62-foot-long concrete penstocks;
- A 125-foot-long concrete, brick and steel powerhouse with an intake structure containing:
  - 1.0-inch spaced trashracks;
  - Two vertical Francis turbine-generator units with a total installed capacity of about 7.5 MW. At a design head of 62 feet each unit produces 3.5 MW at a minimum turbine flow of 725 CFS and 4.2 MW at a maximum turbine flow of 984 CFS.
  - One new 2.150-MW environmental flow turbine-generator. The unit is operated to continuously release a base flow which varies throughout the year from 185 CFS in May through July, 285 CFS in January through April and 335 CFS in September through December;
  - A 40-foot-wide and 2,800-foot-long tailrace channel;
  - A 400-foot-long, 12-KV transmission line and appurtenant facilities.

Figure 5 - Lighthouse Hill Dam & Powerhouse

IV. ZONES OF EFFECT (ZOEs)

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

1. ZOE 1, 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. ZOE 2, which extends from the Bennetts Bridge spillway, downstream approximately 3.5 miles to the Lighthouse Hill impoundment;

3. ZOE 3, which extends from the Bennetts Bridge tailrace, downstream approximately 0.2 miles to the Lighthouse Hill impoundment;
4. ZOE 4, which extends from the head of the Lighthouse Hill impoundment (also known as Lower Reservoir) at the Bennetts Bridge tailrace and bypassed reach confluence, downstream approximately 0.8 miles to the Lighthouse Hill dam and intake;
5. ZOE 5, which extends from the Lighthouse Hill spillway, downstream approximately 0.6 miles to the confluence with the Lighthouse Hill tailrace, and;
6. ZOE 6, which extends from the Lighthouse Hill powerhouse, downstream approximately 13.8 miles to Lake Ontario.

The alternative standards selected to satisfy the LIHI certification criteria in each of these ZOEs are identified in Table 1. As part of my review process, I checked and agreed with their selection with the exception noted in **red**.

Table 1: Zones of Effect

CRITERION and STANDARD SELECTED								
Zone Number and Zone Name	***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**
1. Bennetts Bridge Impoundment	2	2	1	2	1 Plus	3	2	2
2. Bennetts Bridge Bypassed Reach	2	2	1	1	1 Plus	3	2	2
3. Bennetts Bridge Tailrace	2	2	1	1	1 Plus	3	2	2
4. Lighthouse Hill Impoundment	2	2	1	2	1 Plus	3	2	2
5. Lighthouse Hill Bypassed Reach	2	2	2	2	1 Plus	3	2	2
6. Lighthouse Hill Downstream	2	2	2	~~2,~~ **1**	1 Plus	3	2	2

ZOEs 1 through 4 are shown in Figure 6 and ZOEs 5 and 6 are shown in Figure 7.

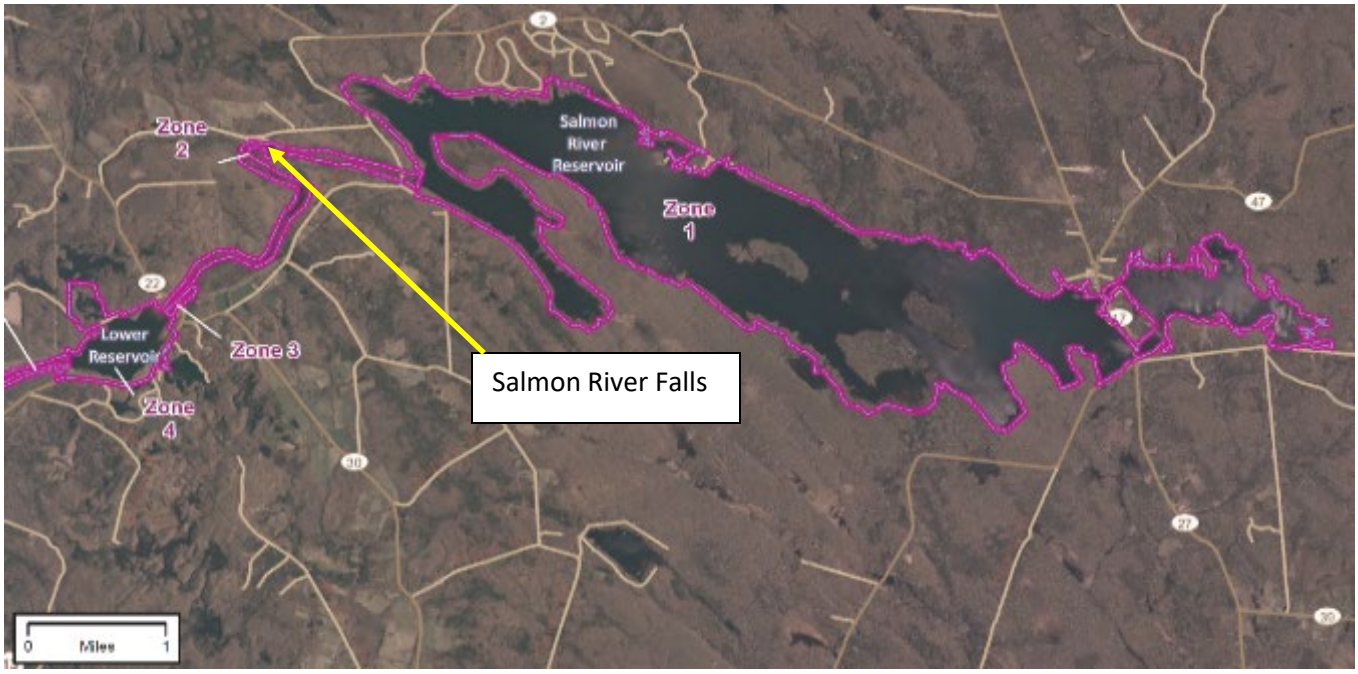

Figure 6 - ZOES 1, 2, 3 & 4

Figure 7 - ZOEs 5 & 6

V. REGULATORY AND COMPLIANCE STATUS

A Section 401 Water Quality Certificate (WQC)[10] for the Project was issued by the NYSDEC on April 28, 1994, on condition that the terms and conditions of the SRPSO, signed by NYSDEC, NMPC, NYRU, the AMC, and TU were met.

The FERC issued a 40 year Project license[11], No. 11408, to NMPC on February 21, 1996, which expires on February 20, 2036. The license contains a FEA dated February 16, 1996 (See page 24). The SRPSO is contained as Attachment A of the FEA (See page 105).

A. Licensing Requirements

The FERC license includes a number of requirements intended to restore, protect, and enhance natural resources and improve public access and recreation. The FERC license contains twelve articles.

Article 401 – Requires the Salmon River Reservoir be operated according to Rule Curve 16, as finalized in the SRPSO. This rule curve provides protection and enhancement of aquatic resources, water quality, fisheries, aesthetic resources, and recreation resources in the Salmon River basin. Additionally, seasonal base flows, whitewater flows and ramping of flows are specified.

Article 402 – Develop a comprehensive plan for monitoring stream flows and reservoir water surface elevations and file for FERC approval.

Article 403 – Finalize a plan to install, operate, and maintain water temperature gages on the Salmon River. The plan should include a water temperature monitor at the Lighthouse Hill Reservoir. Determine feasibility of installing a water temperature monitor at the USGS gage at Pineville.

Article 404 – Develop a proposal for reducing the trashrack spacing a both the Bennetts Bridge and Lighthouse Hill developments.

Article 405 – Participate in the NYSDEC sea lamprey control program by providing periodic flow releases of about 36 CFS from Lighthouse Hill, when requested.

Article 406 – FERC reserves authority to require the construction, operation and maintenance for fishways, as may be prescribed by the US Department of the Interior (USDOI), pursuant to Section 18 of the Federal Power Act.

Article 407 – Develop a plan for enhancing wetland OR-18, associated with Lighthouse Hill reservoir. On April 15, 1997, FERC approved the Salmon River Wetland Enhancement Plan (SRWEP).[12]

Article 408 – File a final plan with FERC 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 September 9, 1997, FERC modified and approved a Stream Bed Modification Plan (SBMP).[13]

[10] WQC - https://lowimpacthydro.org/wpcontent/uploads/2020/08/11408_Salmon_WQC.pdf
[11] FERC license - https://elibrary.ferc.gov/eLibrary/idmws/common/opennat.asp?fileID=8402048
[12] https://elibrary.ferc.gov/eLibrary/filedownload?fileid=0014FDDF-66E2-5005-8110-C31FAFC91712
[13] https://elibrary.ferc.gov/eLibrary/filedownload?fileid=00152051-66E2-5005-8110-C31FAFC91712

Article 409 – Re-paint the 1,200-foot-long above ground segment of the Bennetts Bridge pipeline in order to improve its visual compatibility with the surroundings. The paint should be a flat, dark brown color that blends with the dominant natural colors of the landscape.

Article 410 –Requires implementation of the submitted Landscape Plan filed with FERC on January 27, 1994. On April 3, 1997, FERC approved the Landscape Plan. [14]

Article 411 – Implement the Programmatic Agreement (PA) with FERC, the Advisory Council on Historic Preservation (ACHP), and the New York State Historic Preservation Officer (SHPO). On January 18, 1995, SHPO submitted a PA for Project. On February 25, 1997, a Cultural Resources Management Plan (CRMP) was filed with FERC.[15] On June 1, 1998, FERC approved the CRMP.[16]

Article 412 – Implement a Recreation Plan (RP) for submittal to FERC. On May 1, 1997, FERC approved the submitted RP. [17] On February 10, 2004, FERC approved an amended RP. [18]

B. Compliance Issues

The current 8-year LIHI Certification for the Project was issued without any conditional requirements. Over the last eight years of the current certification, there have been nine FERC "extension of time" requests and no major compliance issues.

The following is a compliance summary list since the last LIHI certification period:

- On August 7, 2013, EBH submitted notice of Lighthouse Hill base flow excursions due to an outage to repair switchyard equipment that occurred on July 24, 2013[19]. On June 13, 2014, FERC informed EBH that this base flow deviation would not be deemed a license violation[20];
- On November 4, 2013, FERC notified EBH the base flow deviation from the Lighthouse Hill development due to a failed oil pump that occurred on September 3, 2013, would not be deemed a license violation[21];
- On August 23, 2016, EBH notified FERC of a base flow excursion due to lighting strike causing outage on August 13, 2016[22] which FERC did not consider a violation of the license[23];
- On October 7, 2016, FERC informed EBH that the late filing of the notice regarding cancellation of whitewater releases due to low water would not be considered a violation of the license [24];
- On November 29, 2016, FERC informed EBH the base flow deviation event that occurred on August 13, 2016 due to a lightning strike would not be considered a violation of the license[25]; and
- On December 12, 2016, FERC informed EBH the base flow deviation event that occurred on September 26, 2016, would not be considered a violation of the license[26].

[14] https://elibrary.ferc.gov/eLibrary/filedownload?fileid=0006468A-66E2-5005-8110-C31FAFC91712
[15] https://elibrary.ferc.gov/eLibrary/filedownload?fileid=000ACBED-66E2-5005-8110-C31FAFC91712
[16] https://elibrary.ferc.gov/eLibrary/filedownload?fileid=0006F7CB-66E2-5005-8110-C31FAFC91712
[17] https://elibrary.ferc.gov/eLibrary/filedownload?fileid=001501EA-66E2-5005-8110-C31FAFC91712
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[24] https://elibrary.ferc.gov/eLibrary/filedownload?fileid=01E4272F-66E2-5005-8110-C31FAFC91712
[25] https://elibrary.ferc.gov/eLibrary/filedownload?fileid=01E530C6-66E2-5005-8110-C31FAFC91712
[26] https://elibrary.ferc.gov/eLibrary/filedownload?fileid=01E585CC-66E2-5005-8110-C31FAFC91712

VI. LIHI PUBLIC COMMENTS

The LIHI recertification application was deemed submitted on September 7, 2021 and the Stage I Recertification Review was completed on September 29, 2021, with findings of no significant shortcomings but a request for supplemental information. On October 27, 2021, LIHI posted the application for the 60-day public comment period which closed on December 26, 2021. Although not required, EBH submitted a revised LIHI Recertification application on December 1, 2021 in response to the Stage 1 review.

A. Comment Letters

On October 27, 2021, LIHI filed notice via their email list that the public comment period for the application had been opened. The notice stated, *"LIHI is seeking comment on this application. Comments that are directly tied to specific LIHI criteria (flows, water quality, fish passage, etc.) will be most helpful, but all comments will be considered. Comments may be submitted to the Institute by e-mail at comments@lowimpacthydro.org with "Salmon River Project Comments" in the subject line, or by mail addressed to the Low Impact Hydropower Institute, 1167 Massachusetts Avenue, Office 407, Arlington, MA 02476. Comments must be received at the Institute on or before 5 pm Eastern time on December 26, 2021 to be considered. All comments will be posted to the web site and the applicant will have an opportunity to respond. Any response will also be posted. The project description and complete application can be found HERE[27]."* No comments were received.

B. Agency Correspondence

On October 27, 2021, LIHI[28] emailed contacts[29] listed in the LIHI application as knowledgeable about the Project stating, *"You may have already received this notice if you are on the Low Impact Hydropower Institute (www.lowimpacthydro.org) email list. However, you were also identified as an agency contact on the LIHI recertification application recently submitted by Erie Boulevard Hydro LP the Salmon River Hydroelectric Project on Salmon River in New York. The application reviewer, Gary Franc (copied here), may be in contact with you if he has questions about these projects or wishes to clarify any aspects of the LIHI applications. You may also provide comments directly to LIHI as indicated below. More information about the projects and their application can be found in the link below. If you would like to receive additional notices about these projects or other hydroelectric projects in your region applying for LIHI certification, please sign up for our mailing list.[30]*

No agencies or stakeholders responded. Given that the application and supplement provided all supporting documentation and no other apparent issues were uncovered, I did not reach out to any agencies.

[27] https://lowimpacthydro.org/lihi-certificate-20-salmon-river-hydroelectric-project-new-york/

[28] Maryalice Fischer – LIHI Certification Program Director - mfischer@lowimpacthydro.org - 603-664-5097 office - 603-931-9119 cell

[29] Eric.Davis@vermont.gov, Jeff.Crocker@vermont.gov, Betsy.Simard@vermont.gov, Bob.Popp@vermont.gov, elizabeth.peebles@vermont.gov, scott.dillon@vermont.gov, melissa_grader@fws.gov

[30] https://form.jotform.com/202176096857060

VII. DETAILED CRITERIA REVIEW

This section contains my recertification review of the Project with regard to the LIHI Certification criteria. As part of my review, I conducted a FERC eLibrary search to verify claims in the recertification application. My review concentrated on the period since the current certification term of the Project from 2013 to present, for FERC docket number P-11408.

A. Ecological Flows

The goal of this criterion is to support habitat and other conditions that are suitable for healthy fish and wildlife resources in riverine reaches that are affected by the facility's operation. The application states the Project satisfies the LIHI flows criterion by meeting alternative standard A-2 in all ZOEs.

According to the FEA[31], an Instream Flow Incremental Methodology (IFIM) study showed:

- The optimum flow for all species/life stages in the Salmon River for the entire year is between 400 and 500 CFS;
- A minimum flow of 350 CFS is needed to permit salmonid movement;
- Bank-to-bank wetted surface area occurs at 350 to 400 CFS;
- Water temperature is best moderated at 350 to 400 CFS or greater, and;
- Professional drift boat fishermen need a minimum of 350 CFS in the fall to operate their boats.

However, flow modeling studies showed that available storage could not consistently provide uninterrupted minimum flows in the range of 400 to 500 CFS[32]. Since uninterrupted minimum flow was the primary resource agency objective for enhancing aquatic resources in the Salmon River, seasonal base 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.

In addition, the SRPSO established a Flow Management Advisory Team (FMAT) to keep abreast of the changing conditions that may affect river flows and to coordinate requests to the FERC for changes in flows, releases, and other water-related issues. The FMAT initially consisted of a number of parties each with one vote. The initial FMAT included the: NYSDEC, USFWS, National Park Service (NPS), NYS Office of Parks, Recreation and Historic Preservation (SHPO), American Whitewater Affiliation (AWA), NYRU, TU, AMC, Oswego County River Guides, Oswego County Federation of Sportsmen's Clubs, Oswego County Legislators, Village of Pulaski Mayor, Albion County Legislator, Town of Redfield Supervisor, Pulaski/Eastern Shore Chamber of Commerce, Salmon River Fishery Committee, and EBH.

Over the years, participation by some of the members has waned. However, participation by Federal and States agencies has remained active. Once a year the FMAT meets at the SRFH to discuss and monitor the effectiveness of flow requirements and evolving hydropower, ecological, and recreational needs in the Salmon River Basin.

The FMAT also facilitates post-licensing requests to the FERC for changes in flows or Project operations. An executive board of the FMAT, consisting of EBH and the NYSDEC, is used to mutually agree on temporary reduction in base flows or whitewater releases during extreme drought or emergency conditions. If

[31] FERC license See page 64 - https://elibrary.ferc.gov/eLibrary/idmws/common/opennat.asp?fileID=8402048

[32] My flow duration analysis, indicates 400 CFS outflows below Lighthouse Hill are exceeded annually about 55% of the time, while 500 CFS outflows below Lighthouse Hill are exceeded annually about 45% of the time.

modifications occur, EBH notifies the FERC, NYSDEC and USFWS as soon as possible, but no later than 10 days after each such incident

Bennetts Bridge

License article 401 requires releasing a continuous minimum flow of 20 CFS from July 1 through September 30, and 7 CFS for the remainder of the year, from the Bennetts Bridge dam into the bypass reach.

Releases from the Bennetts Bridge impoundment (Salmon River reservoir) must also follow ramping requirements whenever the inflow into the impoundment is relatively constant or is decreasing.

Outflow from the impoundment can increase:

- No more than 400 CFS every 24 hours when base flows are greater than 185 CFS (September through April), and;
- No more than 200 CFS every 24 hours when base flows are 185 CFS or less (May through August).

Outflow from the impoundment can decrease:

- No more than 400 CFS every 12 hours when base flows are greater than 185 CFS (September through April), and;
- No more than 200 CFS every 12 hours when base flows are 185 CFS or less (May through August).

License article 408 required modifying the streambed at the top of Salmon River Falls to better distribute the minimum flow releases over the falls. On December 12, 1996, the licensee filed a plan to modify the stream bed which was approved by FERC on September 9, 1997.[33]

Lighthouse Hill

License article 401 requires that the Project be operated according to Rule Curve 16, as described in the SRPSO. This rule curve provides protection and enhancement of aquatic resources, water quality, fisheries, aesthetic resources, and recreation resources in the Salmon River basin. A continuous year round base flow from the Lighthouse Hill Reservoir is required while maintaining target water surface elevations in the Salmon River Reservoir, as shown in Table 2.

Base flows are released directly from the Lighthouse Hill development into the bypass reach. Additionally, a 22-CFS flow is passed from the Lighthouse Hill impoundment to the Salmon River Fish Hatchery (SRFH)[34] which is then released from the SRFH downstream.

Target water surface elevations for the Salmon River Reservoir may not be achievable during periods of high or low inflows. High flow and low flow periods control when the water surface elevation at Salmon River Reservoir reaches the seasonal High-Flow or Low-Flow limit in Table 2. During high flow or low flow periods, base flows take precedence over reservoir elevations. However, base flows can be less than the required amount during extreme drought or emergency conditions.

[33] https://elibrary.ferc.gov/eLibrary/filedownload?fileid=8184198

[34] Located in Altmar, NY and built in 1980, the SRFH specializes in raising steelhead, Chinook salmon, Coho salmon, brown trout and landlocked salmon. Originally constructed to revive and enhance the fishery of the Great Lakes, this facility provides most of the fish for the now multi-million dollar Lake Ontario salmonid fishery. Each year this hatchery produces more than 2,000,000 fingerlings (young fish 3-5 inches long) and close to 1,000,000 yearlings (fish one year old or over) and stocks 3.5 million trout and salmon, and nine million walleye fry. The fish are transported by trucks that are specially equipped with tanks of oxygenated water.

Table 2 - Project Base Flow and Targeted Reservoir Elevations				
Month	Base Flow Below Lighthouse Hill (cfs)	Salmon River Reservoir Targeted Water Surface Elevation (feet)	Salmon River Reservoir High-Flow Trigger Elevation (feet)	Salmon River Reservoir Low-Flow Trigger Elevation (feet)
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

Additionally, whitewater flows must be released for no less than five weekends per year from Lighthouse Hill as follows:

- 400 CFS for one weekend in June;
- 750 CFS for two weekends in July;
- 750 CFS for the first full weekend in August, and
- 750 CFS for the first weekend in September.

Summary

License article 402 required developing a plan for monitoring stream flows and reservoir water surface elevations. A Stream Flow and Reservoir Elevation Monitoring Plan (SFREMP) was filed on February 11, 1997[35], The SFREMP was approved by the FERC on May 5, 1997.[36] Consistent with this plan, staff gages were installed in the Salmon River Reservoir for purposes of field verification.

On August 20, 2003[37], an amended SFREMP was filed to use a website[38] to provide the public with short term and long term release information immediately downstream of Lighthouse Hill in lieu of using the downstream USGS gage 04250200 Salmon River at Pineville, NY. FERC approved the amended plan on September 30, 2003.[39]

These minimum and base flows may be temporarily modified if required by operating emergencies beyond the control or for short periods of time upon mutual agreement between EBH, NYSDEC, and USFWS with EBH notifying the FERC as soon as possible, but no later than 10 days after each incident.

[35] https://elibrary.ferc.gov/eLibrary/filedownload?fileid=8357706
[36] https://elibrary.ferc.gov/eLibrary/filedownload?fileid=3079501
[37] https://elibrary.ferc.gov/eLibrary/filedownload?fileid=9764445
[38] https://safewaters.com/facility/42
[39] https://elibrary.ferc.gov/eLibrary/filedownload?fileid=9785431

A review of the FERC docket indicates a few deviations occurred in providing base flows over the current LIHI certification period. However, EBH notified FERC as required, none were due to operator error, and no license violations were assessed. My review confirms that EBH is in compliance with minimum and base flow releases and pond fluctuation limits supportive of aquatic habitat, and therefore, this LIHI criterion is satisfied.

B. Water Quality

The goal of this criterion is to ensure that water quality is protected in water bodies directly affected by facility operations, including downstream reaches, bypassed reaches, and impoundments above dams and diversions. The application states the Project satisfies the LIHI water quality criterion in all ZOEs by meeting alternative standard B-2.

The Salmon River is listed as impaired in the 2018 Section 303(d) List[40] of impaired waters requiring a total maximum daily load (TMDL) and other strategies for polychlorinated biphenyls (PCBs) and Mirex[41] contaminated sediments. The cause of this impairment is not related to the Project's operations.

EBH states the Salmon River Project is in compliance with all conditions of the WQC which was issued by the NYSDEC on April 28, 1994, on condition that the terms and conditions of the SRPSO were met. The original WQC is still in effect. Additionally, EBH contacted the NYSDEC on July 8, 2021, regarding the current WQC status. The NYSDEC responded on July 12, 2021 stating that the existing WQC is valid for the duration of the FERC license. This consultation documentation was provided in Appendix D of the LIHI recertification application.

Bennetts Bridge

According to the FEA[42], a field study conducted in May and September 1993 examined reservoir habitat, which would be affected by reservoir drawdown. The study found that Rule Curve 16 would have the following effects:

- 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 or about 20% of land around the perimeter of the reservoir. 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;
- Keeps the Salmon River Reservoir near full elevation (933 to 934 feet FTMSL) from May through July, thereby preserving fish spawning and waterfowl nesting habitat during the most critical reproduction period;
- Increases late summer elevations up to 4 feet higher than historically, which improves recreation and aesthetics opportunities;
- Allows for continued moderate fall drawdown of the reservoir; and
- Provides a continuous base flow needed for the trout and salmonid fishery downstream.

Prior to 1940, seventeen species of fish were collected from the Bennetts Bridge impoundment. By the 1950's brook, rainbow, and brown trout provided a substantial fishery which produced trophy catches. The introduction of yellow perch and largemouth bass eventually diminished the trout fishery. In 1967, the

[40] https://www.dec.ny.gov/docs/water_pdf/section303d2018.pdf
[41] An insecticide banned by the US EPA in 1976
[42] FERC license See page 69 - https://elibrary.ferc.gov/eLibrary/idmws/common/opennat.asp?fileID=8402048

reservoir was drawn down and rotenone was applied to eliminate yellow perch, largemouth bass and rough fish to allow reestablishment of brook trout. This effort was unsuccessful as an assessment of temperature conditions in the reservoir indicated suitable cool water trout habitat was limited. The NYSDEC discontinued management of the Salmon River Reservoir for coldwater fish in the 1970's and plans no further fish stocking.

The 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.

Lighthouse Hill

The FEA[43] states that prior to 1940, sixteen species of fish were collected from the Lighthouse Hill impoundment. Between 1934 and 1938, the NYSDEC stocked about 1,350 fingerling brown trout each year in the impoundment. From 1968 through 1981, about 4,500 brown trout, from 4. 5 to 9.5 inches in length, were stocked each year. Stocking of rainbow trout began in 1982 and continues at a rate of 4,300 fish per year, sized from 8.5 to 11.25 inches.

Summer water temperatures at Lighthouse Hill are typically too warm to support a rainbow trout fishery throughout the year, however, summer holdovers are common. The present fish population includes brown trout, rainbow trout, yellow perch, pumpkinseed, and brown bullhead.

The FEA states that a continuous base flow decreases water temperature fluctuations, helps moderate water temperatures throughout the Salmon River, and reduces 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 could adversely affect the salmonid fishery of the Salmon River.

Article 403 of the license required submitting a plan to install, operate, maintain and monitor water temperature gages on the Salmon River. The Water Temperature Monitoring Plan (WTMP)[44] was filed on December 12, 1996, which FERC approved on October 2, 1997[45]. Ongoing water temperature monitoring is limited to the Lighthouse Hill Reservoir, USGS gage at Pineville, NY, and the SRFH.

Summary

My review of the FERC docket indicates the Project over the current LIHI certification period has been operated in accordance with its water quality requirements and does not adversely impact water quality. Therefore, this LIHI criterion is satisfied.

[43] FERC license See page 52 - https://elibrary.ferc.gov/eLibrary/idmws/common/opennat.asp?fileID=8402048
[44] https://elibrary.ferc.gov/eLibrary/filedownload?fileid=8231300
[45] https://elibrary.ferc.gov/eLibrary/filedownload?fileid=8178405

C. Upstream Fish Passage

The goal of this criterion is to ensure safe, timely and effective upstream passage of migratory fish so that migratory species can successfully complete their life cycles and maintain healthy populations in areas affected by the Project's facilities. The application states that the Project satisfies the LIHI upstream fish passage criterion in ZOEs 1 through 4 by meeting alternative standard C-1 and in ZOEs 5 and 6 by meeting alternative standard C-2.

By letter dated January 25, 1993, the USDOI determined that no upstream passage facilities for the Project were required but reserved its authority to prescribe upstream fish passage in the future. Section E of FERC's FEA[46] describes this in greater detail and Article 406[47] of the FERC license includes the FERC's reservation authority pursuant to Section 18 of the Federal Power Act.

Bennetts Bridge

There are no upstream fish passage barriers or migratory fish management issues upstream or within the Salmon River Reservoir. The FEA states that the 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; however, there is little suitable habitat for fish in the bypassed reach.

About a mile downstream within the Bennetts Bridge bypassed reach, the natural 110-foot Salmon River Falls has historically precluded fish migration upstream of the falls.

Lighthouse Hill

When the dam was built in 1930, it precluded access to migratory fish upstream approximately 3.1 river miles to the natural barrier of the Salmon River Falls, although landlocked Atlantic salmon had been extirpated prior to 1900, while alewife and sea lamprey, both considered invasive species were also present but have since been controlled[48]. The present fish population within the impoundment includes brown trout, rainbow trout, yellow perch, pumpkinseed, and brown bullhead. The USDOI has not required upstream passage into the impoundment primarily due to the physical 110-foot high Salmon River Falls barrier, approximately 2 miles upstream of the impoundment.

Summary

A review of the FERC docket and the LIHI application confirms that the Project does not adversely affect upstream passage for migratory species since none are present, and therefore this LIHI criterion is satisfied.

D. Downstream Fish Passage

The goal of this criterion is to ensure safe, timely and effective downstream passage of migratory fish, and for riverine fish that the facility minimizes loss of fish from reservoirs and upstream river reaches affected by facility operations. Migratory species can successfully complete their life cycles and maintain healthy

[46] FERC license See page 4 and 42 - https://elibrary.ferc.gov/eLibrary/idmws/common/opennat.asp?fileID=8402048
[47] FERC license See page 16 - https://elibrary.ferc.gov/eLibrary/idmws/common/opennat.asp?fileID=8402048
[48] Lower Salmon River Restoration and Recreation Enhancement Plan See page 10 - https://www.dec.ny.gov/docs/fish_marine_pdf/r7lsrrrep.pdf

populations in areas affected by the facility. The application states that the Project satisfies the LIHI downstream fish passage criterion in ZOEs 1, 4, 5 and 6 by meeting alternative standard D-2 and in ZOEs 2 and 3 by meeting alternative standard D-1. My review finds that standard D-1 is also appropriate for ZOE 6 since once downstream of the Lighthouse Hill dam, there is no further facility-related barrier to continued passage.

The Salmon River derives its name from the landlocked Atlantic salmon which were of great importance to Native Americans and early settlers of the region. These native salmon were extirpated from the river by 1872 and from Lake Ontario by 1898.

By letter dated January 25, 1993, the USDOI determined that no separate downstream passage facilities for the Project were required but reserved its authority to prescribe downstream fish passage in the future. License article 406 includes the FERC's reservation authority pursuant to Section 18 of the Federal Power Act.

Additionally, license article 404 required the installation of new trashracks at both developments by replacing the existing 3.75-inch spaced trashracks at Lighthouse Hill with 1.0-inch spaced trashracks within 4 years from the issuance of the license and installing 1.0-inch spaced trashracks at Bennetts Bridge when the existing 1.5-inch spaced trashrack overlays used on the 3.5-inch trash racks needed repair or replacement. This has not occurred to date.

FERC issued an order modifying and approving the Trashrack Installation Plan (TIP) on November 16, 1999 based on the plan filed on October 22, 1999[49]. On July 2, 2001, EBH filed a request to amend the TIP to reflect the installation of new 1-inch trashracks at Lighthouse Hill, which FERC approved on September 28, 2001[50].

Prior to 1940, thirty one species of fish were identified downstream of Lighthouse Hill. Smallmouth bass reproduction and fishing were very good below the Village of Pulaski. Limited brown trout and rainbow trout fishing occurred above Pulaski during spring and summers when water temperatures remained cool.

In 1956, Atlantic salmon that had been stocked two 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, 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 (NYSDH) 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 Project 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, with 40% fewer anglers and 20% fewer Chinook salmon in 1992 than in 1989. The diminished fishery is partially due to changes in the state's snagging regulations introduced in 1992 and later rescinded, and partially due to reported declines of salmon populations in Lake Ontario.

[49] https://elibrary.ferc.gov/eLibrary/filedownload?fileid=3176451
[50] https://elibrary.ferc.gov/eLibrary/filedownload?fileid=3234239

My review found that throughout the current LIHI certification, no issues pertaining to downstream fish passage were found. The Project minimum bypass flows and trashracks appear sufficient to protect resident fish that may move downstream. Therefore, this LIHI criterion is satisfied.

E. Shoreline and Watershed Protection

The shoreline and watershed protection criterion is designed to ensure that sufficient action has been taken to protect, mitigate or enhance environmental conditions of soils, vegetation, and ecosystem functions on shoreline and watershed lands associated with the facility. The application states the shoreline and watershed protection criterion in all ZOEs is satisfied by meeting alternative standard E-1 and the PLUS standard.

There is no Shoreline Management Plan for the Project and there are no lands of significant ecological value or critical habitats present. According to the FEA[51], the shorelines of both impoundments range from shallow to steep banks. No unstable banks or shoreline erosion has been reported.

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 residences and camps located along the north shoreline. Much of the upland property is owned by New York State and managed as state forest land, based on a voluntary transfer of ownership as part of the SRPSO.

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.

The application states that NYSDEC has estimated that more than 50% of the Project's two impoundments have dedicated buffer zones for conservation purposes. Much of the upland property is owned by the state and is managed as state forest land, based on a transfer of ownership from NMPC as part of the SRPSO. The Applicant collaborated with the NYSDEC to develop land-use practices consistent with adjoining State properties. In consultation with the NYSDEC, EBH developed a Land Use Management Plan (LUMP) for project lands that manages shorelines previously developed and protects undeveloped properties.

In addition, EBH voluntarily established the Salmon River Enhancement Fund (SREF) as part of the SRPSO which is financed by contributions from EBH[52]. This fund supports the LUMP for the Salmon River. EBH continues to support these efforts.

No issues related to watershed protection have been found over the current LIHI certification period. Since the Project is in compliance with watershed protection aspects of its license and certification criteria, this LIHI criterion is satisfied, and it is my recommendation that the PLUS standard be extended into the new LIHI term.

[51] FERC license See page 47 - https://elibrary.ferc.gov/eLibrary/idmws/common/opennat.asp?fileID=8402048

[52] The annual contribution to the SREF varies since it is based on the amount of revenue that could have been collected from the amount of water diverted to the SRFH from the Lighthouse Hill reservoir. This diversion is typically about 22 cfs. The estimated loss in generation revenue is invoiced to the NYSDEC. The monies received from the NYSDEC are then transferred to the SREF.

F. Threatened and Endangered Species Protection

The threatened and endangered species protection criterion is designed to ensure that the facility does not negatively impact state or federally-listed threatened or endangered species. The application states the LIHI threatened and endangered species criterion is satisfied in all ZOEs by meeting alternative standard F-3.

There is no specific license article requirement for threatened or endangered species protection. In the prior recertification process, circa 2013, the NYSDEC and the USFWS identified the bald eagle as an occasional transient within a mile of the Project area. The USFWS identified the Indiana bat as present or thought to be present in the Project area and/or downstream reach and that the Project and its operations do not negatively impact these species. In addition, EBH and the USFWS have mutually agreed that planned land use practices, such as logging, that have a potential likelihood to affect species of concern will be made available to the USFWS prior to the start of work.

On July 2, 2021, the USFWS's New York Field Office, responded to an EBH request on rare, threatened, or endangered species that the Northern long-eared bat may potentially be present within the Project area. There are no critical habitats located within the Project area. 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 Project, especially with regard to tree clearing from June 1 through July 31, adhere to the prohibitions outlined in the final 4(d) rule.

Additionally, on July 2, 2021, EBH contacted the NYSDEC's Natural Heritage Program for an updated list of threatened and endangered species that may occur in the vicinity of the Project. On August 12, 2021, the NYSDEC responded by indicating the bald eagle and pied-billed grebe, which are state-listed as threatened, have been documented in the vicinity of the Salmon River Project. All correspondence above was provided in Appendix E of the LIHI recertification application.

The bald eagle and pied-billed grebe are protected under the state Environmental Conservation Law Section 11-0535, New York Code of Rules and Regulations (6 NYCRR Part 182), and the federal Migratory Bird Treaty Act.

Bald eagles have been documented in multiple locations within the Project boundary and pied-billed grebes have been documented within 200 yards of the Lighthouse Hill Reservoir. There are no critical habitats documented within the Project area. The NYSDEC developed a Conservation Plan for Bald Eagles in New York State[53]. 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, the species nesting habitat and freshwater wetlands are protected under the state Freshwater Wetlands Act[54] for wetlands greater than 12.4 acres in size.

Throughout the current LIHI certification period, no issues related to threatened and endangered species protection have been identified and the Project is in compliance with species-related requirements. Therefore, this LIHI criterion is satisfied.

[53] https://www.dec.ny.gov/docs/wildlife_pdf/nybaldeagleplan.pdf
[54] https://www.dec.ny.gov/docs/wildlife_pdf/wetart24a.pdf

G. Cultural and Historical Resource Protection

The cultural and historic resource protection criterion is designed to ensure that the facility does not unnecessarily impact cultural and historic resources associated with the facility's lands and waters, including resources important to local indigenous populations. The application states the LIHI cultural and historic resources criterion in all ZOEs is satisfied by meeting alternative standard G-2.

License article 411 required implementing a PA with FERC, the ACHP and the SHPO. On January 18, 1995, the SHPO submitted a fully executed PA for the Project. On February 25, 1997, a CRMP was filed with FERC[55], which was approved on June 1, 1998.[56] EBH files an annual monitoring report on activities undertaken that may be subject to the CRMP.

The latest annual monitoring report for 2020 was filed on February 23, 2021.[57] The report stated that since the filing of the last report, there were no construction activities or repair activities subject to the CRMP and no ground disturbing activities had occurred.

According to the FEA[58], cultural resource studies in the area of potential effect (APE) identified the Bennetts Bridge dam, surge tank and powerhouse as eligible for listing on the National Register of Historic Places because of their contribution to the period of innovation and experimentation which characterized hydroelectricity between 1895 and 1920. During this period, the development was described in the Engineering Record as the next best source of waterpower in the state, after the Niagara River. No eligible features were identified at the Lighthouse Hill development.

Throughout the current LIHI certification period, the applicant acted in accordance with the CRMP and no compliance issues with cultural and historical resource protection standards have occurred. Therefore, the Project passes this criterion.

H. Recreational Resources

The goal of this criterion is to ensure that recreation activities on lands and waters controlled by the facility are accommodated and that the facility provides recreational access to its associated land and waters without fee or charge. The application states the LIHI recreation criterion in all ZOEs is satisfied by meeting alternative standard H-2.

License article 412 required implementation of a RP for submittal to FERC. On May 1, 1997, FERC approved the RP submitted on December 12, 1996. [59] This plan included:

- Constructing a parking area, picnic area, and canoe and car-top boating access at the Hogback Road area;
- Re-grading the boat launches and parking areas at the Falls Road Recreation facility at the west end of the Salmon River Reservoir;
- Expanding the boat launch and parking area at the Redfield site on the Salmon River Reservoir, and;
- Clearing trees at some of the recreation areas to improve scenic views and using the existing vegetation as a natural buffer to screen recreation sites from waterway users.

[55] https://elibrary.ferc.gov/eLibrary/filedownload?fileid=000ACBED-66E2-5005-8110-C31FAFC91712
[56] https://elibrary.ferc.gov/eLibrary/filedownload?fileid=0006F7CB-66E2-5005-8110-C31FAFC91712
[57] https://elibrary.ferc.gov/eLibrary/filedownload?fileid=15721563
[58] FERC license See page 57 - https://elibrary.ferc.gov/eLibrary/idmws/common/opennat.asp?fileID=8402048
[59] https://elibrary.ferc.gov/eLibrary/filedownload?fileid=001501EA-66E2-5005-8110-C31FAFC91712

On October 10, 2002, EBH filed a request to amend the RP to incorporate changes based on observed recreational use, On February 10, 2004, FERC approved an amended RP.[60] The amended RP stated:

- One picnic table would be added to the Bennetts Bridge tailrace day use boat launch and picnic area;
- The number of picnic tables would be reduced from ten to three at the Hog Back Road picnic area and car-top boat launch;
- Picnic tables and signage at all sites would be placed out once per year, and;
- One boat access and four fishing access signs would be removed from the Bennetts Bridge tailrace day use boat launch and picnic area.

All RP requirements were implemented by EBH which also provides free public access to the shoreline of the Lighthouse Hill Development across EBH's lands where Project facilities, hazardous areas and existing leases, easements, and private ownership do not preclude access.

Additionally, EBH supports five whitewater releases each year and posts the annual release schedules to their Safe Waters website[61]. The whitewater releases are provided as follows:

- One weekend in June at 400 CFS;
- Two weekends in July at 750 CFS;
- The first full weekend in August at 750 CFS, and;
- The first weekend in September at 750 CFS.

Throughout the current LIHI certification period, the Project has been in compliance with all requirements related to recreational use. My review found no issues pertaining to recreational resources compliance. Therefore, the Project passes this LIHI criterion.

[60] https://elibrary.ferc.gov/eLibrary/filedownload?fileid=01CDADED-66E2-5005-8110-C31FAFC91712
[61] https://safewaters.com/facility/42

VIII. RECOMMENDATION

A review of the certification application and supporting documentation, and a search of the FERC docket shows that the Project continues to satisfy the LIHI criteria as discussed in the sections above. EBH continues to voluntarily support the Salmon River Enhancement Fund established to finance and support NYSDEC proposed enhancements for the Salmon River basin. My recommendation is to unconditionally recertify the Project for a thirteen (13)-year term in accordance with Revision 2.05 of the LIHI 2nd Edition Handbook.

Gary M. Franc

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