Low Impact Hydropower Institute's (LIHI) Certification Review for Eastman Falls Hydroelectric Project

1. BACKGROUND

The Eastman Falls Hydroelectric Project (Project) is located in central New Hampshire in Merrimack and Belknap Counties, and in the city of Franklin and towns of Hill, Sanbornton, and New Hampton. The Project is located on the Pemigewasset River, approximately 1.5 miles downstream of the U.S. Army Corps of Engineers (USACE) Franklin Falls Flood Control Dam, and about one mile upstream of its confluence with the Winnipesaukee River.

The Project was originally constructed by the Pemigewasset Power Company in 1903, redeveloped by the Boston and Maine Railroad in 1910-1911, and further redeveloped by Public Service of New Hampshire (PSNH) in 1937 and 1983.

The Project's prior 30-year license was issued on August 25, 1987, with an effective date of January 1, 1988, expiring on December 31, 2017. The Project was issued a new license on April 20, 2017[1], by the Federal Energy Regulatory Commission (FERC) as Project #2457, effective January 1, 2018, one day after the termination of the prior license. The new 30-year license expires on December 31, 2047.

On July 7, 2018[2], FERC filed notice of approval of license transfer from PSNH to Hull Street Energy (HSE)[3]. The Project's hydroelectric facilities are operated by HSE's affiliate, Central Rivers Power NH, LLC (CRPNH)[4]. On January 16, 2019, FERC was notified that the Project changed its name from HSE Hydro NH Eastman Falls, LLC to CRP NH Eastman Falls, LLC.

The general Project area includes the Pemigewasset River from Sumner Island in the north to the Pemigewasset-Winnipesaukee River confluence in the south, and the lands immediately adjacent to the Pemigewasset River. The Project dam and powerhouses are located off North Main Street in Franklin, New Hampshire.

CRPNH submitted an application for certification of the Project on December 7, 2018. On January 10, 2019, LIHI notified CRPNH that the intake review for the Project was complete. The intake review found that only a small amount of supplemental information was needed. CRPNH supplied a revised application dated January 22, 2019. On February 13, 2019, I committed to perform the certification review for the Project.

[1] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14565890
[2] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14972884
[3] HSE Contact - Todd, Wynn; CEO Portfolio Companies, - 301-664-7701 - twynn@hullstreetenergy.com - 4920 Elm Street, Suite 205, Bethesda, MD 20814
[4] CRPNH Contact - Curtis R. Mooney - Manager, Regulatory Affairs – 603-744-8855 Ext. 2 - cmooney@centralriverspower.com - 59 Ayers Island Road, Bristol, NH 03222

2. PEMIGEWASSET RIVER BASIN

The Pemigewasset River basin is 65.0 miles in length, drains approximately 1,021 square miles and passes through the communities of Lincoln, North Woodstock, Woodstock, Thornton, Campton, Plymouth, Holderness, Ashland, Bridgewater, Bristol, New Hampton, Hill, Sanbornton, and Franklin (See Figure 1).

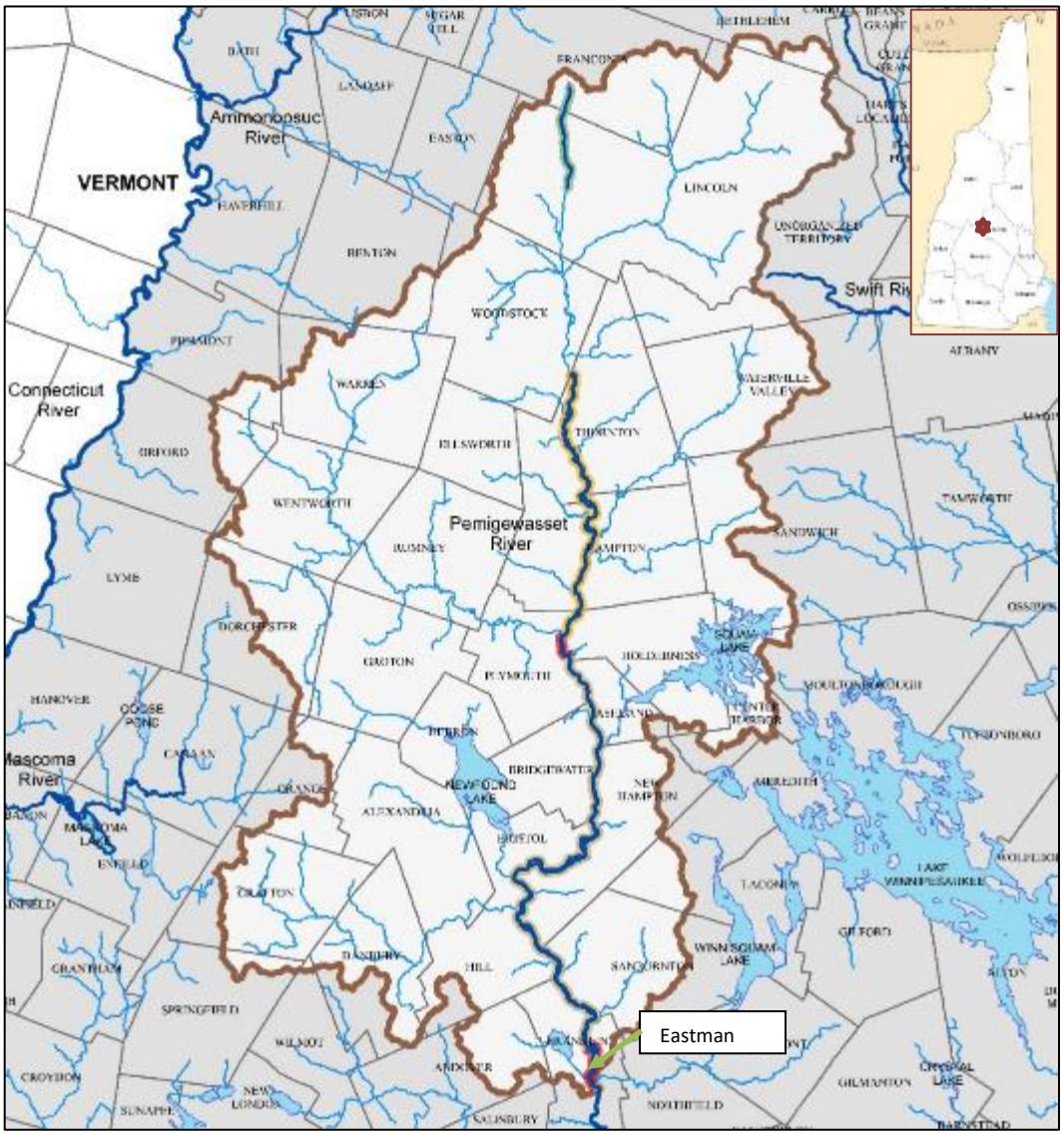

Figure 1 - Pemigewasset River Basin

The Pemigewasset watershed consists of over 1,100 miles of rivers and 17,000 acres of lake, pond, and reservoir area. The river originates at Profile Lake and descends over waterfalls in Franconia Notch, flows south through the White Mountains passing cascades in North Woodstock, and drops over Livermore Falls north of Plymouth. From Lincoln to Ashland, the river passes over gravel bars and attracts numerous boaters and fishermen. Below Ashland, the river is impounded by the Ayers Island Dam for over five miles. A short stretch of heavy whitewater is found below the dam, before the river reaches the impoundment zone for the Franklin Falls flood control reservoir. Below Franklin Falls the river flows into the Eastman Falls Dam

impoundment before joining the Winnipesaukee River in the center of Franklin to form the Merrimack River. The Merrimack River then flows through southern New Hampshire, northeastern Massachusetts and into the Atlantic Ocean.

Dams located upstream of Project include the Ayers Island Dam (FERC No. 2456) at river mile (RM) 125.5[5], owned by CRPNH and the USACE's Franklin Falls Dam at RM 118. Downstream dams include the Garvins Falls Dam (FERC No. 1893) at RM 86.8, part of the Merrimack River Hydroelectric Project, also owned by CRPNH.

3. PROJECT DESCRIPTION

The Eastman Falls Dam, located at RM 116.5 in the city of Franklin and towns of Hill, Sanbornton, and New Hampton, NH (Latitude: 43°26'51.36"N, Longitude 71°39'30.15"W) was originally constructed in 1903, redeveloped in 1910-1911, and further redeveloped in 1937 and 1983.

The Project consists of a spillway, a spillway waste gate and two single-unit powerhouses, and does not have a bypass reach (See Figure 2). The Project has an impoundment surface area of about 582 acres a normal pool elevation of 307.0 feet mean sea level (FTMSL) and a gross storage capacity of 4,570 acre-feet (ACFT). The impoundment extends nine miles upstream, through the USACE Franklin Falls Flood Control Dam at RM 118, to Sumner Island at RM 125.5. However, USACE flood control operations can result in difficult impoundment levels upstream and downstream of the Franklin Falls Dam.

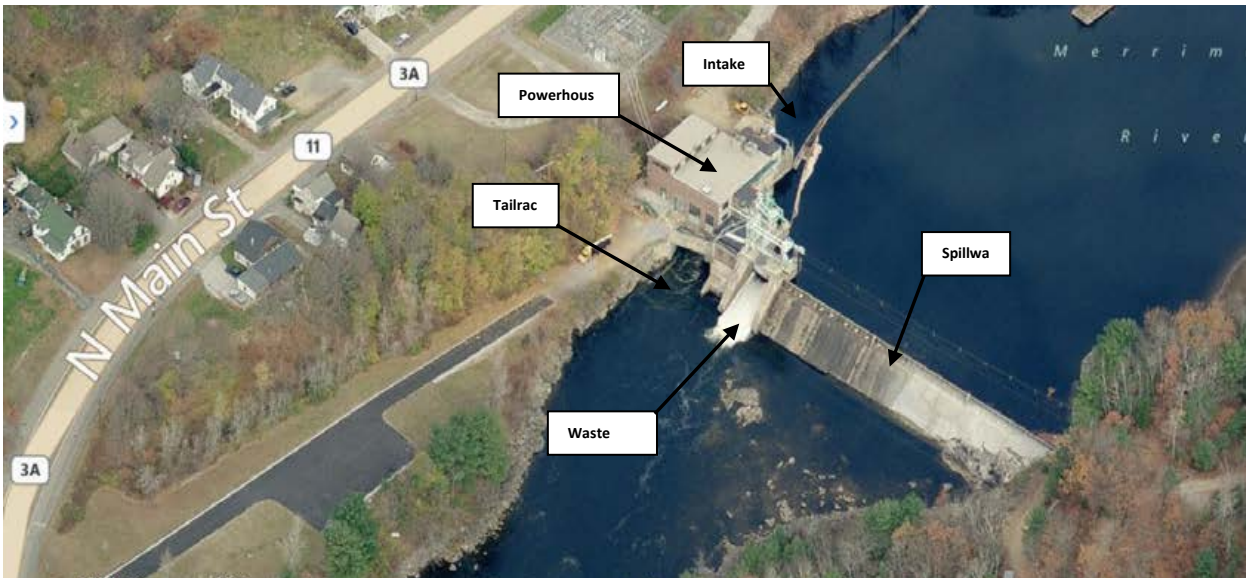

Figure 2 - View of Project Facilities

The ogee spillway is a concrete gravity structure approximately 341 feet long, with a maximum height of about 37 feet. Posttensioned anchors were installed in the spillway in 1999. The spillway crest is at elevation 301 FTMSL.

[5] River miles are measured from the month of the Merrimack River.

The spillway is equipped with 6-foot-high steel flashboards. The flashboard panels are hinged at the crest and supported on the downstream side by timber struts. A cable car system spans the spillway to allow for strut removal to lower the flashboard panels to increase spillway capacity during high flow events. The same system is used after high flows subside to raise the panels and reinstall the struts.

Looking upstream, a waste gate abuts the left side of the spillway and includes a 16-foot-high by 30-foot-wide steel slide gate. The gate sill is at elevation 292 FTMSL. The reinforced concrete waste gate structure is approximately 40 feet wide. In addition, the two powerhouses are located on the left bank of the river.

The Unit 1 powerhouse was built in 1937 and is approximately 29 feet long, 29 feet wide, and 34 feet high. Unit 1's intake has a head gate structure that is about 12.5 feet high by about 15 feet wide. Trashrack dimensions are 23.76 feet high by 17 feet wide and consist of 1/2-inch-wide bars spaced 4 inches on center for a clear spacing of 3.5 inches. The intake structure directs water to the turbine through a 21-foot-long, 12.5-foot by 12.5-foot reinforced concrete penstock. The bulkhead is about 40 feet high and 20 feet wide with a 1-foot-wide stop log slot that can be used to dewater the intake.

Four tail gate panels, each 20 feet by 5.5 feet, can be placed in the tailrace with a crane. With the panels in place and the head gate closed, pumps are used to dewater the penstock, unit and draft tube. The draft tube opening is approximately 23 feet wide by 14.5 feet high and is 60 feet in length from the turbine to the tailwater.

The Unit 2 powerhouse was originally constructed in 1910 and reconstructed in 1983. The Unit 2 powerhouse is integral with the intake and comprised of a reinforced concrete and masonry substructure with a concrete and brick superstructure. The built-up roof is supported by steel trusses. The majority of the concrete substructure was replaced, and the upstream portion of the roof was reconstructed. The Unit 2 powerhouse is approximately 88 feet long, 78 feet wide and 56 feet high.

The Unit 2 intake is integral with the powerhouse and is comprised of a reinforced concrete and masonry gravity structure with an 18-foot by 18-foot entrance opening. An electrically operated head gate is located within the powerhouse and is about 20 feet high by about 21 feet wide. Trashracks consist of two 12-foot 4-inch-wide by 9-foot 4-inch-high panels with 1/2-inch-wide bars spaced 4 inches on center for a clear spacing of 3.5 inches. The intake stop log panel is about 20 feet 10 inches high and 22 feet 5 ½ inches wide, that can be lowered into the stop log frame of the bulkhead to dewater the intake via pumping.

The draft tube opening is approximately 23 feet wide by 14.5 feet high and is 60 feet in length from the turbine to the tailwater opening. The tail gate panel is 15.5 feet high and 24.5 feet wide and has a large pump installed within it. When the head gate and tail gates are closed the pump is turned on to dewater the intake and draft tube.

The river below the Project boundary is free-flowing to its confluence with the Winnipesaukee River, about one mile downstream. The normal tailwater elevation is 273.0 FTMSL.

Turbine 1 was installed in 1937. Turbine 1 is a S. Morgan Smith Kaplan vertical-type turbine with 33 feet of head, a rated capacity of 1,950 kW, with a maximum flow of 850 cubic feet per second (CFS) and a minimum flow of 250 CFS. The turbine is coupled to a General Electric generator rated at 1,800 kW.

Turbine 2 was installed in 1983. Turbine 2 is a Dominion Bridge-Sulzer Kaplan horizontal-type turbine with 33 feet of head, a rated capacity of 4,260 kW, with a maximum flow of 1,930 CFS and a minimum flow of 700 CFS. The turbine is coupled to a Parsons Peebles generator rated at 4,600 kW.

Major maintenance and construction items accomplished include: painted flashboards and replaced flashboard seals in 2014; replaced fish passage louver line in 2012; and resurfacing of the spillway (2007 and 2008).

The Project operates remotely in a run-of-river (ROR) mode such that impoundment fluctuations do not exceed 0.2 feet above or below the impoundment's normal operating elevation (NOE) of 307.0 FTMSL with flashboards installed. The generating units are normally operated from CRPNH's Control Center located in Philadelphia, Pennsylvania. However, both units are capable of local operation. Manual operations and maintenance of the Project are performed by CRPNH staff. Daily logs of pond level, flow, and outages are maintained electronically for the Project.

Turbine 1 can operate in a range from a minimum flow of 250 CFS to a maximum flow of 850 CFS, and turbine 2 operates from a minimum flow of 700 CFS to a maximum flow of 1,930 CFS. Combined, the Project turbines operate from a minimum flow of 250 CFS to maximum flow of 2,780 CFS.

When inflow is below 250 CFS, no power is generated. CRPNH continues to maintain ROR operations by passing flows through the waste gate or as spill over the dam.

At flows between 250 CFS to 700 CFS, inflow is passed through turbine 1. At flows greater than 700 CFS and below approximately 1,830 CFS, turbine 2 is brought on line and turbine 1 is shut down. Once inflows exceed 1,830 CFS, turbine 1 is once again brought back on line. For inflows from 1,830 CFS up to 2,780 CFS, both turbines 1 and 2 operate.

The waste gate operates to pass flows in excess of the hydraulic capacity of the turbines (2,780 CFS) to minimize overtopping of the flashboards. When river flows exceed 2,780 CFS, the waste gate is opened to manually maintain the 6-foot level. As inflows continue to rise, the flashboards are lowered to help reduce head pond levels. During these periods, when the waste gate is operated, the pond level is maintained within 0.5 feet of the impoundment's NOE. For prolonged periods of inflows in excess of 2,780 CFS, the impoundment is maintained within 1.0 foot of the NOE when the flashboards are lowered and/or raised due to changing river flow.

Regarding flashboard operation, flashboard struts are removed and flashboards are lowered to pass increased flows before overtopping exceeds 1 foot. There are three bays of flashboards. One lowered bay of flashboards passes approximately 5,300 CFS at a 6-foot pond level. Flashboard struts are designed to fail at 2.0 feet of overtopping so that the full spillway capacity is available during high flow conditions.

During low and normal river flow conditions, the USACE Franklin Falls Dam typically passes inflow, resulting in no effect on Project operation. During periods of high inflows, the USACE may hold back inflow for flood control within its impoundment. If high inflows continue, outflow from the Franklin Falls Dam become necessary.

The USACE typically contacts CRPNH to provide advance notice on how much water will be released during flood operations. The maximum discharge capacity of Franklin Falls Dam is 18,000 CFS. When outflow from Franklin Falls Dam is less than 14,000 CFS, CRPNH lowers one bay of flashboards. For

releases between 14,000 CFS and 18,000 CFS, two bays of flashboards are lowered. As flows begin to recede, CRPNH again raises the flashboards.

The Project has a drainage area of about 1,003 square miles (SQMI). Project inflows can be estimated using U.S. Geological Survey (USGS) gage 01081500, located on the Merrimack River at Franklin Junction, with a drainage area of 1,507 SQMI (GAGE1) and USGS gage 01011000, located on the Winnipesaukee River at Tilton, with a drainage area of 471 SQMI (GAGE2), respectively.

Subtracting GAGE2 flows from GAGE1 flows results in an estimate of flows downstream of the Project just below the confluence with the Winnipesaukee River. This flow represents a contributing drainage area of (1,507 – 471) or 1,036 SQMI. Multiplying these flows by (1,003/1,036) or 0.986 estimates inflows into the Project. Based on this approach, the period of record (POR) Project inflow from Jan 1, 1937 through Feb 15, 2019, results in an average annual inflow of 2,087 CFS.

The Project's total installed capacity of 6.4 MW produces an estimated average annual generation (AAG) is 27,871 megawatt-hours (MWh), which corresponds to an annual plant factor of 49.7%.

4. REGULATORY SUMMARY

Public Service of New Hampshire (PSNH) received a new FERC license No. 2457 for the Project, issued on April 20, 2017[6], effective January 1, 2018 and expiring on December 31, 2047. On July 7, 2018[7], FERC filed a notice of approval of license transfer from PSNH to HSE.

On January 16, 2019, FERC was notified that the Project changed its name from HSE Hydro NH Eastman Falls, LLC to CRP NH Eastman Falls, LLC.

A. Summary of Project Licensing and Agency Consultation Process

The following important correspondence occurred leading up to the FERC licensing for the Project:

- On December 18, 2015, PSNH filed an application for a new license with FERC for the Project[8].
- On April 26, 2016[9], FERC accepted the application for filing and stated that it was ready for environmental analysis. FERC solicited motions to intervene to protest and/or provide comments and recommendations within 60 days.
- On June 13, 2016[10], US Fish and Wildlife Service (USFWS) and Department or Interior (USDOI) filed motions to intervene.
- On June 21, 2016[11], the Upper Merrimack River Local Advisory Committee (UMRLAC) filed a motion to intervene requesting full party status.
- On June 22, 2016[12], USDOI filed comments and recommendations along with a request for reservation of authority to prescribe fishways.

[6] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14565890
[7] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14972884
[8] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14077522
[9] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14218938
[10] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14274800
[11] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14280117
[12] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14281684

- On June 28, 2016[13], New Hampshire Fish and Game Department (NHFGD) filed a motion to intervene.
- On August 3, 2016[14], PSNH filed a response to USDOI and USFWS comments.
- On October 24, 2016[15], FERC filed a notice of the availability of Environmental Assessment (EA) for the Project.
- On October 25, 2016[16], FERC responded to USDOI pertaining to inconsistencies in their recommendations and results within the FERC EA.
- On November 21, 2016[17], PSNH provided supplemental information to FERC pertaining to the EA.
- On November 23, 2016, UMRLAC[18] and USFWS[19] filed comments on the FERC EA.
- On December 20, 2016[20], New Hampshire Department of Environmental Services (NHDES) submitted the approved 401 Water Quality Certification (WQC) for the Project.
- On January 23, 2017[21], USFWS filed supplemental information on prescription for fishways.
- On December 29, 2017[22], PSNH submitted a request to transfer the Project's license to HSE.
- On January 23, 2018[23], FERC filed a notice of license transfer to HSE.

B. Compliance Issues

My review of the FERC docket found the following compliance related correspondence:

- On March 21, 2018, the Project's Upstream American Eel Passage Plan[24] was filed with FERC.
- On May 4, 2018, supplemental information on Invasive Species Management and Monitoring Plan[25] was filed with FERC.
- On May 8, 2018[26], supplemental information on the Eel Passage Implementation Schedule was filed with FERC.
- On May 9, 2018, FERC issued an order modifying and approving the plan for evaluation of upstream American Eel passage[27].
- On June 26, 2018, the Project's Water Quality Monitoring Plan (WQMP)[28] and Operations Compliance Monitoring and Maintenance Plan (OCMMP)[29] were filed with FERC.
- On August 8, 2018[30], FERC filed its Environmental Inspection Report (EIR) for the Project conducted on June 21, 2018.
- On August 14, 2018, HSE notified FERC of a deviation from ROR operations at the Project.
- On August 23, 2018[31], FERC informed HSE that the ROR deviation occurring on July 17, 2018 is a violation of the license. See section 6A - LIHI Criterion-Flows for details.

[13] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14291756
[14] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14322117
[15] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14381615
[16] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14382708
[17] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14405654
[18] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14408334
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[20] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14442394
[21] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14476061
[22] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14787836
[23] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14803666
[24] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14846011
[25] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14910210
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[27] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14913432
[28] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14957290
[29] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14957291
[30] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14994696
[31] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=15002620

- On October 11, 2018[32], FERC notified HSE that the OCMMP filed on June 26, 2018, required documentation of approval of the plan by NHDES.
- On October 30, 2018[33], FERC issued an order approving the American Eel passage implementation schedule.
- On December 20, 2018, HSE submitted the Project's annual upstream American Eel passage survey report[34] and the Fishway Operations and Maintenance Plan[35] for American Eel to FERC.
- On February 7, 2019[36], FERC issued an order approving the WQMP.

5. ZONES OF EFFECT (ZOEs)

The Project has two ZOEs (See Figure 3). The Applicant has defined ZOEs from upstream to downstream and numbered them consecutively.

The applicant defines Zone 1 as the Impoundment from RM 116.5 to RM 125.5[37]. This definition includes the USACE's Franklin Falls Dam at RM 118.0 and its impoundment upstream to RM 125.5. The applicant states that this delineation was chosen because the Project's impoundment backs upstream this far. However, this backwater will only occur at the discretion of the USACE's operation at Franklin Falls. Therefore, for my review I will be redefining ZOE 1 from RM 116.5 upstream to the Franklin Falls Dam at RM 118.0.

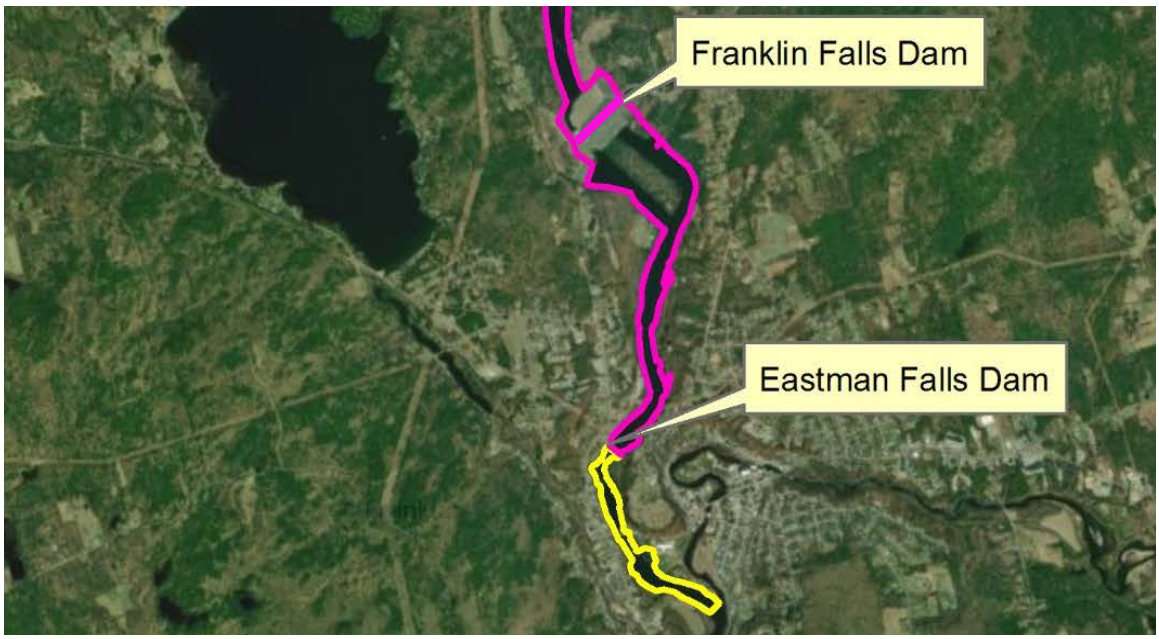


Figure 3 - Project ZOEs

Zone 2 is defined as the river from the Project downstream to the confluence of the Pemigewasset and Winnipesaukee rivers (RM 116.5 to RM 115.5)[38].

[32] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=15065846
[33] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=15085936
[34] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=15124413
[35] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=15124402
[36] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=15158153
[37] Pink colored boundary lines.
[38] Yellow colored boundary lines.

The ZOE alternative standards selected are shown in Figure 4.

IMPOUNDMENT ZOE

	CRITERION	ALTERNATIVE STANDARDS				
		1	*2*	*3*	*4*	*Plus*
A	Ecological Flow Regimes	X				
B	Water Quality		X			
C	Upstream Fish Passage	X				
D	Downstream Fish Passage		X			
E	Watershed and Shoreline Protection	X				
F	Threatened and Endangered Species Protection	X				
G	Cultural and Historic Resources Protection	X				
H	Recreational Resources		X			

DOWNSTREAM ZOE

	CRITERION	ALTERNATIVE STANDARDS				
		1	*2*	*3*	*4*	*Plus*
A	Ecological Flow Regimes		X			
B	Water Quality		X			
C	Upstream Fish Passage		X			
D	Downstream Fish Passage	X				
E	Watershed and Shoreline Protection	X				
F	Threatened and Endangered Species Protection	X				
G	Cultural and Historic Resources Protection	X				
H	Recreational Resources		X			

Figure 4 - ZOE Alternative Standards

6. LIHI CERTIFICATION PROCESS

CRPNH submitted an application for certification of the Project on December 7, 2018. On January 10, 2019, LIHI notified CRPNH that the intake review for the Project was complete. The intake review found that only a small amount of supplemental information was needed. CRPNH supplied a revised application dated January 22, 2019. On February 13, 2019, I committed to perform the certification review for the Project.

A. Comment Letters

On February 19, 2019, LIHI opened the public comment period for the application. Comments must be received on or before 5 pm Eastern time on April 20, 2019 to be considered. No comments were received during the comment period.

B. Agency Correspondence

On February 18, 2019, I emailed contacts[39] listed in the Project application as knowledgeable about the Project stating, *"… I am the LIHI reviewer tasked with determining whether the Eastman Falls Hydroelectric Project (FERC No. 2457) should be LIHI recertified. I am emailing you today because you have been identified in the application by the applicant as agency contacts familiar with the project. I would appreciate your perspective regarding the project's proposed operation with regard to satisfying its environmental obligations (FERC articles, MOUs, etc.). Without your input my review can only be based on the documents found in the application and FERC docket. Thank you for your time in this matter …"*

On February 19, 2019, LIHI[40] emailed contacts listed in the Project application as knowledgeable about the Project stating, *"…You may have already received this notice if you are on the LIHI email list. However, you were also identified as an agency contact on the LIHI certification application recently submitted by Central Rivers Power NH for the Eastman Falls Hydroelectric Project. The application reviewer, Gary Franc (copied here), may be in contact with you if he has questions about the project or wishes to clarify any aspects of the LIHI application …"*

The LIHI application can be found at LIHI's web address – https://lowimpacthydro.org/eastman-falls-project-complete-application-received/

On February 19, 2019, I had a phone conversion with Gregg Comstock with the NHDES regarding the agency's position on the OCMMP. Mr. Comstock stated the agency is aware of FERC's and CPRNH's requests for comment, however, until more pressing FERC relicensing issues on other Projects are completed, their review will be delayed. Mr. Comstock believes the NHDES can respond on the OCMMP within the LIHI comment period ending on April 20, 2019. The agency did not later comment on the application. On March 11, 2019 USFWS provided an email indicating that the Project is in compliance with the FERC license and a copy of the Project's eel passage implementation schedule previously filed with FERC.

7. CERTIFICATION REVIEW

This section contains my certification review of the Project with regard to the LIHI Certification criteria. As part of my review, I conducted a FERC e-library search to verify claims in the certification application. My review concentrated on the period from December 2015, the start of FERC relicensing, through February 2019, for FERC docket number P-2457.

A. LIHI Criterion-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. The application states that the Project satisfies the LIHI flows criterion in ZOE 1 by meeting alternative standard A-1[41] and in ZOE 2 by meeting

[39] Carol Henderson - Carol.Henderson@wildlife.nh.gov ; Gregg Comstock - gregg.comstock@des.nh.gov ; John Spain - John.Spain@ferc.gov ; Julianne Rosset - julianne_rosset@fws.gov ; Nadine Miller - Nadine.Miller@dcr.nh.gov.

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

[41] NA.

alternative standard A-2[42]. ZOE 1 is the Project impoundment. ZOE 2 is the reach downstream of the Project. There is no bypassed reach at the Project.
Inflow is typically maintained by pond level control at a steady impoundment level 6.0 feet above the crest of the dam (top of flashboards) at an elevation of 307.0 FTMSL. A 6-foot pond level is desired to maximize head for generation. The pond level control typically maintains this level within +/- 0.2 feet.

CRPNH monitors generation, impoundment levels, and inflows at the Project. A pressure-sensitive headwater sensor is in place at the dam and monitors impoundment levels. Records of operations, inflows, and water levels are maintained electronically. These records can be retrieved and be made available upon request. CRPNH provide copies of monitoring data to the FERC, NHDES, USFWS, and NHFGD to verify compliance.

In accordance with Condition E-11 of the WQC and Article 401 of the FERC license, the Operation Compliance Monitoring and Maintenance Plan (OCMMP)[43] was filed with FERC on June 26, 2018. The plan was distributed to the NHDES, NHFGD, and the USFWS on April 10, 2018 for review and comment. CRPNH emailed the NHDES on January 15, 2019, asking about the status of review and formal approval of the OCMMP (Appendix A, page A-2). No response has been received at this time.

The USFWS, NHFGD and NHDES concur with maintaining the impoundment at the normal operating elevation (NOE) with allowable pond fluctuations of plus or minus 0.2 feet. This operation helps protect the flora and fauna in the littoral and riparian zones of the impoundment. After high flow events, where flashboards are raised back to the 6.0-foot height, the impoundment is refilled whereby 90 percent of the inflow is passed downstream and remaining 10 percent is used to refill the impoundment. This procedure minimizes dramatic fluctuations in downstream flow.

Although the NHFGD conducts an extensive fish stocking program, no agency recommendations were received during FERC relicensing specific to fish and wildlife habitat in the impoundment.

The terrestrial habitat of the narrow border of forested land on the river's west bank along the Project's entire boundary area (See Figure 5 below) is limited in extent and quality due to the density and close infringement upon the river by adjacent residential, commercial and industrial structures.

The terrestrial habitat of the wider border of forested land of the river's east bank between Franklin Falls Dam and the Route 3 highway bridge is somewhat more extensive and of higher quality since it is less infringed upon and impacted by adjacent structures. This habitat could support indigenous small bird and mammal species and some of the smaller upland game and furbearer species common to northern New England and central New Hampshire. Larger game species, such as the Whitetail Deer, are restricted to the habitat of the river's east bank.

Many of the wildlife species occurring within the vicinity of the Project are likely to be present year-round. Other species may migrate seasonally, using separate and distinct breeding and wintering areas. The range of these movements varies significantly among species.

[42] Agency recommendation.
[43] https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14957291

Many migratory avian species using the Project vicinity during temperate seasons are absent from the region in winter. Other species tend to display more moderate seasonal shifts of habitat usage, using distinct areas within the Project vicinity and surrounding region in summer and different distinct areas in winter.

On August 14, 2018, CRPNH reported a ROR deviation occurring on July 17, 2018[44]. The Project's turbines had been offline for six days due to low inflows. Dispatchers were remotely managing the waste gate to maintain ROR operations when an operator inadvertently pulsed the waste gate closed at 12:03 AM. It was not until a 6:30 AM shift change that the error was identified. The new dispatcher immediately opened the gate and restored flow at 6:33 AM. No stranded or distressed fish were observed downstream of the dam or the tailrace.

Figure 5 – Close up River View

CRPNH verbally notified USFWS, NHDES, and NHFGD on July 17, 2018 and provided a follow-up email detailing the incident on July 19, 2018. CRPNH's Control Center reviewed the incident with their dispatchers and reaffirmed the importance of maintaining ROR operations, especially during periods of low river flow. On August 23, 2018, FERC deemed the ROR deviation incident a license violation[45]. Given the isolated, short-term nature of the incident and CRPNH's response, this deviation does not preclude LIHI certification.

If CRPNH provides LIHI with the NHDES's review of the OCMMP once received, and no major outstanding issues are found in NHDES's review, it is my recommendation that the Project is in compliance with resource agency conditions and recommendations issued regarding flow conditions and impoundment fluctuation, and therefore satisfies the flows criterion with this condition.

B. LIHI Criterion-Water Quality

The goal of this criterion is to ensure water quality is protected in water bodies directly affected by the facility, including downstream reaches, bypassed reaches, and impoundments above dams and diversions. The Applicant states that the Project satisfies the LIHI water quality criterion in ZOEs 1 and 2 by meeting alternative standard B-2[46].

Based upon a review of the 2016 Section 303(d) Surface Water Quality List, the river reaches within the project boundary are not considered impaired or listed on the State's 303d list.

The Project's WQC[47] was issued by the NHDES on December 15, 2016. Section B of the document states,

[44] https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14997856
[45] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=1500262
[46] Agency recommendation.
[47] https://www.des.nh.gov/organization/divisions/water/wmb/section401/documents/final-wqc-%202016-ferc-001.pdf

"*Based on the facts, findings and conditions noted below, the New Hampshire Department of Environmental Services has determined that there is reasonable assurance that construction and operation of the Activity will not violate surface water quality standards*".

In accordance with Condition E-13 of the WQC and Article 401 of the FERC license, the WQMP[48] was filed for FERC review and approval on June 26, 2018. The plan was submitted to the NHDES for review and approval on April 3, 2018. NHDES comments were received on June 15, 2018 and were incorporated into the WQMP. On February 7, 2019[49], FERC issued an order approving the WQMP.

My review found no license deviations nor any issues pertaining to the Project's water quality compliance. It is my recommendation that the Project meets the water quality criterion.

C. LIHI Criterion-Upstream Fish Passage

The goal of this criterion is to ensure safe, timely and effective upstream passage of migratory fish so that the migratory species can successfully complete their life cycles and maintain healthy, sustainable fish and wildlife resources in areas affected by the facility. The applicant states that the Project satisfies the LIHI upstream fish passage criterion in ZOE 1 by meeting alternative standard C-1 and in ZOE 2 by meeting alternative standard C-2.

No agencies have recommended upstream migratory or riverine fish passage facilities for the Project. Due to diminished salmon returns and funding cuts, federal funding for New Hampshire's Atlantic Salmon Brood Stock Fishery program ended in 2013. On September 5, 2013, USFWS decided to end its support of the Merrimack River Salmon Restoration Program. Autumn passage for salmon was deemed not necessary at the Project. Spring downstream passage through 2015 was continued to allow for any hold over Atlantic salmon smolts to migrate down river. NHFGD stated that the autumn downstream passage for adults is no longer necessary and that the last of any hold over smolts would have left the system by the spring of 2016.

However, with regard to American eel, by letter filed January 23, 2017[50], USDOI provided section 18 prescriptions that require CRPNH to:

- Provide upstream and downstream passage for American eel at the Eastman Falls dam;
- Prepare a fishway operation and maintenance plan (FOMP), and;
- Prepare a fishway effectiveness monitoring plan (FEMP).

Once upstream migrating eels enter the impoundment, no further barrier to upstream eel movement exists. Eels will have access to 14 miles of rearing habitat on the Pemigewasset River between Eastman Falls Dam and Ayers Island Dam. Because eels migrate downstream to the ocean to complete their life cycle, fishways are also required to provide downstream passage for eels.

On May 9, 2018, FERC issued an order modifying and approving the plan for evaluation of upstream American eel passage (UAEPP)[51]. The order:

[48] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14957290
[49] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=15158153
[50] https://elibrary-backup.ferc.gov/idmws/common/opennat.asp?fileID=14476232
[51] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14913432

- Approved the UAEPP submitted on March 21, 2018[52] that is designed to install and operate an upstream eel trap in the area immediately downstream of the dam that will be operated annually from May 1 to October 30 in 2018 and 2019;
- Requires CRPNH to file with FERC, by March 1, 2020, a permanent upstream American eel passage design detailing the installation and operation plan, developed in consultation with the USFWS and NHFGD, and approved by the USFWS.

In addition, on May 8, 2018[53], supplemental information on the Eel Passage Implementation Schedule (EPIS) was filed with FERC proposing new due dates that match the schedule agreed to with USFWS. On October 30, 2018[54], FERC issued an order approving the suggested American eel passage implementation schedule. The schedule includes:

- Provide a FEMP to evaluate upstream eel passage, prepared in consultation with USFWS and NHDES and filed with FERC by June 30, 2018. This item was completed with the March 21, 2018 filing discussed above.
- Provide a FOMP to describe operation, maintenance, and emergency procedures for a yet undefined fish passage facility by January 1, 2019. This item was completed with CRPNH's filing on December 20, 2018[55]. The FOMP:
    - Needs to be signed by the Project's operations manager after review with operation personnel by December 31 of each year;
    - Requires filing an annual report that details implementation of the FOMP, including any deviations from the FOMP. This item was completed with CRPNH's filing of the Project's annual upstream American eel passage survey report on December 20, 2018[56] ;
    - By March 15 of each year, CRPNH will meet with the USFWS to discuss the FOMP and FEMP.

Given the ongoing nature of upstream passage for American eel, status updates pertaining to this issue should be incorporated as part of CRPNH's annual compliance letter to LIHI. Assuming that no major issues develop in implementing eel passage, it is my recommendation that the Project meets concerns for upstream passage of fish and satisfies the upstream fish passage criterion.

D. LIHI Criterion-Downstream Fish Passage

To goal of this criterion is to ensure safe, timely and effective downstream passage of migratory fish and for riverine fish such that the facility minimizes loss of fish from reservoirs and upstream river reaches affected by facility operations.

The Applicant states that the Project satisfies the LIHI downstream fish passage criterion in ZOE 1 by meeting alternative standard D-2 and the LIHI downstream fish passage criterion in ZOE 2 by meeting alternative standard D-1.

No agencies have recommended downstream riverine fish passage facilities for the Project. The most recent fish surveys were conducted in 2005 through a joint venture between the USACE and NHFGD in several tributaries that discharge into the Project's impoundment. Surveys in near proximity to the Project were

[52] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14846011
[53] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14911807
[54] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=15085936
[55] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=15124711
[56] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=15124402

conducted in Salmon Brook (RM 119.5), Weeks Brook (RM 120.5), and Knox Brook (122.5) in the town of Sanbornton, NH (See Table 1).

TABLE 1 - FISH COLLECTED IN SURVEYS CONDUCTED IN THREE TRIBUTARIES TO THE PEMIGEWASSET RIVER LOCATED IN SANBORNTON, NH (2005)

		NUMBER COLLECTED		
COMMON NAME	**SCIENTIFIC NAME**	**SALMON BROOK**	**WEEKS BROOK**	**KNOX BROOK**
Brown bullhead	*Ameiurus nebulosus*	1	1	82
Blacknose dace	*Rhinichthys atratulus*	5	45	0
Burbot	*Lota*	0	1	5
Creek chub	*Semotilus atromaculatus*	0	1	11
White sucker	*Catostomus commersoni*	32	5	8
Brook trout	*Salvelinus fontinalis*	0	8	5
Fallfish	*Semotilus corporalis*	101	3	17
Golden shiner	*Notemigonus crysoleucas*	0	3	0
Largemouth bass	*Micropterus salmoides*	15	0	0
Longnose sucker	*Catostomus*	0	3	5
Longnose dace	*Rhinichthys cataractae*	48	0	0
Slimy sculpin	*Cottus cognatus*	0	34	52
Total		202	104	185

These surveys documented several species, in addition to those documented in earlier surveys conducted in the main stem that included blacknose dace, burbot, creek chub, brook trout, largemouth bass, longnose sucker, and longnose dace.

As defined in the October 30, 2018[57], FERC order approving the suggested American eel passage implementation schedule, regarding downstream eel passage, CRPNH needs to:

- Provide by December 31, 2019, a plan for interim downstream eel passage measures, implemented no later than August 15, 2020;
- Provide a plan for permanent downstream eel passage and protection at the Project, in consultation with resource agencies by January 1, 2025;
- Provide a Downstream Fishway Effectiveness Monitoring Plan (DFEMP) to study effectiveness of downstream passage by February 15, 2025. CRPNH will submit yearly interim study reports to the NHDES by February 15 of each study year. Final study reports to be submitted to the NHDES within 6 months after study completion, and;
- Construct permanent downstream passage faculties at the Project by August 15, 2025.

Given the ongoing nature of downstream passage for American eel, status updates pertaining to this issue should be incorporated as part of CRPNH's annual compliance letter to LIHI. Assuming that no major issues develop in implementing eel passage, it is my recommendation that the Project meets concerns for downstream passage of fish and satisfies the downstream fish passage criterion.

[57] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=15085936

E. LIHI Criterion-Shoreline and Watershed Protection

The Watershed Protection criterion is designed to ensure that sufficient action has been taken to protect, mitigate and enhance environmental conditions on shoreline and watershed lands associated with the facility. The applicant states the LIHI shoreline and watershed protection criterion in ZOEs 1 and 2 are satisfied by meeting alternative standard E-1.

The majority of the lands surrounding the Project are managed by the USACE as part of their operation of the Franklin Falls Flood Control Project.

As required by Article 401 of the FERC License and Condition E-12(a) of the WQC, an Invasive Species Management and Monitoring Plan (ISMMP) was filed with FERC on May 4, 2018[58]. Activities associated with the ISMMP were:

- Field surveys were conducted in Project waters and lands for the approximate nine-mile segment of the Pemigewasset River, extending upstream to Sumner Island. The surveys were performed during the peak growing season. In addition to completing a reconnaissance survey of the impoundment shoreline, the survey investigated the developed areas near the Project's facilities and parking/recreation areas that could act as potential sources for invasive species to enter and establish;
- A site visit was also conducted on July 13, 2015, with a representative of the NHDES's Exotic Species Program to verify milfoil findings. Four terrestrial and one aquatic invasive species were documented in the Project impoundment. Terrestrial invasive species included Japanese knotweed (*Polygonum cuspidatum*), Multiflora rose (*Rosa multiflora*), Purple loosestrife (*Lythrum salicaria*), and autumn olive (*Elaeagnus umbellata*). Variable-leaf milfoil (*Myriophyllum heterophyllum*) was identified at five locations in shallow littoral habitats. The investigators also recorded 13 locations of Japanese knotweed patches above the waterline occurring in small discrete clusters.

CRPNH mows the facility footprint and trims shrubs and herbaceous vegetation at the downstream recreational access facility and areas adjacent to the existing structures. Project grounds are maintained to prevent the introduction and spread of terrestrial exotic and invasive vegetation species.

No terrestrial plants on the New Hampshire Department of Agriculture, Markets, and Food Prohibited Invasive Plan Species List or those identified in the Invasive Plant Atlas of New England have been planted within the bounds of the Project.

Lastly, no shoreline management requirements were recommended by agencies for the Project.

My review found no license deviations nor any issues pertaining to the Project's watershed protection compliance. Based on my review, it is my recommendation that the Project satisfies the shoreline and watershed protection criterion.

[58] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14910210

F. LIHI Criterion-Threatened and Endangered Species

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 applicant states the LIHI Threatened and Endangered Species criterion is satisfied in ZOEs 1 and 2 by meeting alternative standard F-1.

In a letter dated June 22, 2016[59], USDOI states that suitable habitat for the federally threatened northern long-eared bat exists within and adjacent to the Project area. The FERC EA found while there is northern long-eared bat habitat within and adjacent to the Project area, northern long-eared bats are not known to inhabit the Project area. In addition, there are no measures included in the FERC license that would affect northern long-eared bat habitat.

On November 8, 2018, an IPaC review was conducted to see if any updated species information was available for the Project area. No new species were listed (See Appendix A page A-3).

The brook floater (*Alasmidonta varicosa*) mussel is a freshwater riverine species known to occur downstream of the Project. The species is listed as an endangered species in the State of New Hampshire. No other state-listed species are present at the Project. Pursuant to the FERC approved Revised Study Plan (RSP)[60], dated December 11, 2013, a Brook Floater Mussel Study was conducted from August 12, 2013 through August 16, 2013 (See Appendix A page A-**Error! Bookmark not defined.**). The study found:

- Brook floater specimens were found at several locations where suitable habitat was found;
- Brook floater was the second most abundant species collected during the survey while the numerically dominant species found was eastern elliptio;
- Since the Project operates as ROR, no adverse effects are anticipated;
- No agency recommendations for protection or monitoring measures were identified in relicensing of the Project.

My review found no license deviations nor any issues pertaining to the Project's threaten and endangered species compliance It is my recommendation that the Project satisfies the threatened and endangered species protection criterion.

G. LIHI Criterion-Cultural Resource Protection

The cultural resource protection criterion is designed to ensure that the Project does not negatively impact approved state, provincial, federal, and recognized tribal plans designed for the protection, enhancement and mitigation to cultural and historic resources. The applicant states the LIHI cultural and historic resources criterion in ZOEs 1 and 2 is satisfied by meeting alternative standard G-1.

Articles 405 and 406 of the FERC license require CRPNH to consult with the New Hampshire State Historic Preservation Commission (SHPO) prior to implementing any Project modifications not specifically authorized by the license, or if any unknown cultural resources are discovered during Project operations.

[59] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14281684
[60] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13423497

There are no federally recognized tribes currently in the Project area. Historically, the area between the Pemigewasset and Winnipesaukee Rivers was occupied by the Algonquin tribe. The rivers provided ample food sources as shad, salmon, and alewives were plentiful. These fish also served to attract terrestrial predators, such as bears and deer, which could be hunted for additional sources of food and resources. Trails, campsites, and tools of the Algonquians have been discovered along the rivers and serve as historical artifacts.

Research indicates there are a number of historical and archeological resources within the vicinity of the Project area, but none contained within the Project boundary. A few sites within the vicinity of the Project area have been listed on the National Register of Historic Places (NRHP), including:

- The Daniel Webster family home site in West Franklin which was originally built in 1829 and added to the NRHP in 1974;
- The Sulphite Bridge is located ½ mile east of Franklin Falls. Originally constructed in 1896 and added to the NRHP in 1975, the "upside-down covered bridge" is the only deck-covered railroad bridge remaining in the United States;
- Franklin Falls Historic District was added to the NRHP in 1982;
- The Rumford House originally constructed 1732 in Concord, NH, was moved to Franklin, NH in 1925, and listed on the NRHP in April 2011.

The Project dam was constructed as a power source in 1903 by the Pemigewasset Power Company. Powerhouse 1 was built in 1937, while Powerhouse 2, originally built in 1910, was retrofitted in 1983. By letter dated May 8, 2012, filed as part of the FERC license application, the New Hampshire SHPO indicated that the Project facilities may be eligible for listing on the National Register.

The SHPO concluded that relicensing of the Project will not have any impacts on properties or districts that are listed or may be eligible for the National Register, nor on properties of known or potential architectural, historical, archaeological, or cultural significance. The FERC EA states that because there are no known cultural resources within the Project's area of potential effect and no changes to the Project's features or operation are proposed, issuing a subsequent license for the Project would have no adverse effect on historic properties.

No construction or operation activities requiring land disturbing activities have occurred since 2012. While the Project has no adverse effect on known historic properties, cultural resources could be discovered during the course of operating or maintaining the Project. If cultural resources are inadvertently discovered during operation of the Project, CRPNH will consult with the SHPO to determine the need for any cultural resource studies or measures. If no measures are needed, CRPNH will file documentation of its consultation.

My review found no license deviations nor any issues pertaining to the Project's cultural and historical resources protection compliance. It is my recommendation that the Project satisfies the cultural and historic resources protection criterion.

H. LIHI Criterion-Recreation

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 applicant states the LIHI recreation criterion in ZOEs 1 and 2 is satisfied by meeting alternative standard H-2.

FERC license Article 404 requires CRPNH to operate and maintain and provide public access to Project recreation facilities (Figure 6). The Project includes three recreation features:

- The Eastman Falls recreation area, known as the "park", which includes a picnic area and boat launch. In addition, the park provides parking and access for fishing along the Pemigewasset River for trout and salmon;
- A portage trail, and;
- The Franklin Public Boat Ramp, which includes parking and picnic areas.

CRPNH operates and maintains the Eastman Falls Recreation Area and the portage trail while the City of Franklin operates and maintains the Franklin Public Boat Ramp.

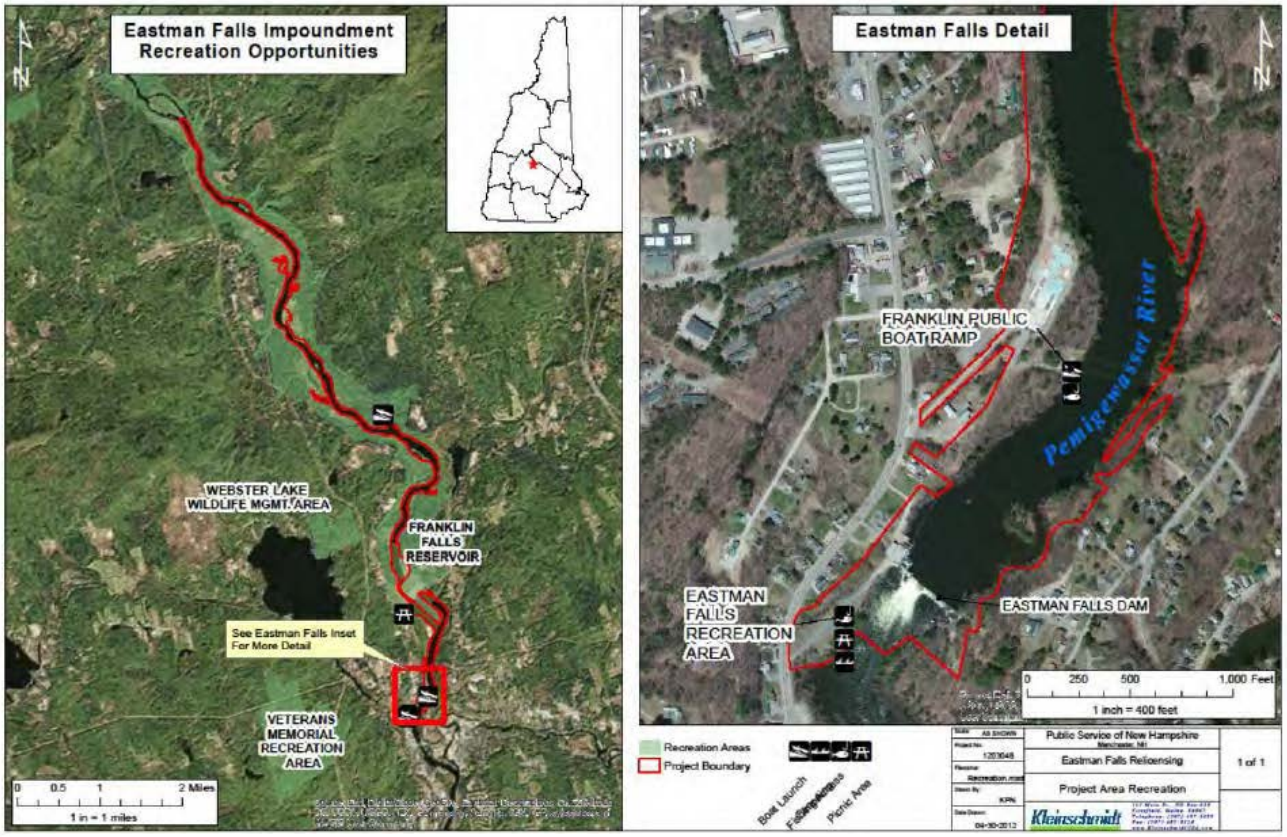


Figure 6 - Recreational Facilities

My review found no license deviations nor any issues pertaining to the Project's recreational resources compliance. It is my recommendation that the Project satisfies the recreational resources criterion.

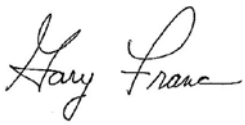
8. RECOMMENDATION

A review of the certification application and a search of the entire FERC docket shows CRPNH has been proactive in meeting the Project's FERC license articles. Filings were on time without the need of time extension requests. Other than the one ROR deviation occurring on July 17, 2018, no other FERC compliance issues were found. The Applicant has demonstrated that the Project meets the LIHI criteria

with the standards selected and discussed in the application. Therefore, I recommend issuing a LIHI Certificate for the Eastman Falls Project for a period of five years with the following conditions:

Condition 1: The Facility Owner shall provide NHDES's review comments on the Operation Compliance Monitoring and Maintenance Plan to LIHI within 60 days of its receipt. If the review defines any outstanding issues, the Facility Owner shall provide updates in their annual compliance submittal to LIHI summarizing progress made toward final approval of the plan by NHDES and FERC.

Condition 2: The Facility Owner shall provide updates in their annual compliance submittal to LIHI summarizing progress made toward completion of upstream and downstream passage for American eel until all required improvements have been made and approved by FERC.



Gary M. Franc

FRANC LOGIC

Licensing & Compliance
Hydropower Consulting & Modeling

APPENDIX A

DOCUMENTS
(non-confidential)

From: Curtis Mooney <cmooney@centralriverspower.com>
Sent: Tuesday, January 15, 2019 2:38 PM
To: Comstock, Gregg
Subject: Eastman Operations Compliance Monitoring & Maintenance Plan approval

Good afternoon Gregg:

Happy New Year!

Jeremy Jessup from FERC is asking again if the NHDES has approved the Eastman Falls (FERC No 2457) Operations Compliance Monitoring & Maintenance Plan (OCMMP). Please see the attached email.

Also, we are applying for Low Impact Hydropower Institute (LIHI) certification for Eastman Falls and as part of the application process, the LIHI reviewer is asking if the OCMMP Plan has been approved and if the Water Quality Monitoring Plan has been approved.

We incorporated NHDES comments on the Water Quality Monitoring Plan and filed the revised plan with FERC and cc'd you. We have not received formal approval from the NHDES or FERC regarding the Water Quality Monitoring Plan.

Your approval of these two plans would be helpful and much appreciated.

Please let me know if you have any questions.

Thanks,
Curt

Curtis R. Mooney, MS
Central Rivers Power
Manager, Regulatory Affairs

59 Ayers Island Road
Bristol, NH 03222

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
http://www.fws.gov/newengland

In Reply Refer To:
Consultation Code: 05E1NE00-2019-SLI-0279
Event Code: 05E1NE00-2019-E-00619
Project Name: Eastman Falls FERC No. 2457 LIHI

November 08, 2018

Subject: List of threatened and endangered species that may occur in your proposed project location, and/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 (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

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 Act, 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 website 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.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

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 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 Act. 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 England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2019-SLI-0279

Event Code: 05E1NE00-2019-E-00619

Project Name: Eastman Falls FERC No. 2457 LIHI

Project Type: DAM

Project Description: The Eastman Falls Hydroelectric Project (Project) is located in central New Hampshire in Merrimack and Belknap Counties, and in the city of Franklin and towns of Hill, Sanbornton, and New Hampton. The Project is located on the Pemigewasset River, at river mile 116.5, approximately 1.5 miles downstream of the U.S. Army Corps of Engineers (USACE) Franklin Falls Flood Control Dam, and about one mile upstream of its confluence with the Winnipesaukee River. The Project was originally constructed by the Pemigewasset Power Company in 1903, redeveloped by the Boston and Maine Railroad in 1910-1911, and further redeveloped by Public Service Company of New Hampshire (PSNH) in 1937 and 1983. The Project's hydroelectric facilities are owned and operated by Central Rivers Power NH, LLC.

This project review is part of the LIHI application for the Project

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/43.49881545146312N71.67254924742501W

Counties: Belknap, NH | Merrimack, NH

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 Fisheries[1], 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 *Myotis septentrionalis* 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.
