



**REVIEW OF APPLICATION FOR LIHI RECERTIFICATION  
OF THE  
GREGG'S FALLS HYDROELECTRIC PROJECT, LIHI #120**

**FERC Project No. 3180, exempt  
Piscataquog River – Goffstown, New Hampshire**



**March 16, 2020  
Maryalice Fischer, Certification Program Director**

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## FINAL REVIEW OF APPLICATION FOR LIHI RECERTIFICATION OF THE GREGG'S FALLS HYDROELECTRIC PROJECT, LIHI #120

This report provides final review findings and recommendations related to the recertification application submitted to the Low Impact Hydropower Institute (LIHI) by Gregg Falls Hydroelectric Associates Limited Partnership a subsidiary of Eagle Creek Renewable Energy, LLC (Applicant) for recertification of the Gregg's Falls Hydroelectric Project, LIHI #120 (Project). The final recertification application package was filed on January 26, 2020 and is subject to review under the current 2<sup>nd</sup> edition LIHI Handbook (Revision 2.03, December 20, 2018).

### I. INTRODUCTION

The Project was first certified by LIHI in 2015 for a term of five years, which expired on January 26, 2020. The term was extended to April 15, 2020 to allow time to complete the recertification process. The original certification included the following three conditions, all of which were satisfied as summarized below.

***Condition 1.*** *To confirm compliance with possible new flow requirements, the Facility Owner shall provide LIHI with documentation of the USFWS's required flow regime for the Project, the final schedule for implementing the Operations and Flow Monitoring Plan, and approval from USFWS and NHF&GD of this Plan. These shall be provided within 30 days of each item's completion. In its annual compliance report, the Facility Owner shall provide a statement of compliance with the Operations and Flow Monitoring Plan and an explanation of any deviations from the Plan requirements.*

Status: The US Fish and Wildlife Service (FWS), acting on behalf of itself and New Hampshire Fish and Game Department (NHFG) approved the final Operations and Flow Monitoring Plan via email on August 8, 2017. The approval also included FWS acceptance of the existing minimum flow regime.

***Condition 2.*** *To confirm that the project waters are meeting all numerical state standards for water quality, additional sampling for all parameters, including but not limited to DO, chlorophyll and pH as outlined in a sampling plan to be developed by NHDES, shall be conducted in 2015. The sampling plan, results of these studies and an analysis by NHDES regarding compliance with state standards shall be provided to LIHI within 30 days of completion of NHDES's determination. All additional water quality sampling required by NHDES shall be completed by December 31, 2015.*

Status: The Applicant conducted water quality monitoring in 2015 and forwarded results to NHDES on January 7, 2016. NHDES approved the results via email on July 10, 2017 noting that the Piscataquog River immediately upstream and downstream of the Gregg's Falls Hydroelectric Project was attaining water quality standards at that time.

***Condition 3.*** *To confirm compliance with the MOA<sup>1</sup> regarding fish passage, the Facility Owner shall provide LIHI with copies of any notification that they receive from state or federal resource agencies that require construction of the downstream passage and protection facilities for river herring and American eel. LIHI shall be notified of any such fish passage requirements within 30 days of receipt of that notification. Further, the Facility Owner shall keep LIHI informed on the status of activities conducted to meet these requirements within the designated timeframe, including any interim deadlines (e.g., approval of construction plans, effectiveness testing completion, etc.) in their annual compliance report to LIHI.*

Status: No agency notification of the need for downstream passage was made during the 2017 MOA revision which included a provision to reevaluate passage needs in 2020, as discussed in Section VII.D below.

## **II. RECERTIFICATION PROCESS AND MATERIAL CHANGE REVIEW**

Under the 2016 LIHI Handbook (rev 2.03, December 20, 2018), reviews are a two-phase process starting with a limited review of a completed LIHI application, focused on three questions:

- (1) Is there any missing information from the application?
- (2) Has there been a material change in the operation of the certified facility since the previous certificate term?
- (3) Has there been a change in LIHI criteria since the Certificate was issued?

In accordance with the Recertification Standards, if the only issue is that there is some missing information, a Stage II review may not be required. These standards also state that "material changes" mean non-compliance and/or new or renewed issues of concern that are relevant to LIHI's criteria. If the answer to either question (2) or (3) is "Yes", a more thorough review of the application using the LIHI criteria in effect at the time of the recertification application, and development of a complete Stage II Report, is required. As a result, all Projects currently applying for renewal must go through a full review unless their most recent certification was completed using the 2016 Handbook.

A review of the initial application, dated November 2019, resulted in a Stage I or Intake Report, dated November 20, 2019. This Stage I assessment indicated there were no "material changes" at the Project. The response to the Stage I Report was provided in the form of a revised application dated December 2019. The application was posted for public comment on January 3, 2020.

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<sup>1</sup> Memorandum of Agreement executed between the Applicant and US Fish and Wildlife Service that dictates certain requirements for the Project and some other Applicant-owned projects in New Hampshire discussed elsewhere in this report.

This Stage II assessment included review of the application package, supplemental information provided by the Applicant, and review of the annual compliance statements received by LIHI during the past term of Certification.

### III. PROJECT LOCATION AND SITE CHARACTERISTICS

The Gregg's Falls Project is located in Goffstown, Hillsborough County, New Hampshire on the Piscataquog River at river mile (RM) 6 upstream from the river's confluence with the Merrimack River (Figure 1). The Piscataquog River is within the Merrimack River Basin that encompasses approximately 1,799 square miles. The Piscataquog is approximately 70 miles long and consists of three branches. The North Branch originates from the Deering Reservoir in Deering, NH. The Middle Branch originates from Haunted Lake in Francestown, NH. The South Branch originates from Pleasant Pond in Francestown, NH. The three branches converge upstream of the Project. The watershed area at the dam is 193.1 square miles. The river's confluence with the Merrimack River is approximately 2 river miles downstream of Amoskeag dam, part of the Merrimack River Project which includes the Hooksett development (LIHI #162) and Lowell (LIHI #142) the next downstream project on the Merrimack mainstem.

The Piscataquog river is designated by the State of New Hampshire as a protected river under the state's Rivers Management and Protection Program.<sup>2</sup>

There are several other dams on the river shown on Figure 1. Upstream dams include several non-powered dams and one hydro facility:

- Deering Reservoir Dam at RM 33.7, owned by NHDES
- Weare Reservoir Dam at RM 25.1, owned by NHDES
- Everett Dam at RM 16.9, owned by the U.S. Army Corp of Engineers
- Riverdale Dam at RM 11.8, owned by the U.S. Army Corp of Engineers
- Hadley Mills Dam (FERC exempt No. 5379) at RM 8.5, owned by NHDES

The only downstream dam and hydro facility is Kelley's Falls Hydroelectric (FERC license No. 3025) at RM 1.8, owned by Green Mountain Power Corporation, the dam owned by NHDES.

Upstream fish passage facilities do not currently exist at any of the Piscataquog River dams. Upstream passage facilities are required at Kelley's Falls by the second year following the time when 15,000 American shad are documented passing Amoskeag Falls on the Merrimack River. Downstream fish passage facilities are operated and maintained at Kelley's Falls.

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<sup>2</sup> <https://www.des.nh.gov/organization/commissioner/pip/factsheets/rl/documents/rl-10.pdf>



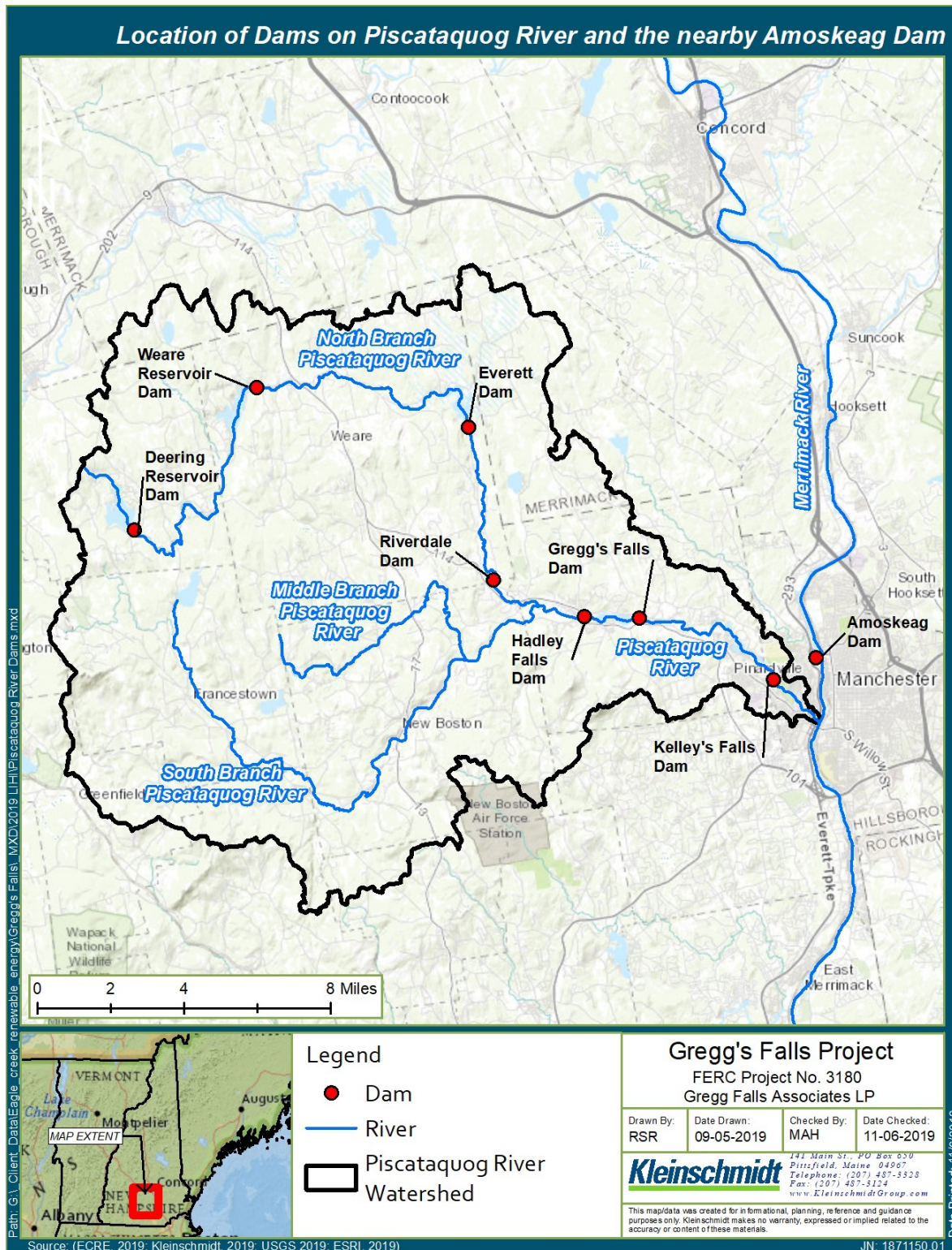


Figure 1. Piscataquog River Watershed

The Project dam was constructed in 1918-1919 by the Manchester Traction, Light and Power Company and was the largest dam in the state at that time. The power station on the easterly shore enabled the owner to utilize a large amount of water that formerly went over the previous dam or through the sluiceway. The dam is currently owned by NHDES although the Applicant is responsible for FERC dam safety and related requirements.

The hydroelectric Project was operated as a peaking water power facility until the 1970's, when the powerhouse was decommissioned. In 1985, a major refurbishment took place, which included the installation of two new Francis turbines and generators and the replacement of all electrical and control equipment. The Project now operates in a run-of-river mode with a total installed capacity of 3.1479 MW with average annual generation of 10,542 MWh.

The Project consists of:

- an earthfill and concrete gravity dam 1,360 feet long and 60 feet high;
- a concrete spillway crest elevation with an elevation of 271.1 feet NGVD topped by 1.5-foot-high flashboards which raise the normal maximum surface elevation to 272.6 feet NGVD.
- A 136-acre reservoir (Glenn Lake) with a storage capacity of 3,650 acre-feet;
- intake structures and two concrete penstocks 31.75 feet long and 10 feet by 17.5 feet oblong shape, transitioning to a 7.5 feet diameter circular shape;
- a powerhouse integral to the dam that contains 2 Francis turbines and generators with installed capacities of 2.169 MW and 1.31 MW; and
- a switchyard and a 100-foot-long transmission line

Figure 2 illustrates the key Project features.



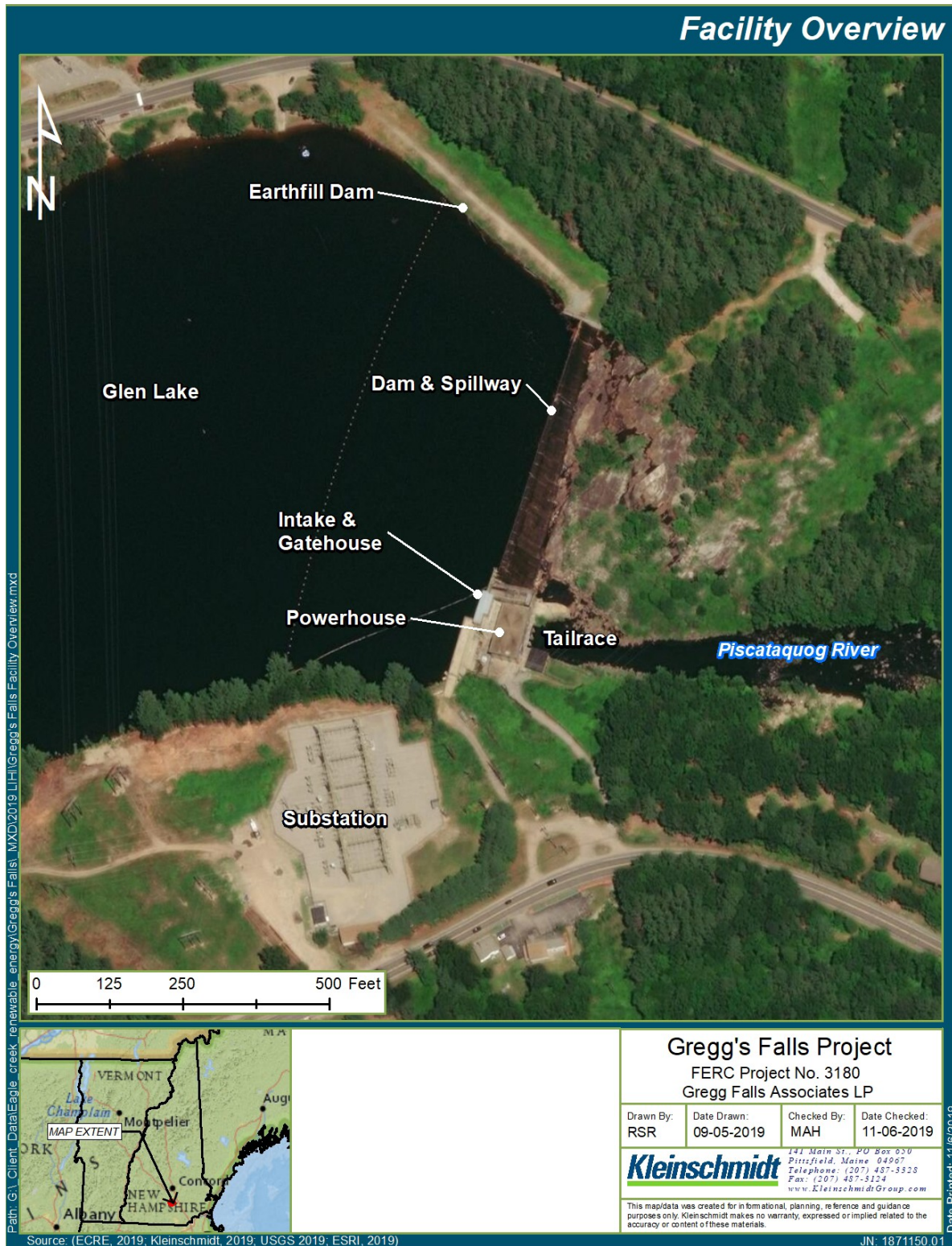


Figure 2. Gregg's Falls Project Features



#### IV. REGULATORY AND COMPLIANCE STATUS

The Project was granted a non-conduit exemption by FERC on July 21, 1983.<sup>3</sup> The Project was owned at the time by the New Hampshire Water Resources Board (now NH DES) and Gregg Falls Hydroelectric Associates Limited Partnership. On July 9, 2013, Eagle Creek Renewable Energy, LLC (ECRE or Eagle Creek) acquired Gregg Falls Hydroelectric Associates Limited Partnership as a wholly owned indirect subsidiary. The exemption was amended in 1998<sup>4</sup> to update installed capacity and the Project description including dam crest elevation and the height of flashboards.

A review of the FERC elibrary from January 1, 2015 to present identified only routine filings and dam safety or public safety related documents. No exemption deviations were documented on the elibrary. The Applicant and the prior owner filed annual minimum flow compliance certification reports until FERC discontinued that practice for the Project in 2016; however, the Applicant is still required to file reports of any deviations that may occur.

Under the FERC exemption, the Project is subject to Standard Articles including Article 2 which requires compliance with any terms and conditions that federal and state fish and wildlife agencies may impose. No water quality certification (WQC) was required for FERC exemption nor was one issued for the Project.

In August 2014, FWS and Eagle Creek entered into a Memorandum of Agreement (MOA)<sup>5</sup>, the purpose of which was to establish a plan and schedule to address fish passage and minimum flows at Eagle Creek's hydroelectric projects in New Hampshire. The MOA was executed with a 5-year term and an option for the Parties to extend the term by mutual agreement. There is currently an interim extension to the MOA that expires on March 31, 2020. The extension is intended to allow FWS and NHFG to conduct site reviews of downstream fish passage facilities and minimum flows with the purpose of extending the MOA for another 5-year term. NHFG is actively involved in review of activities associated with the MOA although they are not a signatory to the MOA. The 2019 interim extension was provided in Appendix D of the application.

#### V. PUBLIC COMMENTS RECEIVED OR SOLICITED BY LIHI

The application was publicly noticed on January 3, 2020 and notice of the application was forwarded to resource agency and stakeholder representatives listed in the application. No public comments were received by LIHI during the 60-day comment period which ended on March 3, 2020. Based on the completeness of the application, the MOA extension and related

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<sup>3</sup> [https://lowimpacthydro.org/wp-content/uploads/2015/01/Greggs-Falls\\_Appendix-1-1-FERC-Exemption-dtd-July-21-1983.pdf](https://lowimpacthydro.org/wp-content/uploads/2015/01/Greggs-Falls_Appendix-1-1-FERC-Exemption-dtd-July-21-1983.pdf)

<sup>4</sup> [https://lowimpacthydro.org/wp-content/uploads/2015/01/Greggs-Falls\\_Appendix-1-2-FERC-Ammended-Exemption-Dec-1-1998.pdf](https://lowimpacthydro.org/wp-content/uploads/2015/01/Greggs-Falls_Appendix-1-2-FERC-Ammended-Exemption-Dec-1-1998.pdf)

<sup>5</sup> <https://lowimpacthydro.org/wp-content/uploads/2015/01/eagle-creek-moa.pdf> and <https://lowimpacthydro.org/wp-content/uploads/2015/01/eagle-creek-moa-appendix-A.pdf>

consultation documentation, no direct outreach to resource agencies or other stakeholders was conducted as part of this review.

## VI. ZONES OF EFFECT

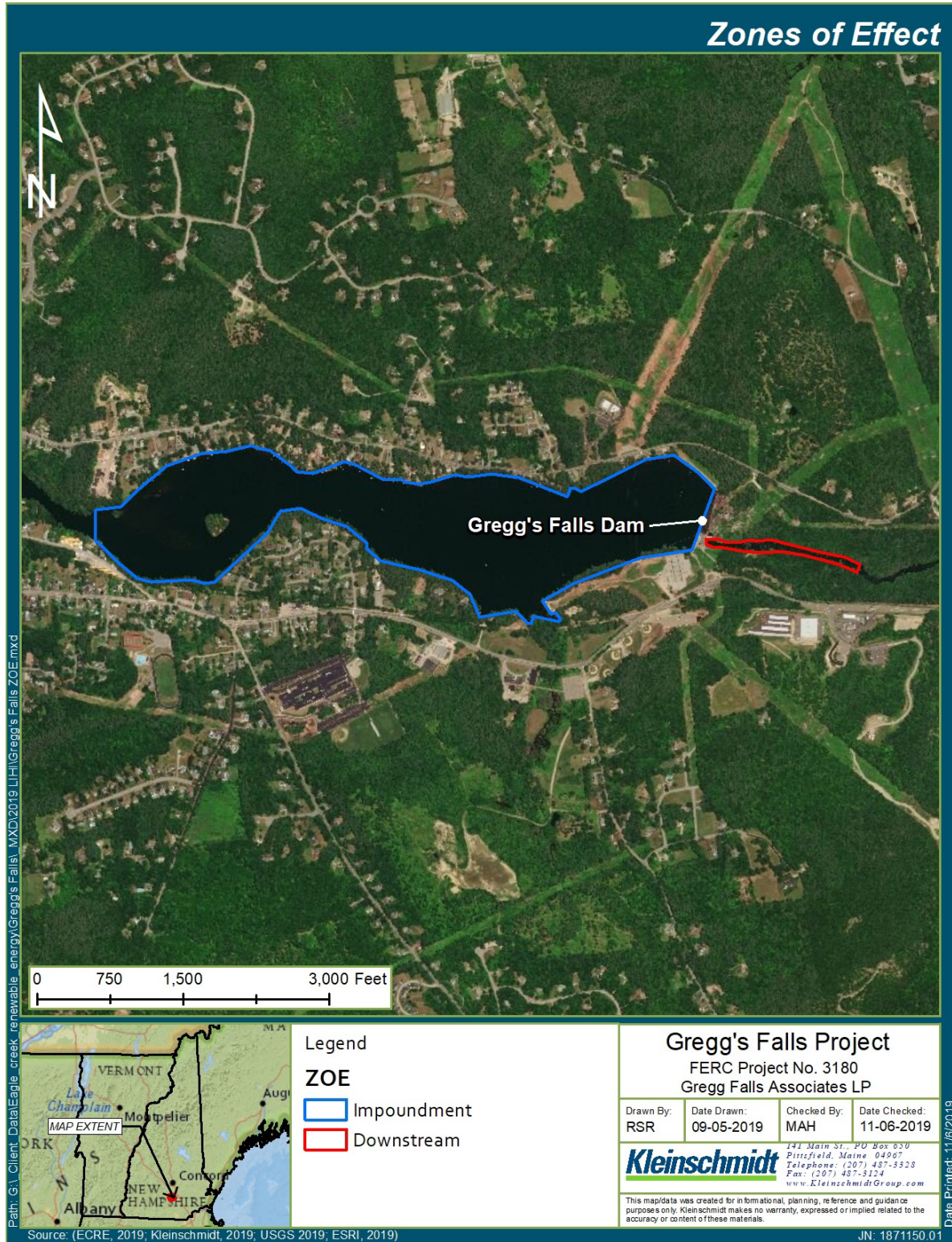
The Applicant delineated the Project into two Zones of Effect (ZoEs): Zone 1 is the impoundment extending 2.5 miles upstream from the dam to the tailrace of the Hadley Falls Project and Zone 2 is the 0.3-mile tailrace and immediate downstream reach below the dam (Figure 3). The Applicant selected the standards shown in the tables below. The Reviewer agrees with the selected Standards (the PLUS request is discussed in Section VII.H below).

### Zone 1 - Impoundment

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		X

### Zone 2 – Tailrace

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		X



**Figure 3. Gregg's Falls Project Zones of Effect**

## VII. DETAILED CRITERIA REVIEW

### A: Ecological Flow Regimes

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

**Assessment of Criterion:** The Applicant selected Standard A-1, Not Applicable / De Minimis Effect for both ZOE's.

**Discussion:** The Project operates in instantaneous run-of-river mode and there is no bypassed reach. Impoundment level is maintained within a 2-inch band by a PLC system that continually measures flow and adjusts the impoundment level in response. Compliance is confirmed on a daily basis by on-site staff. NHDES, which owns the dam, schedules drawdowns of the impoundment level each fall as part of a state-wide program intended to allow for spring runoff and reduce erosion and shoreline ice damage. The impoundment is drawn down 1.5 feet to the dam crest via hydro generation and floodgates if needed depending on inflow and run-of-river operations continue at the lower elevation throughout the winter and spring. Flashboards are removed after drawdown and are replaced in the spring after the freshet. Impoundment refill rates are customarily limited to 10% of inflow with 90% of inflow being passed over the spillway until the summer impoundment level is reached.

Under the MOA, the Applicant prepared and filed for approval by the FWS, an Operations and Flow Monitoring Plan for monitoring the run-of-river operation. The Plan was developed based upon a mutually agreeable schedule that allowed downstream fish passage facilities at certain NH projects to first be placed into service. The Plan was prepared and submitted to FWS and approved in 2017. It was then updated in December 2018. The Applicant received additional comments from agencies on the Plan in September 2019 and it will be updated based on further discussion with the agencies as part of the MOA extension.

In May 2017, the Applicant's agent provided NHDES with detailed information regarding the physical structure of the facility, minimum flows and pond fluctuations at the Project. The information confirmed that the Project is operated as a run-of-river project and that the project does not draw down the impoundment or store water for purposes of power generation. Any pond level fluctuations are the result of operation of upstream hydroelectric projects, inflow that exceeds turbine capacity, or maintenance drawdowns.

The Project maintains a 20-cfs tailrace base flow or inflow if less, originally proposed as 9 cfs by the Applicant in its FERC exemption application. There is no record of why the flow was increased, but a downstream passage pipe for Atlantic salmon smolt was subsequently installed with a 20-cfs flow. The downstream passage operation was discontinued in 2016 under the MOA and as a result of discontinuation of the salmon restoration program in the state. The 20-cfs minimum flow is now provided via turbine generation or through the spillway if the Project is not operational. FWS conducted a site evaluation of the base flow in 2015. Although they did not do a quantitative review that included measurements, they did a visual qualitative



review of the wetted perimeter, substrate cover, pools, etc. and confirmed that the flow is adequate.

Based on the application, supporting documentation, and FERC elibrary documents, this review finds that the Project is in compliance with flow requirements and operates to protect aquatic habitat, and therefore continues to satisfy the ecological flow regimes criterion under Standard A-1 given run-of-river operations, or alternatively under Standard A-2, Agency Recommendation since the MOA constitutes the current formal science-based agency recommendation for management of flows.

## **B: Water Quality**

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

**Assessment of Criterion:** The Applicant selected Standard B-3, Site-Specific Monitoring Studies for both ZoEs.

**Discussion:** The Piscataquog River Management Plan Update <sup>6</sup> was developed as part of the river's designation in 1992 as a state-protected river under the NH Rivers Management and Protection Program. Project waters are classified as Community River (impoundment) and Rural-Community River (downstream of the dam), both of which must meet Class B water quality standards. As such, the NHDES has designated the following beneficial uses for the Piscataquog River: agricultural watering, boating, fishing, aesthetic quality, water-contact recreation including swimming, wildlife habitat (including several endangered and threatened species), fish nursery/fishery, wetland support, water storage and hydropower.

According to the NHDES's draft 2018 303(d) list<sup>7</sup>, the Piscataquog River at Goffstown and Manchester has an impairment for pH. The TMDL priority is categorized as "low" and the impairment is considered marginal. Many NH rivers are impaired for pH due to low buffering capacity and the effects of atmospheric deposition.

The Applicant worked with NHDES to develop a water quality monitoring plan to support LIHI Certification at that time. Sampling was attempted in 2013 but not completed since 10-day low flow conditions did not occur that year. Sampling was conducted in 2015 in accordance with the LIHI Certification condition 2, but results were inconclusive due to equipment failures. Sampling was conducted again in 2016 and results were acknowledged by NHDES in 2017 as meeting state water quality standards.

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<sup>6</sup> <https://www4.des.state.nh.us/blogs/rivers/wp-content/uploads/2010/12/2010-Piscataquog-River-Mnmt-Plan-Update.pdf>

<sup>7</sup> <https://www.des.nh.gov/organization/divisions/water/wmb/swqa/2018/index.htm>

Based on the application, supporting documentation, and FERC elibrary documents, this review finds that the Project does not appear to adversely impact water quality and is not the cause of bacteria impairments, therefore it continues to satisfy the water quality criterion.

### **C: Upstream Fish Passage**

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

**Assessment of Criterion:** The Applicant selected Standard C-1, Not Applicable/De Minimis Effect for the impoundment ZoE and Standard C-2, Agency Recommendation for the tailrace ZoE. Standard C-1 is appropriate for the impoundment reach since once above a dam there is no further impediment to upstream movement.

**Discussion:** The Project's exemption Standard Article 2 reserves authority for agencies to require fish passage facilities. To date no agency has exercised its authority for upstream passage and there are no upstream passage facilities at the Project.

On October 2, 2019, FWS responded via email to the Applicant's request for input on the recertification application that, according to NHFG, American eel are present upstream, and downstream, of the Project (Appendix A). FWS reiterated that upstream passage for anadromous fish may be needed in the future since there has been continued improvement in passage at Merrimack River projects and the agency intends to prescribe upstream passage at the Kelley's Fall Project located downstream which is currently in relicensing with current license expiration in 2024. Target species may include American shad and river herring (alewives and blueback herring) which are present in the Merrimack River basin downstream of the confluence of the Piscataquog River. FWS requested that the Applicant commit to implementing upstream anadromous fish passage if necessary, in the future. However, the current exemption requirement under Standard Article 2 makes a LIHI condition to address this matter unwarranted.

FWS also requested that the LIHI recertification include a condition that the Applicant conduct an upstream eel passage siting survey at the Project to identify areas of eel concentration so that the location of a permanent upstream eel passage facility can be properly sited if/when passage facilities are needed. Presumably, this request also requires agency consultation for the study and design of any permanent passage facility. The Applicant indicates that they intend to conduct this study under the amended MOA, thus a specific condition a condition to address this matter is unwarranted.

Based on the application, supporting documentation, and FERC elibrary documents, this review finds that the Project is in compliance with current agency recommendations that do not currently require passage, and therefore continues to satisfy the upstream fish passage criterion. A condition is recommended to require the Applicant to notify LIHI if/when notice of

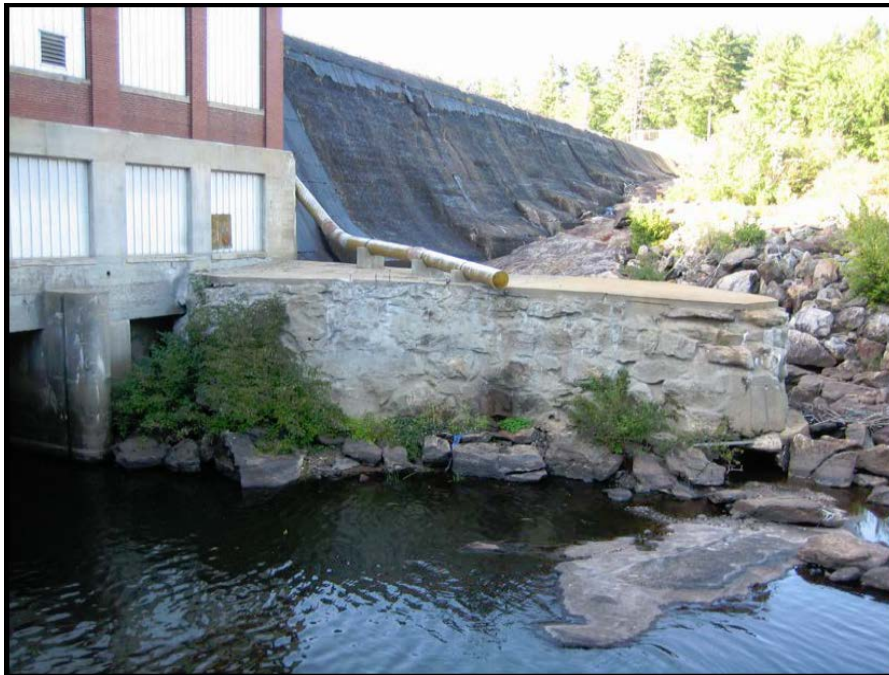
a need for upstream passage for anadromous fish or American eel is received and that the status of passage installation is reported to LIHI annually thereafter.

#### **D: Downstream Fish Passage**

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

**Assessment of Criterion:** The Applicant selected Standard D-2, Agency Recommendation for the impoundment ZoE and Standard D-1, Not Applicable/De Minimis Effect for the tailrace ZoE. Standard D-1 is appropriate in the tailrace ZoE since once below a project there is no further impediment to downstream movement.

**Discussion:** The Project's exemption Standard Article 2 reserves authority for agencies to require fish passage facilities. On June 28, 1983, the U.S. Department of the Interior (USDOI) required the Project to operate downstream fish passage facilities for Atlantic salmon smolts from April 15 to May 15 each year. Passage was provided via a downstream passage pipe located adjacent to the powerhouse that conveyed a 20-cfs flow and downstream migrating smolts into a plunge pool at the powerhouse draft tube outlet. Salmon fry had been stocked in the South Branch (see footnote 6) and the passage facility was operated until 2016 when the Atlantic salmon restoration program was discontinued, although the pipe remains in place (Figure 4).



**Figure 4. Downstream Passage Pipe**

American eel is also present upstream and downstream of the Project according to FWS and NHFG. Alewife are present in the broader Piscataquog watershed along with numerous riverine species (see footnote 6) including: largemouth and smallmouth bass, bluegill, brown and yellow bullhead, carp, creek chub, creek chubsucker, blacknose and longnose dace, fallfish, margined madtom, yellow and white perch, chain pickerel, slimy sculpin, various species of shiner including the state-threatened bridle shiner, white sucker, redbreast sunfish, and wild brook trout, brown trout and rainbow trout. With the exception of alewife and Atlantic salmon, these species are considered non-migratory in that they do not require migration to and from seawaters to complete their lifecycles. The river has coldwater and warmwater species, but it is managed as a coldwater fishery.

Under the MOA, the Applicant agrees to design in consultation with FWS, and then construct, operate and maintain downstream fish bypass passage facilities for adult and juvenile river herring in all years when river herring have been stocked upstream of the Project and to construct and operate American eel passage facilities within 48 months of notice by FWS or NHFG. The facilities can be the same for both species and would need to consist of measures to protect fish from impingement and entrainment as well as bypass facilities to assist fish in moving safely past the Project.

The October 2, 2019 FWS email requested that the Applicant develop changes to project structures or operation, in consultation with the natural resource agencies, to protect downstream migrating eels. Potential changes could include performing nighttime shutdowns during the adult American eel egress period or installing narrower trashracks that exclude migratory and resident fish from becoming entrained. Trashracks currently have 1 1/2 -inch clear spacing which are expected to keep adult eels from becoming entrained. According to FWS, either alternative would necessitate operation of a fish bypass with an adequate fish bypass flow to provide a safe egress route past the Project. Since the MOA already includes this same basic provision, a condition to address this matter is unwarranted.

Based on the application, supporting documentation, and FERC elibrary documents, this review finds that the Project continues to satisfy the downstream fish passage criterion. A condition is recommended to require the Applicant to notify LIHI if/when notice of a need for downstream passage is received and that the status of passage installation is reported to LIHI annually thereafter.

#### **E: Shoreline and Watershed Protection**

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

**Assessment of Criterion:** The Applicant selected Standard E-3, Enforceable Protection for both ZoEs.



**Discussion:** The FERC exemption does not include a requirement for a Shoreline Management Plan. The impoundment occupies 136 acres and other land and water within the FERC project boundary is approximately 49 acres, for a total of 185 acres. There is some residential development and limited mixed-use commercial and village center areas around the upper half of the impoundment. The shoreline downstream of the dam is primarily forested with very little development. Numerous conservation groups, towns along the river, state agencies and dozens of private landowners and river stewards have worked to protect the Piscataquog River. As a result, 4,356 acres of land along the river are protected as well as 85% of the open space within the watershed.

In 1993, the Piscataquog River was designated as a state-protected river under the NH Rivers Management and Protection Program<sup>8</sup> which provides an extra level of protection for significant instream river resources. Proposed development activities and any actions requiring are state permit are subject to review by the Piscataquog River Local Advisory Committee guided by the Piscataquog River Management Plan.<sup>9</sup> This protection status also includes development and use restrictions within a 250-foot buffer from the river's edge in accordance with the NH Shoreland Water Quality Protection Act .<sup>10</sup>

Based on the application, supporting documentation, and FERC elibrary documents, this review finds that the Project with its run-of-river operation, small footprint, and state regulatory restrictions, has little to no impact on the shoreline and therefore continues to satisfy the shoreland and watershed protection criterion.

#### **F: Threatened and Endangered Species**

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

**Assessment of Criterion Passage:** The Applicant selected Standard F-1, Not Applicable / De Minimis Effect for both ZoEs.

**Discussion:** The FWS Information for Planning and Consultation (IPaC) database was accessed as part of the recertification application process to determine federally listed species that could occur in the Project vicinity. The Northern long-eared bat (*Myotis septentrionalis*) was listed as a federally threatened species on May 4, 2015 and is also a species of special concern in New Hampshire. There are no critical habitats for this species and no documented occurrences in the Project area although the species range includes the Project area. The Applicant states that they will abide by the FWS 4(d) ruling for the species which restricts tree cutting to certain times of year. Ongoing run-of-river operations are not anticipated to negatively affect this species.

The small whorled pogonia orchid (*Istoria medeoloides*) is also federally threatened. It was

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<sup>8</sup> <https://www.des.nh.gov/organization/divisions/water/wmb/rivers/index.htm>

<sup>9</sup> [https://www4.des.state.nh.us/blogs/rivers/?page\\_id=128](https://www4.des.state.nh.us/blogs/rivers/?page_id=128)

<sup>10</sup> <https://www.des.nh.gov/organization/divisions/water/wetlands/cspa/index.htm>

originally listed as endangered in 1982 but down listed to threatened in 1994 when more populations were found. A recovery plan for the species was first developed in 1985 and has been revised since. The species is also listed in New Hampshire as endangered. According to the NH Natural Heritage Bureau (NHNHB) data check requested by the Applicant (redacted from the public version of the application), the plant has not been documented in the Project vicinity. Habitat for a variety of plant species of special concern in the state (see application) may also occur in the Project vicinity but no occurrences have been documented within the immediate Project area.

The state-endangered brook floater mussel (*Alasmodonta varicosa*) does occur in the Piscataquog River in the Project vicinity, as does the wood turtle (*Glyptemys insculpta*), a state species of special concern. No recovery plan for the brook floater has been developed. There is no habitat management being conducted for the wood turtle by NHFG. Both of the species were listed at the time the MOA was executed and was endorsed by NHFG. Therefore, it can be assumed that that run-of-river operations of the Project is appropriate to protect the state-listed species. Given the small Project footprint and run-of-river operations, it is unlikely that the Project impacts these species.

The IPaC report also listed six migratory birds protected under the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act.

- Bald eagle (*Haliaeetus leucocephalus*)
- Black-billed cuckoo (*Coccyzus erythrophthalmus*)
- Bobolink (*Dolichonyx orzyivorous*)
- Prairie warbler (*Dendroica discolor*)
- Snowy owl (*Bubo scandiacus*)
- Wood thrush (*Hylocichla mustelina*)

Although these species of migratory birds may be present in the Project vicinity, there are no provisions or management plans required of the Applicant with regard to species protection. The Project complies with all provisions under the Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act.

Based on the application, supporting documentation, and FERC elibrary documents, this review finds that the Project is unlikely to affect listed species given its small footprint, run-of-river operations, and commitment to follow the 4(d) rule for Northern long-eared bat. Therefore, the Project continues to satisfy the threatened and endangered species protection criterion.

### **G: Cultural and Historic Resources Protection**

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

**Assessment of Criterion:** The Applicant selected Standard G-1, Not Applicable/De Minimis Effect for both ZoEs.

**Discussion:** The FERC exemption does not include any requirements related to cultural and historic resources or cultural resource management plans and no resources were known to exist within the Project area at the time of exemption.

If present, no historical or archaeological resources are expected to be impacted by routine Project operations based on a September 30, 2013 response to a Request for Project Review received from the New Hampshire Division of Historical Resources (NHDHR).<sup>11</sup> However, the NHDHR response requires that cultural resources surveys must be conducted if any site alterations are planned. This response was reiterated in an August 2019 agency request made for purposes of recertification (Application Appendix E). The Applicant states that no such alterations have occurred or are planned that would trigger consultation with NHDHR.

Based on the application, supporting documentation, and FERC elibrary documents, this review finds that the Project does not adversely impact cultural or historic resources. Therefore, the Project continues to satisfy the cultural and historic resources protection criterion.

#### **H: Recreational Resources**

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

**Assessment of Criterion Passage:** The Applicant selected Standard H-3, Assured Accessibility and Use for both ZoEs. The Applicant also selected the H-PLUS standard for both ZoEs.

**Discussion:** There are no requirements in the FERC exemption related to recreation nor does the Project have a Recreation Resources Management Plan. In lieu of an existing recreation management plan, the Applicant accommodates reasonable access of Project lands and waters where safe to do so without fees or charges.

Non-Project recreational opportunities include a boat launch and parking lot located on Glen Lake maintained by the Town of Goffstown (Figure 5). Extensive boating occurs within the impoundment as well as below the project tailrace. Fishing is also popular upstream and downstream of the dam. Paddling and whitewater boating, mostly in the springtime, both occur in the reach from the dam down to the Kelley's Falls impoundment.

The Applicant requested the PLUS standard for recreation. The PLUS Standard requires: *The facility has created significant new public recreational opportunities in the vicinity of the facility beyond those otherwise required by agencies, such as campgrounds, whitewater parks, boating access facilities and trails, which opportunities do not create unmitigated impacts to other resources, beyond those required as a part of the facility's FERC license.*

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<sup>11</sup> [https://lowimpacthydro.org/wp-content/uploads/2015/06/Appendix-F-2\\_Greggs-Falls-NH-DHR-No-Impact-ltr.pdf](https://lowimpacthydro.org/wp-content/uploads/2015/06/Appendix-F-2_Greggs-Falls-NH-DHR-No-Impact-ltr.pdf)

Annual drawdowns of Glen Lake are conducted each fall (see Section VII.A above) and the drawdown is scheduled to occur on a specific Saturday in October to provide recreational opportunities for canoeists and kayakers in the river below the dam during the drawdown period.<sup>12</sup> The Applicant coordinates with the local kayaking group on a convenient time and release date to ensure there are not conflicting drawdowns or other paddling events. The Applicant also coordinates with NHDES on the specifics of the drawdown. These actions are voluntary and not a requirement of the MOA or any other exemption requirement.



**Figure 5. Piscataquog River Goffstown, NH<sup>13</sup>**

A rock staircase is maintained on a voluntary basis by the Applicant which allows anglers and paddlers access to the tailrace and river reach below the dam (Figure 6). According to American Whitewater's website<sup>14</sup> typically *"the first mile has most of the whitewater, with several Class II drops. There are good play opportunities along the way--the best being just past a clearing for power lines that run overhead. This play spot is called the Toilet Bowl. Depending on [water] level it is either a hole or series of waves."*

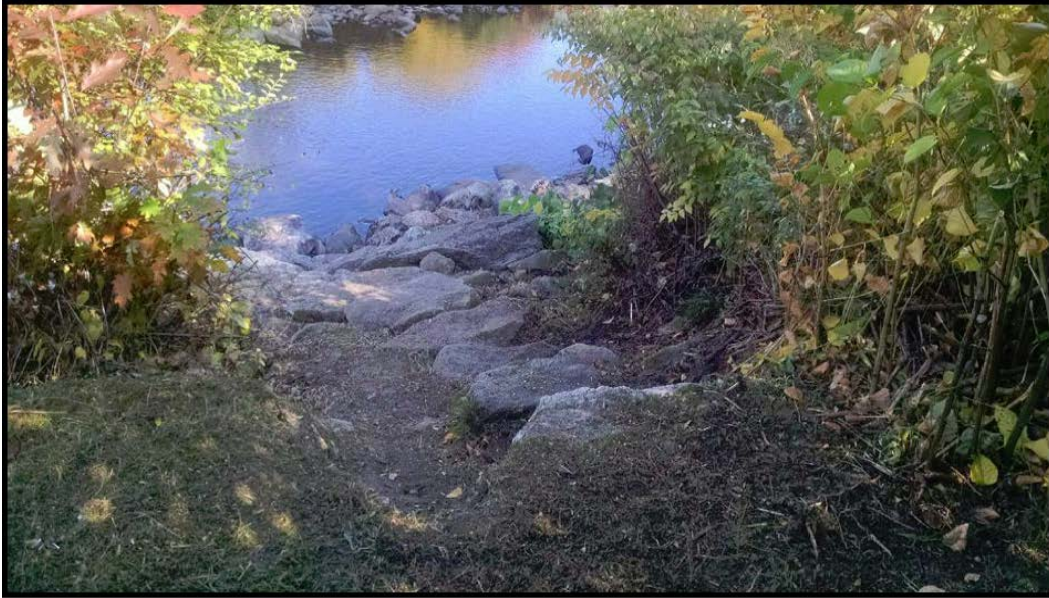
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<sup>12</sup> <https://www.des.nh.gov/media/pr/2019/20190910-lakes-drawdown.htm>

<sup>13</sup> <https://www.americanwhitewater.org/content/River/detail/id/3600/>

<sup>14</sup> <https://www.americanwhitewater.org/content/River/detail/id/3600/>





**Figure 5. Tailrace Access**

Based on the application, supporting documentation, and FERC elibrary documents, this review finds that the Project continues to satisfy the recreational resources criterion. This review also finds that the voluntary actions related to facilitating the annual whitewater event and tailrace access do provide significant new public recreational opportunities, particularly in relation to the small size of the Project.

#### **VIII. CERTIFICATION RECOMMENDATION**

This review included evaluation of the application and additional information provided, a review of the FERC elibrary during the current LIHI term, and review of other publicly available information. Based on this evaluation, the Reviewer recommends that the Gregg's Falls Project be recertified for a term of eight (8) years with one condition.

**Condition 1:** If the Facility owner receives notification from FWS or NHFG during the term of LIHI Certification that upstream or downstream passage is required, the owner shall inform LIHI within 90 days of the notification and provide updates on the status of agency consultation, any studies conducted, design plans, and a schedule of implementation in annual compliance submittals.

## Appendix A



Rosset, Julianne <julianne\_rosset@fws.gov>

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### [EXTERNAL] Gregg's Falls Hydro LIHI recertification review [response requested]

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Rosset, Julianne <julianne\_rosset@fws.gov>

Wed, Oct 2, 2019 at 10:30 AM

To: Nuria Holmes <Nuria.Holmes@kleinschmidtgroup.com>

Cc: "Sean.Mcdermott@noaa.gov" <Sean.Mcdermott@noaa.gov>, "gregg.comstock@des.nh.gov"

<gregg.comstock@des.nh.gov>, "Carol.Henderson@wildlife.nh.gov" <Carol.Henderson@wildlife.nh.gov>,

"Nadine.Miller@dcrr.nh.gov" <Nadine.Miller@dcrr.nh.gov>, Andy Qua <Andy.Qua@kleinschmidtgroup.com>

Dear Ms. Holmes,

The United States Fish and Wildlife Service (Service) has received your request for feedback regarding compliance of the Gregg's Falls Hydroelectric Project (FERC No. 3180; Project) with the requirements of its exemption.

The Service has reviewed the Project file and is not aware of any compliance issues at this time. However, there is no information in the Gregg's Falls file regarding upstream or downstream American eel passage and protection measures. According to the New Hampshire Fish and Game Department (NHFGD), American eel are present upstream, and downstream, of the Project. Due to the presence of eels in the Piscataquog River, the Service recommends that any LIHI recertification for the Project contains a condition requiring Eagle Creek to conduct an upstream eel passage siting survey within the project boundary to determine areas of eel concentration so that a permanent upstream passage facility (or facilities) can be properly sited. Additionally, the Service recommends Eagle Creek develop changes to project structures or operation, in consultation with the natural resource agencies, to protect downstream migrating eels. Potential changes may include performing nighttime shutdowns during the adult American eel egress period or installing narrower trashracks that exclude migratory and resident fish from becoming entrained. Either alternative would necessitate operation of a fish bypass with an adequate fish bypass flow to provide a safe egress route past the Project.

Additionally, while Gregg's Falls does not currently have anadromous passage measures, such measures may be needed in the future. The Service intends to prescribe anadromous fish passage facilities at Kelley's Falls Hydroelectric Dam (FERC No. 3025), the dam downstream of Gregg's Falls, in the context of relicensing and there has been continued improvement of upstream and downstream anadromous facilities at projects located on the Merrimack River. Therefore, as part of this LIHI recertification process, the Service would like a commitment from Eagle Creek to implement anadromous passage measures, if necessary, in the future. Those measures would likely include an upstream fish passage facility and downstream passage measures. Implementation would require consultation with and approval of facilities by the Service and passage measures implemented within three years after notification.

Thank you for this opportunity to comment. If you have any questions, please feel free to call or email me.

Kind regards,

Julianne

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