

APPLICATION REVIEW FOR  
LOW IMPACT HYDROPOWER INSTITUTE CERTIFICATION  
of the  
EAGLE CREEK RENEWABLES ENERGY LLC  
GREGG'S FALLS PROJECT NO. 3180



June 10, 2015

Application Reviewer: Patricia McIlvaine

**WRIGHT-PIERCE**   
Engineering a Better Environment

# **REVIEW OF APPLICATION FOR CERTIFICATION BY THE LOW IMPACT HYDROPOWER INSTITUTE OF THE GREGG'S FALLS PROJECT**

Prepared by:  
Patricia McIlvaine  
June 10, 2015

## **I. INTRODUCTION AND OVERVIEW**

This report reviews the original application submitted Eagle Creek Renewable Energy LLC (Eagle Creek or Applicant) in October 2013 to the Low Impact Hydropower Institute (LIHI) for Low Impact Hydropower Certification for the Gregg's Hydroelectric Project (Gregg's Falls or Project). A LIHI Intake Review was completed April 28, 2014. Eagle Creek provided supplemental information for review in response to the Intake Review and subsequent inquiries from the application Reviewer on January 15, 2015 through April 2015.

The existing Gregg's Falls Dam was built in 1918 by the Manchester Traction, Light and Power Company. It was the largest dam in the state at that time.. The power station on the easterly side of the dam enabled the company to utilize a large amount of water that formerly went over the previous dam or through the sluiceway to waste.

On June 29, 2013, Eagle Creek Renewable Energy LLC acquired 100% of Gregg Falls Hydroelectric Associates Limited Partnership, from Algonquin Power Co. The Gregg's Falls Dam is owned by the State of New Hampshire although Eagle Creek is responsible for dam safety requirements

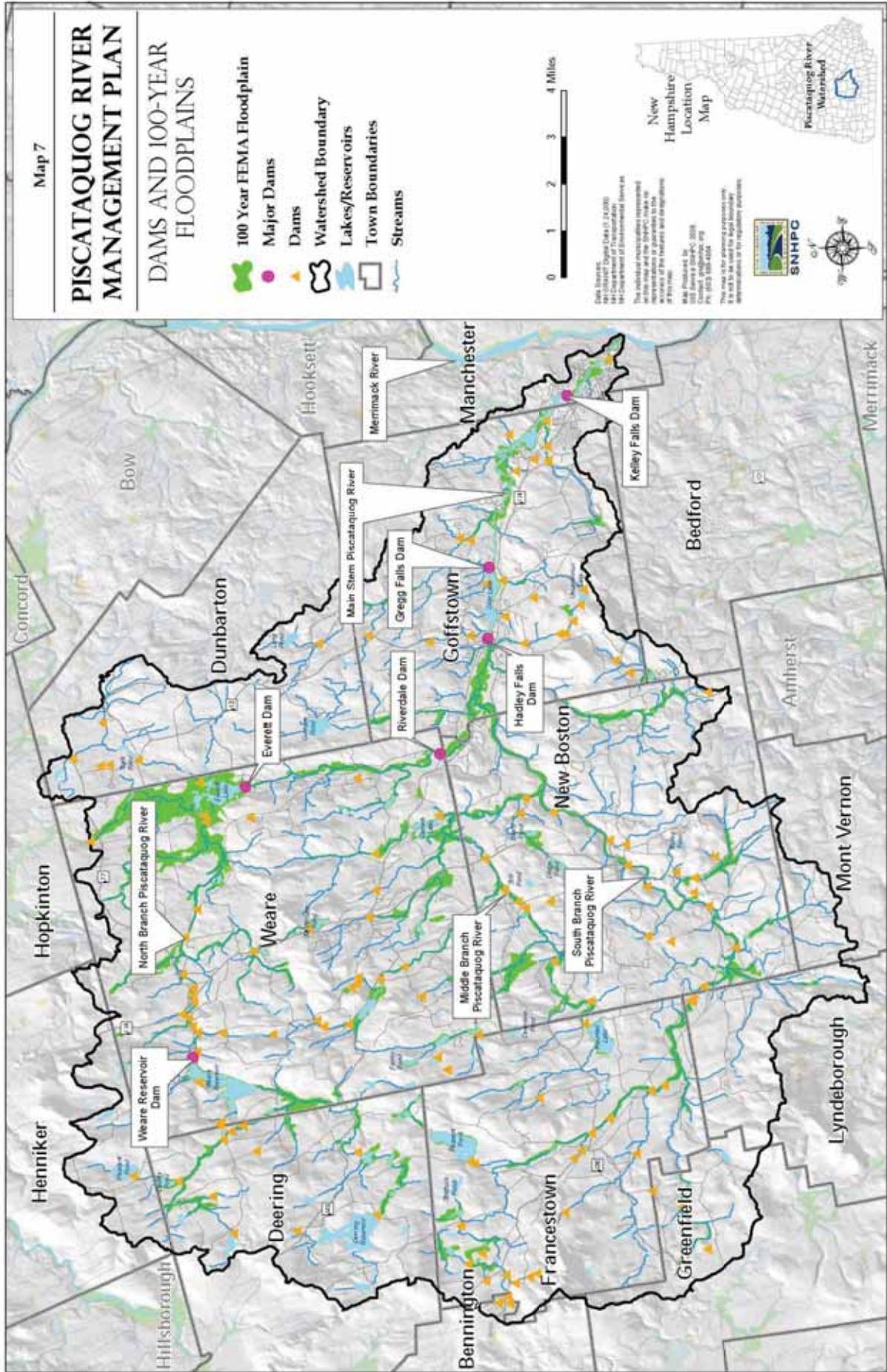
The reported annual production is 10,902 MWh.

## **II. PROJECT'S GEOGRAPHIC LOCATION**

The Gregg Falls facility is located on the Piscataquog River near the town of Goffstown, New Hampshire at River Mile 30 of this 37 mile long river. The site draws flow from a headpond of approximately 136 acres which is part of the Glen Lake recreational waterway. The site has a drainage area of approximately 193.1 square miles. The annual drawdown of the upstream lake provides a boost to energy generation at this site during the fall season.

The Piscataquog River is part of the Merrimack River Basin that encompasses approximately 1,799 square miles in southern New Hampshire and is a tributary of the Merrimack River. The Piscataquog River begins near southern and central New Hampshire just upstream of the Deering Reservoir and flows approximately 37 miles to the Merrimack River in New Hampshire. This river is regulated upstream of the Gregg's Falls project. The following map depicts dams located upstream and downstream of Gregg's Falls on the Piscataquog River. There are five hydroelectric sites upstream and one hydroelectric site downstream of the Gregg's Falls.

## Location of Dams on the Piscataquog River



The Piscataquog River basin is managed, based upon years of data and experience, to balance the many and diverse interests within the basin. There are seven hydroelectric sites on the Piscataquog River near Gregg's Falls that use the river flows to generate hydroelectric power. NHDES has entered into water user contracts with the owners of each of these sites. Under the terms of the contracts, one of the objectives of NHDES is to provide water to these facilities in usable quantities, insofar as ongoing conditions will allow, to increase the generating potential of the hydro operations. It is understood by these water users, however, that NHDES also has obligations to reach and maintain certain target elevations for the purposes of promoting the reasonable use and enjoyment of the lakes and rivers by recreational users, and to minimize the risk and effects of damaging flooding.

Day to day lake levels and discharges are coordinated to stay within an operating range that best serves these interests. In general terms, stored water is preserved during the summer recreational season and released in the fall to serve the needs of the hydroelectric interests along the basin and to enhance the lakes' ability to safely store flood waters during the typically high runoff months of March through May. During extreme events, the goal of NHDES is to strike a balance between high lake levels and high stream flows, both of which can be significantly damaging.

### **III. PROJECT AND IMMEDIATE SITE CHARACTERISTICS**

The facility has an earthfill and concrete dam approximately 60 feet high and a span of 1,360 feet. The generating station has approximately 53 feet of head. The reservoir (Glenn Lake) has a storage capacity of 3,650 acre-feet. The concrete spillway crest is topped by 1.5-foot-high flashboards raising the normal maximum surface elevation to 272.6 feet. The concrete powerhouse is integrated into the base of the concrete gravity dam. The Project also includes an approximate 32 foot long concrete penstock, downstream fish passage, a switchyard and approximate 100 foot transmission line to the interconnection point with PSNH grid distribution system.

The site was historically used for the generation of electrical energy and was decommissioned in the 1970's. A major refurbishment was undertaken in 1985, which included the installation of two new turbines and generators and the replacement of all electrical and control equipment. The installed capacity of the facility is 3,480 kilowatts consisting of two Francis turbines with different output capacities of 2160 kW and 1320 kW. The Gregg's Falls project was historically operated as a peaking project but was changed to a run-of-river facility in 2000.

Land area occupied by the features described above is estimated at 0.64 acres. Approximately 27 acres of land is contained in a 200-foot zone extending around the impoundment. Most is not owned by Eagle Creek.

The following aerial illustrates the primary features of the project.

## Aerial Showing Site Layout



## **IV. REGULATORY AND COMPLIANCE STATUS**

### FERC License Exemption

The site was historically used for the generation of electrical energy and was decommissioned in the 1970's. The Gregg's Falls Project, owned at that time by the New Hampshire Water Resources Board and Gregg's Falls Hydroelectric Associates, was issued a license exemption (P-3180 - NH) from the Federal Energy Regulatory Commission (FERC) on July 21, 1983 for an installed capacity of 3,820 kW. An amendment was issued in 1998 to National Hydro, the then owner of Gregg's Falls, to update the project description including correction of the installed capacity to 3,474 kW. No other amendments have been issued.

A Memorandum of Agreement (2014 MOA) was signed on August 14, 2014 by Eagle Creek and the US Fish and Wildlife Service (USFWS) to address fish passage, flow management and federally endangered species. This MOA was endorsed by the NH Fish and Game Department (NHF&G) in a letter dated August 24, 2014.

### Water Quality Certification (WQC)

A Water Quality Certification has not been issued for the Project. See section VIII-B Water quality for further discussion of water quality.

## **V. PUBLIC COMMENT RECEIVED BY LIHI**

The deadline for submission of comments on the certification application was March 27, 2015. No public comments letters were received by LIHI.

## **VI. SUMMARY OF COMPLIANCE WITH CRITERIA AND ISSUES IDENTIFIED**

**Criterion A - Flows** – Currently the project is operating as run-of-river with a minimum flow of 20cfs as required by the USFWS (under Article 2) of the FERC License Exemption. Studies to be performed under the 2014 MOA will re-examine these minimum flow requirements and how these requirements will be monitored. A condition regarding these future studies is recommended.

**Criterion B - Water Quality** - Studies performed in 2013 under the guidance of New Hampshire Department of Environmental Services (NHDES) have confirmed compliance with certain water quality standards, but sampling equipment problems and high flows prohibited assessment of all parameters. Re-sampling in 2015 for the missing data will be conducted. Additional sampling for phosphorus conducted in late May 2015 confirmed that the impairment of the impoundment for phosphorus is caused by upstream sources.

**Criterion C - Fish Passage and Protection.** The MOA between Eagle Creek and USFWS contains provisions for downstream passage for river herring and American eel. These facilities will be constructed within 48 months of notification issued by either USFWS or NHF&G. No upstream passage has been identified as needed at the Project to date.

**Criterion D - Watershed Protection** - There are no requirements for a buffer zone, shoreline protection fund or shoreline management plan for the Facility. Thus, this Facility passes for this criterion. No additional term for certification is appropriate.

**Criterion E - Threatened and Endangered Species Protection** – No federal or state listed species, nor federally designated “critical habitat”, are expected to be impacted by Project operations, although one state Endangered species and one Species of Special Concern have been identified as found in the general site area.

**Criterion F - Cultural Resources** –No cultural (historical or archaeological resources) are expected to be impacted by Project operations. However, any site alterations will require cultural resources surveys as mandated by the New Hampshire Division of Historical Resources (NHDHR).

**Criterion G - Recreation** - Recreational facilities were not included as a requirement in the Project’s 1983 FERC License Exemption nor 1998 amendment. A boat ramp to Glen Lake is owned/maintained by the Goffstown. Access for fishing via safe areas around the Project is permitted free of charge by Eagle Creek.

**Criterion G - Facilities Recommended for Removal** - No resource agencies have recommended dam removal.

## **VII. GENERAL CONCLUSIONS AND REVIEWER RECOMMENDATION**

Based on my review of information submitted by the applicant, the additional documentation noted herein and comments obtained through my consultations with various resource agencies, I believe that this project should be conditionally certified at this time. Valid data for pH and DO does not currently exist as the 2013 sampling for these parameters was found to be unreliable, and therefore new sampling has been specified in the second Condition listed below. I suggest that certification of the Project with a certification term of five years be conditioned as noted below.

1. To confirm compliance with possible new flow requirements, the Facility Owner shall provide LIHI documentation of the USFWS’s required flow regime for the Project, the new deadline for the Operations and Flow Monitoring Plan and USFWS and NHF&GD approval of this Plan. These shall be provided within 30 days of each item completion. Also, the Facility Owner shall report to LIHI as part of its annual compliance report, a statement of compliance with the Operations and Flow Monitoring Plan and about the occurrence of any deviations from the Plan requirements.
2. To confirm that the project waters are meeting all numerical state standards, 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. LIHI certification is subject to withdrawal if these 2015 results do not meet the requirements of Criterion B-1.

3. To confirm compliance with the MOA regarding fish passage, the Facility Owner shall notify LIHI when the notification is received requiring construction of the downstream passage and protection facilities for river herring and American eel, and 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.)

## **THE GREGG'S FALLS PROJECT CONDITIONALLY MEETS THE LIHI CRITERIA FOR CERTIFICATION**

### **VIII. DETAILED CRITERIA REVIEW**

#### **A. FLOWS**

**Goal:** The Flows Criterion is designed to ensure that the river has healthy flows for fish, wildlife and water quality, including seasonal flow fluctuations where appropriate.

**Standard:** For instream flows, a certified facility must comply with recent resource agency recommendations for flows. If there were no qualifying resource agency recommendations, the applicant can meet one of two alternative standards: (1) meet the flow levels required using the Aquatic Base Flow methodology or the “good” habitat flow level under the Montana-Tennant methodology; or (2) present a letter from a resource agency prepared for the application confirming the flows at the facility are adequately protective of fish, wildlife, and water quality.

**Criterion:**

- 1) Is the facility in Compliance with Resource Agency Recommendations issued after December 31, 1986 regarding flow conditions for fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking conditions, and seasonal and episodic instream flow variations) for both the reach below the tailrace and all bypassed reaches?**

**CONDITIONALLY YES.** As discussed below, the project appears to meet these criteria thresholds under the current flow requirements.

Since 2000 the Project has been operating as a run-of-river facility. Article 2 of the License Exemption Order requires compliance with the terms and conditions specified by Federal and State Fish and Wildlife agencies. Eagle Creek reported that during the FERC exemption process, the USFWS stated that the minimum flow recommended at the Gregg's Falls project, based on historical streamflow, would be 20 cfs. The controls of the generating units are set to allow the wicket gates to open to pass 20 cfs when the unit goes offline.

Review of the last five years of minimum flow compliance letters filed with the FERC indicate a flow deviation in 2010 and 2012. Eagle Creek did not own or operate the project during these events. Based on the minimum flow compliance filings made by the previous owner, the minimum flow violation which occurred on July 26, 2012 was due to a decrease in the flood control releases from the US ACE Everett Dam upstream of the applicant's facility. The Project is only required to release inflow and was therefore not in violation of its License Exemption. With regard to the minimum flow violation reported in 2010 for calendar year 2009, Eagle Creek is unaware of why the units were taken offline, resulting in the minimum flow violation. Neither Eagle Creek nor the LIHI reviewer was able to find any documentation from the FERC where this was determined to be a license exemption violation.

The 2014 MOA contains a provision that the appropriate flow regime for the Project would be determined by the USFWS, as the MOA reports that a minimum flow release may not be needed at Gregg's Falls. It also identifies that an Operations and Flow Monitoring Plan for monitoring run-of-river operation and bypass/minimum flow releases was to have been prepared and submitted to USFWS for approval by February 2015, in part based on the identified flow regime. Discussion with Mr. John Warner of the USFWS on April 17, 2015, indicated that delays in completion of these MOA flow-related provisions are acceptable to the USFWS as insufficient flows are not a significant concern at Gregg's Falls. Nonetheless, a condition is recommended to provide LIHI with the results of these future findings to confirm criterion satisfaction.

*This Project Conditionally passes Criterion A - Flows- Go to B*

## B. WATER QUALITY

**Goal:** The Water Quality Criterion is designed to ensure that water quality in the river is protected.

**Standard:** The Water Quality Criterion has two parts. First, an Applicant must demonstrate that the facility is in compliance with state water quality standards, either through producing a recent Clean Water Act Section 401 certification or providing other demonstration of compliance. Second, an applicant must demonstrate that the facility has not contributed to a state finding that the river has impaired water quality under Clean Water Act Section 303(d).

***Criterion:***

**1) Is the Facility either:**

- a) In compliance with all conditions issued pursuant to a Clean Water Act Section 401 water quality certification issued for the facility after December 31, 1986? Or in compliance with the quantitative water quality standards established by the state that support designated uses pursuant to the federal Clean Water Act in the Facility area and in the downstream reach?

**Partially, Conditionally yes.** - A Water Quality Certificate was not issued for the project. In 2013, Eagle Renewable worked with the NHDES to develop a water quality monitoring program to confirm that the facility area and downstream reach are in compliance with state standards. (Note discussion below about the 303(d) listing of Glen Lake, the Project's impoundment.) A water-sampling program of the Piscataquog River was completed in September 2013 following NHDES's sampling protocol created for the project to the extent possible. Due to environmental conditions, flows in the Piscataquog River never fell to the 3X7Q10 value of 26.4 cfs required by NHDES in order to monitor dissolved oxygen content and malfunction of the data logger also occurred compromising some data accuracy. Thus the 2013 sampling program was incomplete.

Based on several conversations between the LIHI Reviewer and Ted Walsh of NHDES, Mr. Walsh confirmed that the total phosphorus and chlorophyll-a samples from 2013 were collected in accordance with the sampling protocol and appear to show satisfaction of state standards for chlorophyll-a. However, the median total phosphorus levels measured in 2013 (14ug) within the impoundment are above state standards for a mesotrophic lake (12 ug). Mr. Walsh stated that the hydropower operation is not likely affecting the phosphorus levels in the area, whereas it is unclear whether the presence of the dam is causing, in part, the elevated phosphorus levels or if upstream sources(s) are. He also stated that in addition to DO sampling, more rounds of chlorophyll-a sampling, as well as pH and conductivity monitoring, should also be collected to confirm standard compliance for both the impoundment and downstream reach. He committed to working with Eagle Creek to re-establish the 2015 sampling requirements. The facility owner has agreed to conduct follow-up sampling in 2015 to obtain the data found to be incomplete in 2013. As noted below, sampling for phosphorus was conducted in late May 2015, while the remaining sampling will need to be scheduled when appropriate flows are present. A condition regarding this follow-up sampling has been recommended.

## Go to B2

- 2) Is the Facility area or the downstream reach currently identified by the state as not meeting water quality standards (including narrative and numeric criteria and designated uses) pursuant to Section 303(d) of the Clean Water Act?**

**YES.** The Piscataquog River in Goffstown is listed as impaired for pH based on latest 303(d) listing issued in 2012. Glen Lake is not on the 303d list, however Ted Walsh of NHDES stated it is not in compliance with state standards for total phosphorus. The pH impairment of the river is likely not a concern according to NHDES communications.

## Go to B3

- 3) If the answer to question B.2. is yes, has there been a determination that the Facility is not a cause of that violation?**

**YES.** Based on NHDES recommendations, additional sampling was conducted on May 19, 2015 in the impoundment and upstream areas for phosphorus. As noted in the emails from June 2015 contained in Appendix B, Ted Walsh of NHDES has confirmed that upstream sources are the cause of the impairment status of the lake for total phosphorus.

***Yes – Data at this Time Demonstrates Conditional Compliance with Criterion B - Water Quality - Go to C***

## **C. FISH PASSAGE AND PROTECTION**

**Goal:** The Fish Passage and Protection Criterion is designed to ensure that, where necessary, the facility provides effective fish passage for riverine, anadromous and catadromous fish, and protects fish from entrainment.

**Standard:** For riverine, anadromous and catadromous fish, a certified facility must be in compliance with both recent mandatory prescriptions regarding fish passage and recent resource agency recommendations regarding fish protection. If anadromous or catadromous fish historically passed through the facility area but are no longer present, the facility will pass this criterion if the Applicant can show both that the fish are not extirpated or extinct in the area due in part to the facility and that the facility has made a legally binding commitment to provide any future fish passage recommended by a resource agency. When no recent fish passage prescription exists for anadromous or catadromous fish, and the fish are still present in the area, the facility must demonstrate either that there was a recent decision that fish passage is not necessary for a valid environmental reason, that existing fish passage survival rates at the facility are greater than 95% over 80% of the run, or provide a letter prepared for the application from the U.S. Fish and Wildlife Service or the National Marine Fisheries Service confirming the existing passage is appropriately protective.

***Criterion:***

- 1) Is the facility in compliance with Mandatory Fish Passage Prescriptions for upstream and downstream passage of anadromous and catadromous fish issued by Resource Agencies after December 31, 1986?**

**CONDITIONALLY, YES.** A Memorandum of Agreement between Eagle Creek and USFWS was signed on August 14, 2014 which addresses fish passage and minimum flow requirements for a number of Eagle Creek Projects, including Gregg's Falls. A letter dated August 27, 2014 from NHF&G stating their concurrence with the recommendations and proposed actions under the MOA. This MOA contains provisions for downstream passage for river herring and American eel, requiring these facilities to be constructed within 48 months of notification issued by either USFWS or NHF&G. To date this notification has not been issued. The MOA does recommend that the existing salmon smolt downstream passage at Gregg's Falls be discontinued as salmon are no longer stocked upstream. No upstream passage has been identified as needed at the Project to date. There is no upstream fish passage at Kelley's Falls Hydropower Project, the next dam downstream of Gregg's Falls. A condition is recommended that LIHI be notified when the notification is received and be provided updates on compliance with all MOA fish passage requirements.

***Go to C5***

- 2) Are there historic records of anadromous and/or catadromous fish movement through the facility area, but anadromous and/or catadromous fish do not presently move**

**through the Facility area (e.g., because passage is blocked at a downstream dam or the fish run is extinct)?**

**NOT APPLICABLE**

- a) **If the fish are extinct or extirpated from the Facility area or downstream reach, has the Applicant demonstrated that the extinction or extirpation was not due in whole or part to the Facility?**

**NOT APPLICABLE**

- b) **If a Resource Agency recommended adoption of upstream and/or downstream fish passage measures at a specific future date, or when a triggering event occurs (such as completion of passage through a downstream obstruction or the completion of a specified process), has the Facility owner/operator made a legally enforceable commitment to provide such passage?**

**NOT APPLICABLE**

- 5) Is the Facility in Compliance with Mandatory Fish Passage Prescriptions for upstream or downstream passage of riverine fish?**

**NOT APPLICABLE.** No fish passage requirements have been issued for riverine fish. *Go to C6*

- 6) Is the facility in Compliance with Resource Agency Recommendations for Riverine, anadromous and catadromous fish entrainment protection, such as tailrace barriers?**

**CONDITIONALLY, YES.** Provisions for protection of river herring and American eels from impingement and/or entrainment to assist in safe passage are contained in the MOA. Measures specified for American eel include installation of a full trashrack/screen system with  $\frac{3}{4}$ -inch-clear spacing and a desired approach velocity equal to or less than 1.5 feet per second, unless site specific conditions prohibit such measures. If that occurs, the USFWS will consider a variance to this requirement. Specific measures for river herring must be developed based on consultation with the USFWS and final design be approved by the USFWS once the agency notification identifying the need for these facilities has been received by Eagle Creek. A condition is recommended that LIHI be notified when the notification is received and be provided updates on compliance with the protection measure requirements.

*The Project Conditionally Passes Criterion C - Fish Passage and Protection - Go to D*

**D. WATERSHED PROTECTION**

**Goal:** The Watershed Protection criterion is designed to ensure that sufficient action has been taken to protect, mitigate and enhance environmental conditions in the watershed.

**Standard:** A certified facility must be in compliance with resource agency and Federal Energy Regulatory Commission (“FERC”) recommendations regarding watershed protection, mitigation or enhancement. In addition, the criterion rewards projects with an extra three years of certification that have a buffer zone extending 200 feet from the high water mark or an approved watershed enhancement fund that could achieve within the project’s watershed the ecological and recreational equivalent to the buffer zone and has the agreement of appropriate stakeholders and state and federal resource agencies. A Facility can pass this criterion, but not receive extra years of certification, if it is in compliance with both state and federal resource agencies recommendations in a license-approved shoreland management plan regarding protection, mitigation or enhancement of shorelands surrounding the project.

***Criterion:***

**1 ) Is there a buffer zone dedicated for conservation purposes (to protect fish and wildlife habitat, water quality, aesthetics and/or low-impact recreation) extending 200 feet from the average annual high water line for at least 50% of the shoreline, including all of the undeveloped shoreline?**

**NO, go to D2**

**2 ) Has the facility owner/operator established an approved watershed enhancement fund that: 1) could achieve within the project’s watershed the ecological and recreational equivalent of land protection in D.1), and 2) has the agreement of appropriate stakeholders and state and federal resource agencies?**

**NO, go to D3**

**3 ) Has the facility owner/operator established through a settlement agreement with appropriate stakeholders, with state and federal resource agencies’ agreement, an appropriate shoreland buffer or equivalent watershed land protection plan for conservation purposes (to protect fish and wildlife habitat, water quality, aesthetics and/or low impact recreation)**

**NO, Go to D4**

**4 ) Is the facility in compliance with both state and federal resource agencies recommendations in a license approved shoreland management plan regarding protection, mitigation or enhancement of shorelands surrounding the project.**

**NOT APPLICABLE.** No Shoreland Management Plan, buffer zone or enhancement fund was required for the Gregg’s Falls Project.

***The Project Passes Criterion D - Watershed Protection - Go to E***

**E. THREATENED AND ENDANGERED SPECIES PROTECTION**

***Goal:*** The Threatened and Endangered Species Protection Criterion is designed to ensure that the facility does not negatively impact state or federal threatened or endangered species.

**Standard:** For threatened and endangered species present in the facility area, the Applicant must either demonstrate that the facility does not negatively affect the species, or demonstrate compliance with the species recovery plan and receive long term authority for a “take” (damage) of the species under federal or state laws.

***Criterion:***

**1) Are threatened or endangered species listed under state or federal Endangered Species Acts present in the Facility area and/or downstream reach?**

**YES.** The state endangered Brook Floater Mussel and Wood Turtle, a state Species of Special Concern, are reported in the Project vicinity.

In both a letter dated January 7, 2013 and the 2014 MOA, the USFWS indicated that no federally endangered, threatened species or critical habitat exist within the Gregg’s Falls project boundary.

**Go to E2**

**2) If a recovery plan has been adopted for the threatened or endangered species pursuant to Section 4(f) of the Endangered Species Act or similar state provision, is the Facility in Compliance with all recommendations in the plan relevant to the Facility?**

**NA.** A recovery plan for the Brook Floater Mussel has not been developed.

***Go to E3***

**3) If the Facility has received authority to Incidentally Take a listed species through: (i) Having a relevant agency complete consultation pursuant to ESA Section 7 resulting in a biological opinion, a habitat recovery plan, and/or (if needed) an incidental take statement; (ii) Obtaining an incidental take permit pursuant to ESA Section 10; or (iii) For species listed by a state and not by the federal government, obtaining authority pursuant to similar state procedures; is the Facility in Compliance with conditions pursuant to that authorization?**

**NA...** Neither a Biological Opinion or Incidental Take Permit have been issued for the Gregg’s Falls Project.

***Go to E5***

**5) If E2 and E3 are not applicable, has the Applicant demonstrated that the Facility and Facility operations do not negatively affect listed species?**

**YES.** Both the Brook Floater Mussel and Wood Turtle were listed species at the time the 2014 MOA was signed, and the MOA was endorsed by NHF&G, as noted in their letter dated August 27, 2014. Therefore it can reasonably be assumed that the run-of-river operation approved for the facility in the MOA is appropriately protective of these species. This was confirmed based on a

email from Carol Henderson, Environmental Review Coordinator with the NHF&G on April 24, 2015, that stated Project operations are not expected to negatively impacts either state listed species. See Appendix B for this email.

***The Project Passes Criterion E - Threatened and Endangered Species Protection - Go to F***

## **F. CULTURAL RESOURCE PROTECTION**

**Goal:** The Cultural Resource Protection Criterion is designed to ensure that the facility does not inappropriately impact cultural resources.

**Standard:** Cultural resources must be protected either through compliance with FERC license provisions, or through development of a plan approved by the relevant state or federal agency.

***Criterion:***

- 1) If FERC-regulated, is the Facility in compliance with all requirements regarding Cultural Resource protection, mitigation or enhancement included in the FERC license or exemption?**

**YES.** The Applicant reported that no known sites of historic or archeological importance were discovered during the FERC licensing process. No cultural resource management plans were required by the License Exemption. No cultural (historical or archaeological resources) are expected to be impacted by 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). However, in this response, NHDHR has required that cultural resources surveys will need to be conducted if any site alterations are planned. See Appendix B for this review.

***The Project Passes Criterion F - Cultural Resource Protection - Go to G***

## **G. RECREATION**

**Goal:** The Recreation Criterion is designed to ensure that the facility provides access to the water without fee or charge, and accommodates recreational activities on the public's river.

**Standard.** A certified facility must be in compliance with terms of its FERC license or exemption related to recreational access, accommodation and facilities. If not FERC-regulated, a certified facility must be in compliance with similar requirements as recommended by resource agencies. A certified facility must also provide the public access to water without fee or charge.

***Criterion:***

- 1) If FERC-regulated, is the Facility in Compliance with the recreational access, accommodation (including recreational flow releases) and facilities conditions in its FERC license or exemption?**

**2) If not FERC-regulated, does the Facility provide recreational access, accommodation (including recreational flow releases) and facilities, as Recommended by Resource Agencies or other agencies responsible for recreation?**

**NA.** Recreational facilities and access were not included as a requirement in the Project's 1983 FERC License Exemption or 1998 amendment. A boat ramp to Glen Lake is owned and maintained by the town of Goffstown.

*Go to G3*

**3) Does the Facility allow access to the reservoir and downstream reaches without fees or charges?**

**YES.** The application denotes that access for fishing via safe areas around the Project is permitted free of charge by Eagle Creek.

*The Project Passes Criterion G - Recreation - Go to G*

## **H. FACILITIES RECOMMENDED FOR REMOVAL**

**Goal:** The Facilities Recommended for Removal Criterion is designed to ensure that a facility is not certified if a natural resource agency concludes it should be removed.

**Standard:** If a resource agency has recommended removal of a dam associated with the facility, the facility will not be certified.

***Criterion:***

**1) Is there a Resource Agency recommendation for removal of the dam associated with the Facility?**

**NO.** No resource agency has recommended removal of this dam. As previously noted, the dam is owned by the NHDES.

*The Project Passes Criterion H -Facilities Recommended for Removal*

## APPENDIX A

### INDEX OF PRIMARY CONTACT INFORMATION FOR LIHI CRITERIA

The following lists direct consultation initiated by the Reviewer and a summary of these communications

<b>LIHI CRITERION</b>	<b>PRIMARY CONTACT INFORMATION</b>
<b>Flows</b>	John Warner, USFWS
<b>Water Quality</b>	Ted Walsh, NHDES
<b>Fish Passage &amp; Protection</b>	John Warner, USFWS
<b>Watershed Protection</b>	None required
<b>Threatened &amp; Endangered Species</b>	Carol Henderson, NHF&G
<b>Cultural Resources Protection</b>	None required
<b>Recreation</b>	None required
<b>Facilities Recommended for Removal</b>	None required

## **RECORD OF CONTACTS**

**NOTE:** The information presented below was gathered by telephone communication between the Reviewer and agency representative listed below. Key email communications are contained in Appendix B.

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Date: 4/17/15

Contact Person: John Warner; USFWS

Contact Information: 603-223-2541 ext 15; john\_warner@fws.gov

Area of Expertise: Fisheries

John Warner acknowledge that the deadlines for the USFWS assessment of the appropriate flow regime for the Gregg's Falls Project has slipped, and he is uncertain at this time what the new deadline will be. He stated that this assessment will be conducted since there may not be a need for the current 20 cfs minimum flow requirement. Until that assessment is completed, a new deadline for development of the Operations and Flow Monitoring Plan cannot be identified. The Plan would address how the run-of-river operations would be monitored for compliance. He stated that these delays are acceptable to the USFWS as insufficient flows are not a significant concern at Gregg's Falls. He acknowledged that shut-down of the current downstream passage for salmon smolt is appropriate, although its cessation is not associated with any requirements for river herring passage as may be (incorrectly) interpreted from how it is represented in Appendix A to the MOA.

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Date: 4/16, 23 and 5/1/15

Contact Person: Ted Walsh

Contact Information: 603-

Area of Expertise: Water quality

Mr. Walsh confirmed that the total phosphorus and chlorophyll-a samples from 2013 were collected in accordance with the sampling protocol and appear to show satisfaction of state standards for chlorophyll-a. However, the median total phosphorus levels measured in 2013 (14ug) within the impoundment are above state standards for a mesotrophic lake (12 ug). Mr. Walsh stated that the hydropower operation is not likely affecting the phosphorus levels in the area, whereas it is unclear whether the presence of the dam is causing, in part, the elevated phosphorus levels or if upstream sources(s) are. He recommended that additional sampling for phosphorus at the 2013 locations as well as yet to be selected upstream locations to assist in understanding the cause of the high phosphorus levels. He also stated that in addition to DO sampling, more rounds of chlorophyll-a sampling, as well as pH and conductivity monitoring, should also be collected to confirm standard compliance for both the impoundment and downstream reach. He committed to working with Eagle Creek to re-establish the 2015 sampling requirements and to review the results for conformance with state requirements. Several emails are contained in Appendix B on this issue.

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Date: 4/24/15

Contact Person: Carol Henderson, NHF&G

Contact Information: 603-271-3511; carol.henderson@wildlife.nh.gov

Area of Expertise: Endangered Species

An email was received from Carol Henderson confirming that no impacts are expected to occur to Brook Floater Mussel (state endangered species) or Wood Turtle (state species of concern) from current plant operations provided that the requirements of the MOA for run-of-river operation is adhered to. The email is contained in Appendix B.

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Date: 5/11/15

Contact Person: Mike Sale

Contact Information: 865-719-4794

Area of Expertise: LIHI Executive Director

Mike Sale confirmed to me that based on discussions he held with Ted Walsh (NHDES) and Steve Hickey (Applicant's representative) that the phosphorus sampling will be conducted no later than May 22 and that the results should be available within two days following sampling.

## **APPENDIX B**

### **KEY WRITTEN COMMUNICATIONS NOT PREVIOUSLY PROVIDED TO LIHI AS PART OF THE APPLICATION**

The following written correspondence was incorporated into the certification assessment for this project. These documents were obtained during the course of the project's certification review.



The State of New Hampshire  
**DEPARTMENT OF ENVIRONMENTAL SERVICES**

Thomas S. Burack, Commissioner



August 2, 2013

Stephen Hickey  
Essex Hydro Associates, LLC  
55 Union Street, 4th Floor  
Boston, MA 02108

RE: Water Quality Monitoring Recommendations for Low Impact Hydropower Institute Certification of the Gregg's Falls Hydroelectric Project (FERC Exemption No. 3180), Piscataquog River

Dear Steve:

We understand that Essex Hydro Associates is applying on behalf of Eagle Creek Renewables L.L.C. for Low Impact Hydropower Certification from the Low Impact Hydropower Institute (LIHI) for the Gregg's Falls Hydroelectric Project (FERC Exemption No. 3180), on the Piscataquog River in Pembroke, NH. We further understand that to receive LIHI certification, you need a statement from the New Hampshire Department of Environmental Services (DES) stating that the project is not causing or contributing to violations of state water quality standards. Table 1 provides the current assessment status of the parameters of concern included in the monitoring plan outlined in a later section of this letter. The information provided in Table 1 is derived from DES's draft 2012 305(b)/303(d) report.

Table 1. 2012 Water Quality Assessment Status for the Piscataquog River at the Gregg's Falls Hydroelectric Project

Assessment Unit	Location	Parameter	2012 305(b)/303(d) Assessment Status	
NHLAK700060607-01-01	Gregg's Falls Hydroelectric Project Impoundment	Dissolved Oxygen (mg/L)	Potentially Supporting <sup>A</sup>	
		Dissolved Oxygen (% Saturation)	Potentially Supporting <sup>A</sup>	
		Chlorophyll-a	Primary Contact Recreation	Aquatic Life Use
	Glen Lake		Potentially Supporting <sup>A</sup>	Potentially Not Supporting <sup>A</sup>
	Total Phosphorus	Potentially Not Supporting <sup>A</sup>		
	Water Temperature	Limited Data Not Applicable <sup>B</sup>		
NHIRV700060607-17	Downstream of Gregg's Falls Hydroelectric Project	Dissolved Oxygen (mg/L)	Potentially Supporting <sup>A</sup>	
		Dissolved Oxygen (% Saturation)	Potentially Supporting <sup>A</sup>	
		Chlorophyll-a	Primary Contact Recreation	Aquatic Life Use
			Potentially Supporting <sup>A</sup>	No Data
		Total Phosphorus	No Data	
		Water Temperature	Limited Data Not Applicable <sup>B</sup>	

<sup>A</sup> DES has some data for this parameter but not enough to make a full determination if the waterbody is meeting water quality standards

<sup>b</sup> Although there is currently no numerical water quality criteria for water temperature, DES is in the process of collecting biological and water temperature data that will contribute to the development of a procedure for assessing rivers and stream based on water temperature and its corresponding impact to the biological integrity of the waterbody.

In order for DES to determine if the subject hydroelectric project is causing or contributing to water quality standard violations, additional monitoring and information is needed. In general, data / information is needed to address the following water quality concerns that are typically associated with hydropower projects:

1. Impact on ambient water quality criteria;
2. Impact of pond fluctuations on aquatic habitat;
3. Maintenance of adequate minimum flows to protect downstream aquatic life; and
4. Adequate upstream and downstream fish passage.

Species are provided below:

#### 1. Water Quality

Water quality parameters most vulnerable to hydroelectric projects typically include dissolved oxygen (DO), temperature, chlorophyll-a and total phosphorus. Samples are typically taken upstream and downstream of the dam. Based on our current understanding of the project, the following is recommended.

Table 2 provides proposed water quality sampling locations for the river segments of concern. Recommended parameters and frequency of monitoring are provided in Table 3 below.

**Table 2. Recommended Sampling Locations for Water Quality Monitoring – Gregg's Falls Hydroelectric Project**

Assessment Unit	Station Location	NHDES Station ID	Assessment Unit Size/Acreage
NHLAK700060607-01-01	Gregg's Falls Hydroelectric Project Impoundment - Glen Lake  200 Feet Upstream of Dam <sup>c</sup>	GLEGOF-GEN	137 acres
NHRIV700060607-17	Downstream of Gregg's Falls Hydroelectric Project  Henry Bridge Road Bridge	04-PQG	3.7 miles

<sup>c</sup> The exact locations of the upstream water quality monitoring stations should be determined after a field visit is conducted. In both cases sampling locations should be identified that will allow the sample to be collected from the thalweg of the river (central/deepest portion of the channel).

**Table 3. Recommended Water Quality Monitoring Plan for the Gregg's Falls Hydroelectric Dam**

Site ID	Location	Purpose	Parameters	Frequency
GLEGOF-GEN	Gregg's Falls Hydroelectric Project Impoundment - Glen Lake	Determine water quality impacts of river being impounded by the Gregg's Falls Hydroelectric Project	Continuous Dissolved Oxygen (mg/L and % Saturation) and Continuous Water Temperature (collected with Dataloggers)	At least 10 days of data collected at 15 minute increments during period of low flow ( $\leq 3 \times 7Q10$ ) and high temperatures (preferably over 23 degrees C). Dataloggers should be set at the bottom of the epilimnion (if stratified) or at 25% depth if not stratified.
			Instantaneous Dissolved Oxygen (mg/L and % Saturation) and Water Temperature	2 vertical profiles collected on 2 days when continuous dataloggers are deployed. Profiles should be at 1 meter increments from surface to bottom
			Total Phosphorus and Chlorophyll-a	10 samples - once a week for 10 weeks (from May 24 through September 15)
04-PQG	Henry Bridge Road Bridge	Determine water quality condition downstream of the Gregg's Falls Hydroelectric Project	Continuous Dissolved Oxygen (mg/L and % Saturation) and Continuous Water Temperature (collected with Dataloggers)	At least 10 days of data collected at 15 minute increments during period of low flow ( $\leq 3 \times 7Q10$ ) and high temperatures (preferably over 23 degrees C).
			Total Phosphorus and Chlorophyll-a	10 samples - once a week for 10 weeks (from May 24 through September 15)

Prior to sampling, a sampling plan should be submitted to DES for approval which includes sampling locations, parameters to be sampled, sample timing and frequency, sampling and laboratory analysis protocols and quality control provisions. DES can provide examples of sampling plans upon request.

For each sampling station and event the following should be provided:

- Site map with longitudinal and latitudinal coordinates
- Site description including weather, vegetation, flow conditions, and any other site conditions that would potentially impact water quality
- Photographs of each monitoring location.

With regards to quality assurance/quality control, the following is recommended:

- During two sampling events replicate samples should be collected for laboratory analysis.
- A suite of field blanks should be collected for laboratory analysis during one sampling event.
- Multiparameter dataloggers and handheld meters should be calibrated for dissolved oxygen before each sampling event on-site according to the manufacturer's instructions.
- Field sampling quality control should consist of 1) replicate analysis, 2) maintenance records, 3) field calibration and record of calibration, and 4) record of equipment used.
- Instrument and equipment maintenance should include: 1) checking field test kits to be sure all reagents are in good working order and are not beyond expiration dates, 2) replacing reagents in accordance with manufacturer's recommendations, 3) calibrating

- equipment before each sampling event, and 4) recording of maintenance and calibration activities.
- Chain of custody forms and information regarding laboratory standard methods should be submitted to DES with the data.

The sampling plan should also specify that water quality data will be collected under critical low flow/high water temperature conditions. The United States Geologic Services maintains a stream gage (USGS 01091500) in Goffstown, NH on the Piscataquog River just downstream of the Gregg's Falls Hydroelectric Project. Discharge data from this gage can be used to determine when the Piscataquog River at the Gregg's Falls Hydroelectric Project is flowing below 3 x 7Q10 low flow conditions. The 3 X 7Q10 value for USGS stream gage 01091500 is 26.4 cfs. During the sampling period the Gregg's Falls Hydroelectric Project should be operating under normal operating procedures.

Finally, the plan should specify that all data should be submitted to DES electronically and in a form that can be automatically uploaded into the DES Environmental Monitoring Database (EMD). Information on uploading data to the EMD can be found at <http://des.nh.gov/organization/divisions/water/wmb/emd/index.htm> or by contacting Melanie Titus at (603) 271-1152 or [Melanie.Titus@des.nh.gov](mailto:Melanie.Titus@des.nh.gov).

## 2. Pond Fluctuation

Pond fluctuations due to operation of hydroelectric projects can negatively impact aquatic habitat and aquatic life. To determine the impact of pond fluctuations on aquatic life, the following is typically needed:

- a. A description and schematic of the project including the dam height, length, control structures and elevations, crest elevation, flashboard elevations, and impoundment depth, elevation, area and volume at full pool, normal and maximum drawdown elevations;
- b. Timing, frequency, duration and magnitude of drawdowns
- c. Historical water level fluctuations over the past 5 years
- d. Map of fringing wetlands preferably delineated from high-resolution aerial photography
- e. An estimate of the average and maximum percent of the littoral zone (preferably based on accurate bathymetry) that is dewatered as well as average and maximum duration of dewatering for each quarter of the calendar year

## 3. Minimum Flows

To determine if adequate flow to support aquatic life is provided downstream of the facility, the following is typically needed:

- a. Minimum flow requirements through the penstock and bypass reach;
- b. Length of bypass reach (include pictures);
- c. Information on how the minimum flows were determined;
- d. Information on how compliance with minimum flow requirements is determined; and
- e. Documentation proving compliance with minimum flow requirements for the past five years.

Based on the data received, additional analyses may be required.

#### 4. Fish Passage

To address fish passage concerns, DES will need notification from the New Hampshire Fish and Game Department (NHFG) and the U.S. Fish and Wildlife Service (USFWS) stating that they are satisfied with upstream and downstream fish passage provisions associated with the subject project. Copies of correspondence with NHFG and USFWS should be provided to DES. Contact information is provided below.

Carol Henderson and John Magee  
NH Fish and Game Department  
11 Hazen Drive, Concord, NH 03301  
603-271-3511  
[carol.henderson@wildlife.nh.gov](mailto:carol.henderson@wildlife.nh.gov)

John P. Warner, Energy/Hydropower Coordinator  
New England Field Office, U.S. Fish and Wildlife Service  
70 Commercial Street, Suite 300  
Concord, NH 03301  
(603) 223-2541 - ext.15  
[John\\_Warner@fws.gov](mailto:John_Warner@fws.gov)

Once all of the data has been submitted, NHDES will make a determination regarding compliance of the project with NH water quality standards.

It should also be noted that the Gregg's Falls dam is owned by DES and is leased to Eagle Creek Renewables L.L.C. for purposes of hydroelectric power generation. Under the terms of the lease, rent, which Eagle Creek Renewables L.L.C. pays to DES, is a percentage of the gross revenue from power produced at the leased facility. Gross revenue includes any additional revenue that Eagle Creek Renewables L.L.C. may receive as a result of the LIHI certification, and Eagle Creek LLC must report the additional revenue to DES for purposes of computing rent due under the lease.

Should you have any questions regarding these recommendations or wish to arrange a meeting, please contact me at (603)271-2083 ([ted.walsh@des.nh.gov](mailto:ted.walsh@des.nh.gov)).

Sincerely,



Ted Walsh, Surface Water Monitoring Coordinator  
NH DES Watershed Management Bureau

cc: Melanie Titus, NHDES  
James Gallagher, Chief Engineer, Dam Bureau  
Dr. Michael J. Sale, Executive Direction, Low Impact Hydropower Institute  
Carol Henderson, New Hampshire Fish and Game  
John Magee, New Hampshire Fish and Game  
John Warner, USFWS

## **Steve Hickey**

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**From:** Walsh, Ted  
**Sent:** Thursday, January 15, 2015 11:51 AM  
**To:** Steve Hickey  
**Subject:** RE: 2015 LIHI WQ sampling at Gregg's Falls (FERC No. 3180)

Steve,

DES will work with the applicant in 2015 to reassess the water quality and provide guidance to ensure that the data will be useful in making a determination if the project is causing or contributing to water quality standard violations.

Ted

Ted Walsh, Surface Water Monitoring Coordinator  
NHDES, Watershed Management Bureau  
29 Hazen Drive, P.O. Box 95  
Concord, New Hampshire 03301-0095  
(p) 603-271-2083  
(F) 603-271-7894  
email: [twalsh@des.state.nh.us](mailto:twalsh@des.state.nh.us)

VRAP and NH Rivers Twitter Feed: [https://twitter.com/#!/NHDES\\_Rivers](https://twitter.com/#!/NHDES_Rivers)

**From:** Steve Hickey [mailto:[sjh@essexhydro.com](mailto:sjh@essexhydro.com)]  
**Sent:** Thursday, January 15, 2015 11:22 AM  
**To:** Walsh, Ted  
**Subject:** 2015 LIHI WQ sampling at Gregg's Falls (FERC No. 3180)

Ted,

As you are aware, in 2013 Essex Power Services Inc., agent for Eagle Creek Renewable Energy LLC ("the applicant"), owner and operator of the Gregg's Falls hydroelectric project ("the project") located on the Piscataquog river in Goffstown, NH conducted water quality testing as required by your sampling plan ("the plan") for the project dated August 2, 2013. The plan is attached for your reference. The water quality sampling was done to confirm the project does not cause or contribute to violations of New Hampshire State water quality standards. This is required in the applicant's application to the Low Impact Hydropower Institute for certification of the project as a low impact facility. Due to environmental conditions in 2013 beyond the applicant's control (i.e. high flows), the sampling did not occur at or below the 3X7Q10 flows required in the plan. Data was collected at higher flows and provided to you for your review. Upon your review of the data in 2015, it became apparent that the data loggers used in the impoundment and tailrace suffered from a mechanical malfunction calling into question the validity of the results.

Please confirm by responding to this email that you will work with the applicant in 2015 to re assess the water quality conditions above and below the Gregg's Falls hydroelectric project. The applicant will re conduct the sampling as required by your August 2, 2013 sampling plan, or an updated plan if so required and provide the results to you for your review.

Thank you and please feel free to contact me with any questions.

Steve

Stephen Hickey  
Essex Power Services, Inc.  
agent for Eagle Creek Renewable Energy LLC  
55 Union Street, 4<sup>th</sup> Floor

Boston, MA 02108

tel: 617-367-0032

fax: 617-367-3796

## Patricia McIlvaine

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**From:** Walsh, Ted <Ted.Walsh@des.nh.gov>  
**Sent:** Wednesday, June 10, 2015 11:13 AM  
**To:** 'Steve Hickey'  
**Cc:** Patricia McIlvaine; Mike Sale  
**Subject:** RE: Greggs Falls Phosphorus results

Steve,

Yes I agree with your statement and clarification.

Ted

---

**From:** Steve Hickey [mailto:[sjh@essexhydro.com](mailto:sjh@essexhydro.com)]  
**Sent:** Wednesday, June 10, 2015 10:41 AM  
**To:** Walsh, Ted; Steve Hickey  
**Cc:** Patricia McIlvaine; Mike Sale  
**Subject:** RE: Greggs Falls Phosphorus results

Ted,

To clarify, the initial testing completed in the Greggs Falls impoundment showed levels of phosphorus, potentially in violation of NH State Water Quality Standards. The testing we completed on the inflow to Glen Lake, per the below results, shows similar levels of phosphorus (aka the inflow to Glen Lake already has high levels of phosphorus, regardless of the existence of the dam and run-of-river Greggs falls hydroelectric project). Therefore, the Greggs Falls project is not at fault for the level of phosphorus in Glenn Lake.

Thank you,

Steve

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**From:** Walsh, Ted [mailto:[Ted.Walsh@des.nh.gov](mailto:Ted.Walsh@des.nh.gov)]  
**Sent:** Wednesday, June 10, 2015 10:24 AM  
**To:** 'Steve Hickey'  
**Cc:** Patricia McIlvaine; Mike Sale  
**Subject:** RE: Greggs Falls Phosphorus results

Steve,

I have attached a copy of the results from the 5/19 total phosphorous sampling in the vicinity of the Greggs Falls hydro dam (the chlorophyll-a data is not available yet). The table below summarizes the sample locations and results. The phosphorus levels on this day were consistent upstream and downstream of Glen Lake and the Greggs Falls hydroelectric dam. These results are consistent with the sampling that was done as part of LIHI certification in 2013. Hope this helps. Please let me know if you have further questions.

Ted

Station ID	Location	Total Phosphorus (mg/L)
04-PQG	Henry Bridge Rd (~0.5 km downstream of dam)	0.0133
06-PQG	Rte 114 Bridge (~0.5 km upstream of Glen Lake)	0.0143
07-PQG	Parker Road Bridge (~2 km upstream of Glen Lake and just	0.0140

	upstream of confluence with South Branch	
00A-SOP	South Branch upstream of confluence with Piscataquog	0.0169

---

**From:** Steve Hickey [<mailto:sjh@essexhydro.com>]  
**Sent:** Wednesday, June 10, 2015 10:00 AM  
**To:** Walsh, Ted  
**Cc:** Patricia McIlvaine; Mike Sale  
**Subject:** Greggs Falls Phosphorus results

Hi Ted,

I heard you received the results from the additional phosphorus testing completed at Gregg's Falls. Can you interpret those results for us?

Thank you,  
Steve

Stephen Hickey  
Essex Power Services, Inc.  
agent for Eagle Creek Renewable Energy LLC  
55 Union Street, 4<sup>th</sup> Floor  
Boston, MA 02108  
tel: 617-367-0032

## Patricia McIlvaine

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**From:** Henderson, Carol <Carol.Henderson@wildlife.nh.gov>  
**Sent:** Friday, April 24, 2015 9:02 AM  
**To:** Patricia McIlvaine  
**Subject:** FW: Following up on the Gregg's Falls Project  
**Attachments:** Approval.gn let.pdf

Hello Pat:

The NH Fish and Game Department concurs with the USFWS protective measures concerning project operations and the listed 2 State species, as outlined within the MOA that was signed with Eagle Creek Renewables. So, yes, you can assume that the Department confirms the protective measures are sufficient as long as the project is operated in accordance with the signed MOA. If you have any other comments or questions, please do not hesitate to contact me at 603-271-1138. Thank you for reaching out and closing the loop. Regards, Carol Henderson, NH Fish and Game Department, Environmental Review Coordinator

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**From:** Patricia McIlvaine [<mailto:Pat.McIlvaine@wright-pierce.com>]  
**Sent:** Thursday, April 23, 2015 9:59 AM  
**To:** Henderson, Carol  
**Subject:** Following up on the Gregg's Falls Project

Hi Carol

Pursuant to the voice message I just left you, I just wanted to close the loop on any concerns you may have regarding impacts to either the Brook Floater Mussel or Wood Turtle from operation of the Gregg's Falls hydropower project in Goffstown NH. More specifically, do you believe that the protective measures as defined in the MOA Eagle Creek Renewables signed with the USFWS are sufficient to protect these two state species from project operations? The attached letter was received by Eagle Creek. Can we assume that the NH Fish and Game's endorsement of the MOA confirms these measures are sufficient provided the project is operated as governed by this MOA?

As I mentioned in my message, please feel free to either call me back today at 207-688-4236 or respond my email. Thanks for your time.

Pat McIlvaine

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**Patricia McIlvaine | Project Manager**

99 Main Street | Topsham, ME 04086  
Office 207.725.8721 | Direct 207.798.3785 |

**WRIGHT-PIERCE** Water | Wastewater | Infrastructure  
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Please mail the completed form and required material to:

New Hampshire Division of Historical Resources  
State Historic Preservation Office  
Attention: Review & Compliance  
19 Pillsbury Street, Concord, NH 03301-3570

RECEIVED

AUG 19 2013

DHR Use Only	5143
R&C #	9/23/13
Log In Date	9/30/13
Response Date	10/7/13
Sent Date	

## Request for Project Review by the New Hampshire Division of Historical Resources

- This is a new submittal  
 This is additional information relating to DHR Review & Compliance (R&C) #:

### GENERAL PROJECT INFORMATION

Project Title Gregg's Falls Hydroelectric Facility

Project Location 55 Mast Road on the Piscataquog River

City/Town Goffstown Tax Map 5 Lot # 15-2

NH State Plane - Feet Geographic Coordinates: Easting 308099 Northing 57286  
(See RPR Instructions and R&C FAQs for guidance.)

Lead Federal Agency and Contact (*if applicable*) Federal Energy Regulatory Commission  
(*Agency providing funds, licenses, or permits*)

Permit Type and Permit or Job Reference # FERC Exempt No. 3180

State Agency and Contact (*if applicable*)

Permit Type and Permit or Job Reference #

### APPLICANT INFORMATION

Applicant Name Essex Power Services, Inc.

Mailing Address 55 Union Street, 4th Floor Phone Number (617) 367-0032

City Boston State MA Zip 02108 Email sjh@essexhydro.com

### CONTACT PERSON TO RECEIVE RESPONSE

Name/Company Essex Power Services, Inc.

Mailing Address 55 Union Street, 4th Floor Phone Number 6173670032

City Boston State MA Zip 02108 Email sjh@essexhydro.com

*Thank you!*  
This form is updated periodically. Please download the current form at [www.nh.gov/nhdhr/review](http://www.nh.gov/nhdhr/review). Please refer to the Request for Project Review Instructions for direction on completing this form. Submit one copy of this project review form for each project for which review is requested! Include a self-addressed stamped envelope to expedite review response. Project submissions will not be accepted via facsimile or e-mail. This form is required. Review request form must be complete for review to begin. Incomplete forms will be sent back to the applicant without comment. Please be aware that this form may only initiate consultation. For some projects, additional information will be needed to complete the Section 106 review. All items and supporting documentation submitted with a review request, including photographs and publications, will be retained by the DHR as part of its review records. Items to be kept confidential should be clearly identified. For questions regarding the DHR review process and the DHR's role in it, please visit our website at: [www.nh.gov/nhdhr/review](http://www.nh.gov/nhdhr/review) or contact the R&C Specialist at [christina.st.louis@dcr.nh.gov](mailto:christina.st.louis@dcr.nh.gov) or 603.271.3558.

**PROJECTS CANNOT BE PROCESSED WITHOUT THIS INFORMATION**

**Project Boundaries and Description**

- Attach the relevant portion of a 7.5' USGS Map (photocopied or computer-generated) *indicating the defined project boundary. (See RPR Instructions and R&C FAQs for guidance.)*
- Attach a detailed narrative description of the proposed project.
- Attach a site plan. The site plan should include the project boundaries and areas of proposed excavation.
- Attach photos of the project area (overview of project location and area adjacent to project location, and specific areas of proposed impacts and disturbances.) *(Informative photo captions are requested.)*
- A DHR file review must be conducted to identify properties within or adjacent to the project area.  
Provide file review results in Table 1 or within project narrative description. *(Blank table forms are available on the DHR website.)*

File review conducted on \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.

**Architecture**

Are there any buildings, structures (bridges, walls, culverts, etc.) objects, districts or landscapes within the project area?  Yes  No

If no, skip to Archaeology section. If yes, submit all of the following information:

Approximate age(s): 50 years

- Photographs of *each* resource or streetscape located within the project area, with captions, along with a photo key. (Digital photographs are accepted. All photographs must be clear, crisp and focused.)
- If the project involves rehabilitation, demolition, additions, or alterations to existing buildings or structures, provide additional photographs showing detailed project work locations. (i.e. Detail photo of windows if window replacement is proposed.)

**Archaeology**

Does the proposed undertaking involve ground-disturbing activity?  Yes  No

If yes, submit all of the following information:

- Description of current and previous land use and disturbances.
- Available information concerning known or suspected archaeological resources within the project area (such as cellar holes, wells, foundations, dams, etc.)

Please note that for many projects an architectural and/or archaeological survey or other additional information may be needed to complete the Section 106 process.

**DHR Comment/Finding Recommendation *This Space for Division of Historical Resources Use Only***

Insufficient information to initiate review.  Additional information is needed in order to complete review.

No Potential to cause Effects  No Historic Properties Affected  No Adverse Effect  Adverse Effect

Comments: *This is an unevaluated resource if in the future plans involve alterations to the facility, surveys will be required*

*If plans change or resources are discovered in the course of this project, you must contact the Division of Historical Resources as required by federal law and regulation.*

Authorized Signature: *EJ Murphy*

Date: 9/30/13