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May 20, 2013

Dr. Michael J. Sale  
Executive Director  
Low Impact Hydropower Institute  
PO Box 194  
Harrington Park, NJ 07640

RE: Application Reviewer Report for  
THE GILMAN PROJECT

Dear Mike:

Attached please find my reviewer's report regarding the application by AMPERSAND GILMAN HYDRO, LP for certification of the GILMAN PROJECT by the Low Impact Hydropower Institute (LIHI).

Sincerely,

A handwritten signature in blue ink that reads "Sarah A. Verville".

Sarah A. Verville

Attachment

# **REVIEW OF APPLICATION FOR CERTIFICATION BY THE LOW IMPACT HYDROPOWER INSTITUTE OF THE GILMAN PROJECT**

Prepared by:  
Sarah A. Verville  
May 2013

## **I. INTRODUCTION AND OVERVIEW**

This report reviews the application submitted by Ampersand Gilman Hydro, LP (“Applicant”) to the Low Impact Hydropower Institute (LIHI) for Certification of the GILMAN Hydroelectric Project.

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

The Gilman Hydro Project is located in the Village of Gilman, Vermont in the Town of Lunenburg, Essex County, Vermont, and in the Town of Dalton, Coos County, New Hampshire, at River Mile 300 on the Connecticut River. See Attachment A for a map of the Facility’s location.

The Connecticut River is the largest and longest river in New England. It flows roughly south, starting from the Fourth Connecticut Lake in New Hampshire, just south of the Canadian border. After flowing through the remaining Connecticut Lakes and Lake Francis, it defines the border between the states of New Hampshire and Vermont. The river then flows through the fertile Pioneer Valley of western Massachusetts and past Springfield, MA, the most populous city on the River. Four miles south of Springfield, the River enters Connecticut, and veers southeastward and ultimately discharges into the Long Island Sound at Old Saybrook and Old Lyme, Connecticut. The Connecticut River has a total length of 407 miles, and a drainage basin extending over 11,250 square miles.

The drainage area of the River at the Facility’s location is 1,541 square miles. The mean annual discharge is 2,195 cfs with a minimum and maximum historical discharge of 115 cfs in 1937 and 48,300 cfs in 1936, respectively. Total flow capacity of the turbines at the Gilman site (2,850 cfs) is exceeded 28 percent of the time.

There are ten hydroelectric projects located on the Connecticut River. The Facility is located 12 miles upstream of the Fifteen Mile Falls Project, owned by TransCanada Hydro Northeast Inc. The latitude and longitude coordinates of the Facility’s dam are 44°24'35.85"N, 71°43'1.96"W.

Table 1 presents the hydroelectric projects from upstream to downstream.

**Table 1. Connecticut River Hydroelectric Facilities**

| <b>Project</b>                           | <b>River Mile<br/>(above Long<br/>Island Sound)</b> | <b>Owner</b>                                  | <b>Status (FERC)</b> |
|--|---|---|----------------------|
| Holyoke                                  | 87  | City of Holyoke Gas<br>& Electric             | Licensed             |
| Turners Falls                            | 122   | FirstLight Hydro<br>Generating Co.            | Licensed             |
| Northfield<br>Mountain<br>Pumped Storage | 127   | FirstLight Hydro<br>Generating Co.            | Licensed             |
| Vernon                                   | 142   | TransCanada Hydro<br>Northeast Inc.           | Licensed             |
| Wilder                                   | 174   | TransCanada Hydro<br>Northeast Inc.           | Licensed             |
| Bellows Falls                            | 217   | TransCanada Hydro<br>Northeast Inc.           | Licensed             |
| Dodge Falls                              | 270   | Dodge Falls Hydro<br>Co.                      | Exemption            |
| Fifteen Mile Falls                       | 274<br>281<br>288                                   | TransCanada Hydro<br>Northeast Inc.           | Licensed             |
| Gilman                                   | 300   | Ampersand Gilman<br>Hydro LP                  | Licensed             |
| Canaan                                   | 373   | Public Service<br>Company of New<br>Hampshire | Licensed             |

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

The Facility is owned by Ampersand Gilman Hydro, LP, who purchased the facility in 2008. The dam was originally constructed in approximately 1900.

The Facility consists of a refurbished concrete dam, a power canal and tailrace channel, a powerhouse with one 2.25 MW generating unit, one 1.0 MW generating unit and two 0.8 MW generating units, a switching facility, a transmission line and entrance intake structures. The boundary between Vermont and New Hampshire passes through the Facility so that the 2.25 MW generating unit and the 1.0 MW generating unit are located in New Hampshire, while the two 0.8 MW generating units are located in Vermont.

The Facility's dam is 324.5 feet wide spanning the width of the Connecticut River. In 1995 and 1996 the Simpson Paper Company, who owned and operated the site to produce paper until 1999, spent \$4.7 million to refurbish the dam by replacing the existing timber crib dam structure with a concrete gravity structure and adding rubber dam crest controls to the new and existing

spillways. The dam includes an overflow spillway section containing a hydraulically operated crest gate. The new concrete spillway dam has a crest elevation of 826.8 feet and repaired existing concrete dam sections have rubber dam crest controls to elevation 833.3 feet (fully inflated), the normal head pond elevation. The rubber dam body on the new dam section is 6.5 feet high and 109.5 feet long. The rubber dam body on the existing dam section is 5.0 feet high and 108.0 feet long.

The Project is operated as a run-of-river facility, with outflow equal to inflow on an instantaneous basis, maintaining a normal head pond elevation of 833.3 feet whenever possible, according to the U.S. Geological Survey (USGS). The Project incorporates a 27-foot wide hydraulic crest gate, which is operated to maintain the level of the head pond at the top of the rubber dams. The minimum flow needed to operate the Project is 130 cubic-feet per second (cfs). The maximum hydraulic capacity of the Project is 2,850 cfs. When river flows exceed this amount, they are spilled at the dam. When river flows fall below 130 cfs, such flows will also be spilled at the dam. The average gross head at the Project is approximately 24 feet from a headpond elevation of 833.3 feet to a tailwater elevation of 809.0 feet.

The Project impoundment at normal pond condition extends approximately 2.9 miles upstream of the dam to a point just above the confluence of the Johns River, at normal pond condition. The maximum surface area of the impoundment is approximately 130 acres at an elevation of 833.3 feet (USGS). The gross storage capacity at normal pond condition is estimated to be approximately 705 acre-feet, with an average depth of approximately 5.4 feet. The powerhouse is located at the northern Vermont end of the dam on the right bank of the Connecticut River and was originally constructed as a ground wood mill. The powerhouse has a substructure of mass concrete with integral water intake draft tubes. The superstructure is of brick construction with steel-frame and timber-frame construction. Project controls and mechanical equipment are located inside the powerhouse. Installation of a permanent downstream fish passage facility was completed in August 2012.

There are four turbines at the Project; the turbine units are numbered 1 through 4, from south to north. Wheel No. 1 is a horizontal tube turbine installed in 1985 and 1986. Wheel No.2 is a vertical single-regulated propeller turbine with adjustable wicket gates. Wheel Nos. 3 and 4 are horizontal Francis turbines. The combined installed capacity of the Turbine Generators is 4.85 MW. Generators No. 2, 3 and 4 are direct connected to the turbines; Generator No.1 utilizes a speed increaser, allowing the generator to turn at 900 rpm while the turbine turns at 150 rpm. The Project is both manually and automatically operated. The water wheel and Generator No.1, installed in 1985 and 1986, are automatically controlled. The three other turbines and generators (Nos. 2, 3 and 4) are manually controlled. See Attachment A for photos of the Facility and a diagram of the Facility's layout.

Average annual generation at the Facility is 25 GWH.

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

The Gilman Project (No. 2392) was issued a New License by the Federal Energy Regulatory Commission (FERC) in 1994.

Based on a review of filings made for the Facility at FERC from 2003-2013, I found no record of license compliance issues or complaints, whether from the last on-site FERC inspection, in filings from federal or state resource agencies or other entities and individuals.

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

LIHI posted the Application for a 60-day public comment period on its website on December 5, 2012. No public comments were received by LIHI.

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

Below is my summary of my findings regarding compliance with each of LIHI's criterion:

- **Criterion A, Flows.** The Vermont Water Quality Certificate requires run-of-river operation, maintenance of the reservoir water surface elevation at or within six inches of the top of the flashboards (except for circumstances beyond the licensee's control), and a continuous minimum flow of 210 cfs, or inflow whichever is less during the period June 1 – October 15, whenever inflow to the Project is less than 1,000 cfs. In a letter dated April 5, 2013, the Vermont Agency of Natural Resources (VANR) states that it does not have information to suggest that the Facility is not operating in full compliance with the conditions in its Water Quality Certificate. The New Hampshire Department of Environmental Services (NHDES) issued a Water Quality Certificate in 1992. It does not contain any conditions regarding minimum flows for the protection, mitigation, and enhancement of fish and wildlife. By letter dated March 25, 2013, NHDES acknowledged the VANR flow requirements for the Facility and did not express any concern with them. The Facility is in compliance with this criterion.
- **Criterion B, Water Quality.** VANR issued an amended Water Quality Certificate in 1994. The Vermont Water Quality Certificate does not contain any specific conditions with respect to quantitative water quality standards. NHDES issued its Water Quality Certificate in 1992 and required monitoring of dissolved oxygen levels and water temperature. By letter dated March 14, 2013, NHDES concluded that during 2012 water quality sampling, the water quality in the impoundment and downstream section of the Connecticut River, under the dam's current operating conditions appears to be meeting existing water quality criteria, although it noted that on the last day of sampling, the daily average for dissolved oxygen saturation was close to not meeting the water quality standard. Consequently, NHDES recommended additional sampling for dissolved oxygen and temperature. In its letter dated April 4, 2013 letter, VANR concurred with NHDES's recommendation although VANR also stated that it does not have information to suggest that the Facility is not operating in full compliance with the conditions in its Water Quality Certificate. The Facility is in conditional compliance with this criterion.

- Criterion C, Fish Passage.** The 1994 Vermont Water Quality Certificate for the Facility requires the installation of downstream fish passage upon the request of USFWS and the Vermont Department of Fish and Wildlife (VDFW). In 2007, USFWS and VDFW requested the installation of downstream fish passage for the spring outmigration of Atlantic salmon by the spring of 2008. The agencies and FERC granted a one-year extension of time due to the discovery of the federal and state listed dwarf wedgemussel in the vicinity. In the meantime, the applicant installed interim downstream fish passage in 2009. The applicant continued to work with the agencies on numerous design scenarios through 2009-2011 and received extensions of time to install the downstream fish passage facility by September 1, 2012. The downstream fish passage facility was completed in August 2012. As part of its final approval of the downstream fish passage facility, USFWS reserved the right to require the applicant to assess the effect of the downstream fish passage facility's plunge pool on fish scaling, injury, and mortality. VANR and NHDES also approved the downstream fish passage facility. VANR subsequently recommended an additional period of operation for the fish passage facility but I do not find that VANR's subsequent recommendation constitutes a valid Resource Agency Recommendation as defined in LIHI's handbook (updated 2011). The Facility is in conditional compliance with this criterion.
- Criterion D, Watershed Protection.** There is no buffer zone, shoreland protection fund, or shoreline management plan in place for or at this Facility. Thus, all requirements that exist (none) are being met, and no three-year additional term for certification is warranted.
- Criterion E, Threatened and Endangered Species Protection.** The Facility is located within the historic habitat range of a federal and state listed mussel species. The Vermont Fish and Wildlife Department, the New Hampshire Fish and Game Department, and USFWS did not identify that the Facility has an adverse effect on the species. The Facility is in compliance with this criterion.
- Criterion F, Cultural Resources.** There is no requirement in the FERC license with respect to cultural resources protection, mitigation, or enhancement. The New Hampshire State Historic Preservation Office has not expressed any concern with respect to cultural resources at the Facility. The Vermont State Historic Preservation Office has commented that the mill building formerly associated with the Facility is eligible for listing on State Register of Historic Places. The mill building is not owned by the Facility owner. The Vermont SHPO has also commented that the Facility does not meet the standard for the identification of cultural and historic resources and does not have a process in place to evaluate future projects and assess potential effects to cultural resources. The LIHI criterion, however, requires that the Facility be in compliance with all requirements regarding Cultural Resource protection, mitigation or enhancement included in the FERC license or exemption. The Facility is in compliance with this criterion.

- **Criterion G, Recreation.** The Applicant is in compliance with the requirements in its FERC license regarding recreation and access. The Facility is in compliance with this condition.
- **Criterion H, Dam Removal.** There is no resource agency recommendation for removal of the dams associated with this Facility.

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

Based on my review of information submitted by the Applicant, the additional documentation noted herein, the public comments submitted, my consultations with various resource agencies and other entities, and for the reasons stated above, I conclude that the Facility is in compliance with LIHI’s criteria, as summarized in Section V, above, and further explained in Section VIII below.

I recommend that the Gilman Hydroelectric Facility be certified to be in compliance with LIHI’s criteria with a certification term of five year *but with the following conditions set forth below.*

1. The Applicant will conduct sampling for temperature and dissolved oxygen when minimum flows are close to the 7Q10 flow and temperatures are relatively high such that it’s possible that water quality standards for dissolved oxygen and temperature may not be met. By January 31 of each year, the Applicant shall notify LIHI as to whether it conducted sampling during the prior year and file documentation with LIHI that NHDES and VANR have concurred with the results of any water quality sampling conducted.
2. Upon request of USFWS, the Applicant shall assess whether the plunge pool associated with the downstream fish passage facility is significantly contributing to fish scaling, injury, or mortality and make modifications to the plunge pool, if the assessment finds that it is significantly contributing to fish scaling, injury, or mortality. By January 31 of each year, the Applicant shall notify LIHI as to whether it has received a request from USFWS to assess the effects of the plunge pool on downstream migrating Atlantic salmon smolt.

## **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?**

**YES** – The Facility is in compliance with the flow conditions prescribed by VANR in its 1994 amended Water Quality Certificate. The Vermont Water Quality Certificate requires run-of-river operation, maintenance of the reservoir water surface elevation at or within six inches of the top of the flashboards (except for circumstances beyond the licensee’s control), and a continuous minimum flow of 210 cfs, or inflow whichever is less during the period June 1 – October 15, whenever inflow to the Project is less than 1,000 cfs. In a letter dated April 5, 2013, VANR states that it does not have information to suggest that the Facility is not operating in full compliance with the conditions in its Water Quality Certificate.

NHDES issued a WQC for the Project in 1992. The WQC does not contain flow conditions for fish and wildlife protection, mitigation, and enhancement. The Project, however, is operated as a run-of-river facility where outflow meets inflow. In a letter dated March 14, 2013, NHDES acknowledged that the Facility owner had confirmed that the Project is operated as a run of river facility, where inflow equals outflow at all times. NH DES also noted that the Facility owner had provided it with the same flow records that it had provided to VANR to confirm compliance with the flow requirements of the VANR Water Quality Certificate. In sum, NHDES did not express any concerns with respect to minimum flows at the Facility.

**PASS**

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**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**
- b) 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?**

**YES (CONDITIONAL), go to B2**

- a) VANR issued an amended Water Quality Certificate in 1994. The Vermont Water Quality Certificate does not contain any specific conditions with respect to quantitative water quality standards. NHDES issued its Water Quality Certificate in 1992 and required monitoring of dissolved oxygen levels and water temperature.

In response to this application for LIHI certification, NHDES required additional water quality testing, although it had approved discontinuation of testing in 2003. The Applicant completed such testing and sent the results to NHDES in 2012. By letter dated March 14, 2013, NHDES concluded that during the 2012 sampling period, the water quality in the impoundment and downstream section of the Connecticut River, under the dam's current operating conditions appears to be meeting existing water quality criteria, although it noted that on the last day of sampling, the daily average for dissolved oxygen saturation was close to not meeting the water quality standard. Consequently, NHDES recommended additional sampling for dissolved oxygen and temperature when flows are closer to the 7Q10 flow and temperatures are relatively high to confirm continuing compliance. In a letter dated April 5, 2013 letter, VANR concurred with NHDES's recommendation although VANR also stated that it does not have information to suggest that the Facility is not operating in full compliance with the conditions in its Water Quality Certificate.

- 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 section of the Connecticut River below the Facility is on the 2012 NHDES Draft 303(d) list of impaired waters.

**GO TO B.3.**

- 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.** By e-mail dated March 25, 2013, NHDES confirmed that the impairment on the section of the Connecticut River in which the Facility is located based on parameters for pH and aluminum

and stated that a run-of-river hydroelectric facility is not the primary cause of a pH or aluminum water quality standard.

### **PASS ON ONE CONDITION**

**The Applicant will conduct sampling for temperature and dissolved oxygen when minimum flows are close to the 7Q10 flow and temperatures are relatively high such that it's possible that water quality standards for dissolved oxygen and temperature may not be met. By January 31 of each year, the Applicant shall notify LIHI as to whether it conducted sampling during the prior year and file documentation with LIHI that NHDES and VANR have concurred with the results of any water quality sampling conducted.**

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### **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?**

#### **FOR ANADROMOUS FISH - YES (CONDITIONAL).**

The 1989 VANR WQC, as amended in 1994, contains a provision for the installation of downstream fish passage upon the request of U.S. Fish and Wildlife Service (USFWS). The 1994 FERC license contains a reservation of FERC's authority to require a fishway prescribed by USFWS. In 2007, both USFWS and VANR requested that the Applicant move forward with the design and installation of downstream fish passage for spring outmigration of Atlantic

salmon. The Applicant completed installation of downstream fish passage in 2012 and the facility became fully operational on September 7, 2012. The NH WQC does not contain any provisions regarding fish passage. Nonetheless, NH DES was a consulting party over the past five years with respect to the design and installation of the downstream fish passage facility.

By e-mail dated February 13, 2013, USFWS stated that it was satisfied with the Facility as built with the caveat that if studies in the future indicate that there may be a concern with the volume of the plunge pool volume, it would look to the Applicant to assess whether the scaling, injury, or mortality can be attributed to the plunge pool. By email and letter dated February 14, 2013, NH Department of Fish and Wildlife and NHDES concurred that they are supportive of LIHI certification given that the downstream passage facility has been adequately completed. The NH agencies also agreed with the recommendation by USFWS.

There is conflicting communication from VANR regarding its approval of the downstream fish passage facility. By letter dated December 13, 2012, VANR stated that the as-built downstream fish passage facilities are approved in accordance with Condition C of the water quality certificate. VANR also stated that the downstream fish passage facilities shall operate from April 15 to June 15, inclusive and from September 15 to November 15, inclusive. The Applicant objected to the September 15 to November 15 period of operation as being inconsistent with the negotiations and agreements reached among USFWS, NHDES, and VANR during the prior five-year period regarding the design and installation of the downstream fish passage facility.

Subsequently, by letter dated January 3, 2013, VANR stated that the as-built downstream fish passage facilities are approved in accordance with Condition C of the water quality certificate. It also stated that the downstream fish passage facilities shall operate from April 15 to June 15, inclusive. In other words, the agency approval issued on January 3, 2013 did not include the requirement for the September 15 – November 15 operation period.

On January 7, 2013, the Applicant submitted a final progress report to USFWS, VANR, and NHDES in which the Applicant confirmed that the fish passage facility will be operated April 15 to June 15, inclusive. The Applicant stated that if no one objects, the progress report will be filed with FERC within 30 days. By email dated January 7, 2013, VANR accepted the Applicant's final fish passage progress report. The Applicant filed the final progress report with FERC by letter dated February 14, 2013. No comments have been filed with respect to the final progress report submitted to FERC on February 14, 2013.

In response to a Statement of Qualification Application submitted by the Applicant to Massachusetts Department of Energy Resources qualification of the facility as a MA Class II RPS unit, by letter dated April 5, 2013, VANR again recommended that the downstream fish passage facility be operational during the spring and fall periods. VANR, however, did not actually rescind or override its January 3, 2013 approval of the downstream fish passage as being in compliance with the water quality certificate.

The Applicant responded by letter dated May 1, 2013. The Applicant stated that at no time during the five year period regarding the design and installation of the downstream fish passage facility did the agencies recommend operation during the fall; that the hydroelectric projects

directly downstream of the Project do not have a requirement for fall passage, that the Moore Dam, immediately downstream of the Facility is a LIHI certified facility that does not require fall passage, and that if the need for late season passage for pre-smolts salmon is deemed necessary in the future, the Section 18 reservation of authority is available to require late season passage. VANR has not responded to the Applicant's May 1, 2013 response.

In sum, both USFWS and NHDES have approved the downstream fish passage facility with a period of operation of April 15 to June 15, inclusive. By letter dated January 3, 2013, VANR also approved the downstream fish passage as being in compliance with the water quality certificate with a spring operation period. Per the definition of Resource Agency Recommendation in the LIHI Handbook (updated December 2011), VANR's January 3, 2013 approval is the Resource Agency Recommendation because it was made in the context of a FERC Section 18 prescription and 401 Water Quality proceeding. VANR's recommendation in its April 5, 2013 letter is not a Resource Agency Recommendation because it was not made in a FERC Section 18 prescription or 401 Water Quality Certificate proceeding but in connection with a request for qualification as a RPS unit.

*Go to C5*

**FOR CATADROMOUS FISH – NOT APPLICABLE.**

There are no prescriptions or agency recommendations for catadromous species. *GO TO C2.*

**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)?**

**NO.** The agencies have not identified any historic records that catadromous fish moved through the Facility area. *Go to C2a*

**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,** *Go to C2b*

**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?**

**YES,** *GO TO C5.*

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

There are no mandatory fish passage prescriptions for riverine fish.

**NOT APPLICABLE, 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?**

There are no Resource Agency Recommendations for fish entrainment protection.

**NOT APPLICABLE**

**PASS ON ONE CONDITION.**

**Upon request of USFWS, the Applicant shall assess whether the plunge pool associated with the downstream fish passage facility is significantly contributing to fish scaling, injury, or mortality and make modifications to the plunge pool, if the assessment finds that it is significantly contributing to fish scaling, injury, or mortality. By January 31 of each year, the Applicant shall notify LIHI as to whether it has received a request from USFWS to assess the effects of the plunge pool on downstream migrating Atlantic salmon smolt.**

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**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.**

**YES** – There are no resource agency recommendations for a shoreland management plan regarding shorelands surrounding the Facility.

**PASS**

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**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?**

Letters from Vermont Fish and Wildlife Department (VFWD), NH Fish and Game (NHFG), and USFWS indicate that the Facility is within the historical habitat of the federally endangered dwarf wedge mussel. The mussel is also listed as a state endangered species in NH and VT.

**YES, 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?**

**NOT APPLICABLE, 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?**

**NOT APPLICABLE, 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?**

USFWS has stated that the Facility has no historical or expected adverse impact on the species. NH and VT did not identify any issues with respect to the presence of the species within the Facility area.

**YES, Pass, go to F**

**PASS**

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**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** – There is no requirement in the FERC license requiring Cultural Resource protection, mitigation, or enhancement. In a letter dated April 2012, the New Hampshire State Historic Preservation Office (SHPO) confirmed that the Facility does not have the potential to cause effects to known cultural resources in NH. In a letter dated April 2013, the Vermont State Historic Preservation Office commented that the mill building formerly associated with the Facility is eligible for listing on State Register of Historic Places. The mill building, however, is not owned by the Facility owner. The Facility is set back from the mill building approximately 30 feet and operations at the Facility do not impact that mill building. The Vermont SHPO has also commented that the Facility does not meet the standard for the identification of cultural and historic resources and does not have a process in place to evaluate future projects and assess potential effects to cultural resources. The LIHI criterion, however, requires that the Facility be in compliance with all requirements regarding Cultural Resource protection, mitigation or enhancement included in the FERC license or exemption. Because there is no such requirement in the FERC license, the Facility is in compliance with this criterion.

**YES, Go to G**

**PASS**

---

**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?**

**YES** – the FERC license required the implementation of a canoe portage plan and a boat launch improvement plan on the New Hampshire side of the Facility within one year of issuance of the license. In May 1995, the Applicant filed confirmation with FERC that it had completed the improvements as required in the two plans. A review of FERC's e-library found no issues with

respect to recreation at the Facility. The Applicant's inquiry to New Hampshire Parks and Recreation was not responded to. Vermont responded that it was satisfied that the Applicant provided public recreational access to the Project.

*Go to G3*

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

**YES**

*Pass, Go to H*

**PASS**

---

## **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**

**PASS, FACILITY IS LOW IMPACT**

---

**FACILITY MEETS WITH THE FOLLOWING  
CERTIFICATION CONDITIONS  
THE LIHI CRITERIA FOR CERTIFICATION**

1. The Applicant will conduct sampling for temperature and dissolved oxygen when minimum flows are close to the 7Q10 flow and temperatures are relatively high such that it's possible that water quality standards for dissolved oxygen and temperature may not be met. By January 31 of each year, the Applicant shall notify LIHI as to whether it conducted sampling during the prior year and file documentation with LIHI that NHDES and VANR have concurred with the results of any water quality sampling conducted.
  
2. Upon request of USFWS, the Applicant shall assess whether the plunge pool associated with the downstream fish passage facility is significantly contributing to fish scaling, injury, or mortality and make modifications to the plunge pool, if the assessment finds that it is significantly contributing to fish scaling, injury, or mortality. By January 31 of each year, the Applicant shall notify LIHI as to whether it has received a request from USFWS to assess the effects of the plunge pool on downstream migrating Atlantic salmon.

## INDEX OF PRIMARY CONTACT INFORMATION FOR LIHI CRITERIA

| LIHI CRITERION                             | PRIMARY CONTACT INFORMATION  |
|--|--|
| <b>Flows</b>                               | <ul style="list-style-type: none"> <li>• Ted Walsh, NHDES</li> <li>• Brian Fitzgerald, VANR</li> <li>• Jeff Crocker, VANR</li> <li>• John Warner, USFWS</li> </ul>   |
| <b>Water Quality</b>                       | <ul style="list-style-type: none"> <li>• Ted Walsh, NHDES</li> <li>• Jeff Crocker, VANR</li> </ul>   |
| <b>Fish Passage &amp; Protection</b>       | <ul style="list-style-type: none"> <li>• Ted Walsh, NHDES</li> <li>• Brian Fitzgerald, VANR</li> <li>• Jeff Crocker, VANR</li> <li>• John Warner, USFWS</li> </ul>   |
| <b>Watershed Protection</b>                |  |
| <b>Threatened &amp; Endangered Species</b> | <ul style="list-style-type: none"> <li>• Melissa Coppola, New Hampshire Natural Heritage Program</li> <li>• Timothy Appleton, VTDFW</li> <li>• Susie von Oettingen, USFWS</li> </ul>                               |
| <b>Cultural Resources Protection</b>       | <ul style="list-style-type: none"> <li>• Richard Boisvert, NH Division of Historical Resources</li> <li>• Devin Colman, Historic Preservation Review Coordinator, VT Division for Historic Preservation</li> </ul> |
| <b>Recreation</b>                          | <ul style="list-style-type: none"> <li>• Ed O'Leary, VT Department of Forests, Parks &amp; Recreation</li> <li>• NH Division of Parks and Recreation</li> </ul>  |
| <b>Facilities Recommended for Removal</b>  |  |

## RECORD OF CONTACTS

**NOTE: The information presented below was gathered from contacts by email and/or written public comments to LIHI. The record below contains comments provided in writing by letter or email to the Applicant. The applicable correspondence from the agencies is provided in Attachment B, organized by LIHI criterion.**

---

Date: January 3, 2013  
Contact Person: Jeff Crocker  
Vermont Agency of Natural Resources  
Contact Information: 802-828-1535  
Area of Expertise: Fish Passage

Letter is attached regarding approval of downstream fish passage facility. Also attached is an 8-13-2012 email from Brian Fitzgerald of NHDES that it will be relying on NH and USFWS to test the effectiveness of the fish passage facility.

---

Date: February 13, 2013  
Contact Person: John Warner  
US Fish and Wildlife Service  
Contact Information: john.warner@fws.gov  
Area of Expertise: Fish Passage

Email approving the downstream fish passage facility as built with the caveat that the Applicant would be agreeable to assessing the effects of the plunge pool volume on Atlantic salmon if requested by USFWS.

---

Date: February 14, 2013  
Contact Person: Carol Henderson  
New Hampshire Fish and Game  
Contact Information: [carol.henderson@wildlife.nh.gov](mailto:carol.henderson@wildlife.nh.gov)  
Area of Expertise: Fish Passage

Email concurring that the downstream fish passage facility has been completed and agreeing with USFWS recommendation.

---

Date: March 14, 2013  
Contact Person: Ted Walsh  
New Hampshire Department of Environmental Services  
Contact Information: [ted.walsh@des.nh.gov](mailto:ted.walsh@des.nh.gov)  
Area of Expertise: Fish Passage, Flows, and Water Quality

Letter is attached regarding conditional approval of water quality sampling and downstream fish passage facility, and sufficiency of minimum flows.

Date: April 5, 2013  
Contact Person: Jeff Crocker  
Vermont Agency of Natural Resources  
Contact Information: 802-828-1535  
Area of Expertise: Fish Passage, Flows & Water Quality

Mr. Crocker states that it does not have information to suggest that the Facility is not operating in full compliance with the conditions in its Water Quality Certificate, agrees with NH's recommendation for additional water quality sampling under certain conditions, and requests an additional period for operation of the fish passage facility. Also attached is the Applicant's May 1, 2013 response.

---

Date: April 19, 2012  
Contact Person: Susi von Oettingen  
US Fish and Wildlife Service  
Contact Information: 603-223-2541 ext. 22  
Area of Expertise: Threatened & Endangered Species

See letter from Thomas R. Chapman in which he requests that any questions be directed to Susi von Oettingen. The letter states that as long as there are no changes in operation, the Facility is unlikely to have an adverse effect on the dwarf wedgemussel.

---

Date: March 16, 2012  
Contact Person: Melissa Coppola  
New Hampshire Natural Heritage Program  
Contact Information: 603-271-2214  
Area of Expertise: Threatened & Endangered Species

Ms. Coppola's identification of the dwarf wedgemussel is contained in the attached memorandum. She did not identify any Facility impacts on the species.

---

Date: March 14, 2012.  
Contact Person: Timothy Appleton  
Vermont Department of Fish and Wildlife  
Contact Information: 802-476-0199  
Area of Expertise: Threatened & Endangered Species

Mr. Appleton's identification of the dwarf wedgemussel is contained in the attached memorandum. He did not identify any Facility impacts on the species.

---

Date: April 13, 2013  
Contact Person: Devin Colman  
Historic Preservation Review Coordinator  
Vermont Division for Historic Preservation  
Contact Information: devin.colman@state.vt.us  
802-828-3043

Area of Expertise: Cultural Resources

Judith Ehrlich's letter regarding state eligibility of the mill building located adjacent to the Facility is attached. She states that questions should be directed to Devin Colman. Also attached is the Applicant's response to the Vermont Division for Historic Preservation.

---

Date: April 3, 2012  
Contact Person: Richard Boisvert, NH Division of Historical Resources  
Contact Information:  
Area of Expertise: Cultural Resources

Mr. Boisvert's sign off of the NH Project Notification Review form, in which he states that no historic properties are affected, is attached.

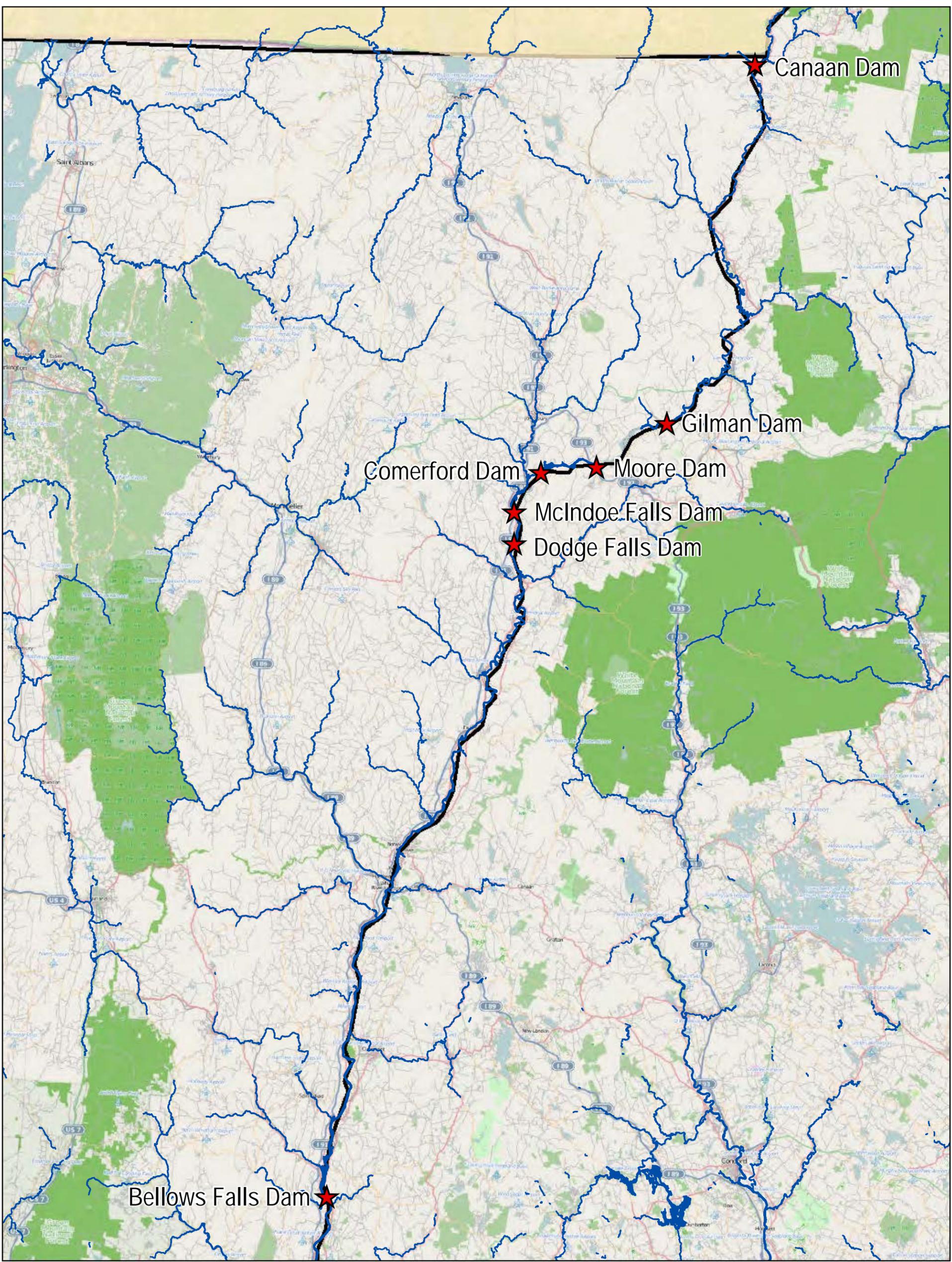
---

Date: March 8, 2012  
Contact Person: Ed O'Leary  
Vermont Department of Forests, Parks & Recreation  
Contact Information: [Ed.Oleary@state.vt.us](mailto:Ed.Oleary@state.vt.us)  
Area of Expertise: Recreation

Email confirming that the Facility provides adequate recreational access.

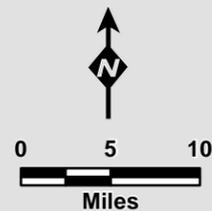
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**ATTACHMENT A**  
**APPLICATION REVIEWER REPORT**  
**FOR THE**  
**GILMAN PROJECT**



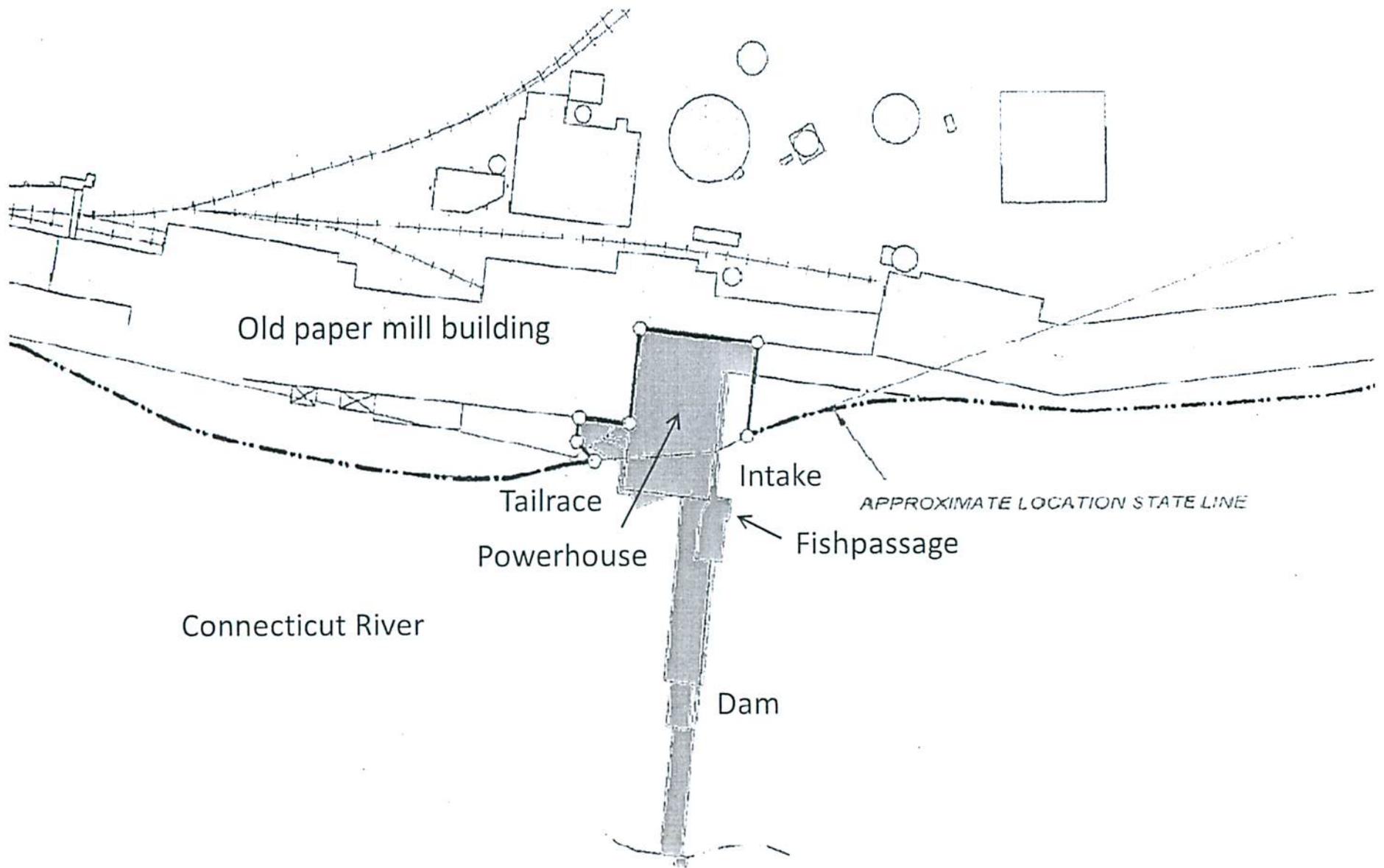
Legend

- ★ Dam Locations
- NHD Surface Water



Gilman Hydroelectric Facility  
 Application for LIHI Certification

Date: 5/17/2013



Old paper mill building

Tailrace

Powerhouse

Connecticut River

Intake

APPROXIMATE LOCATION STATE LINE

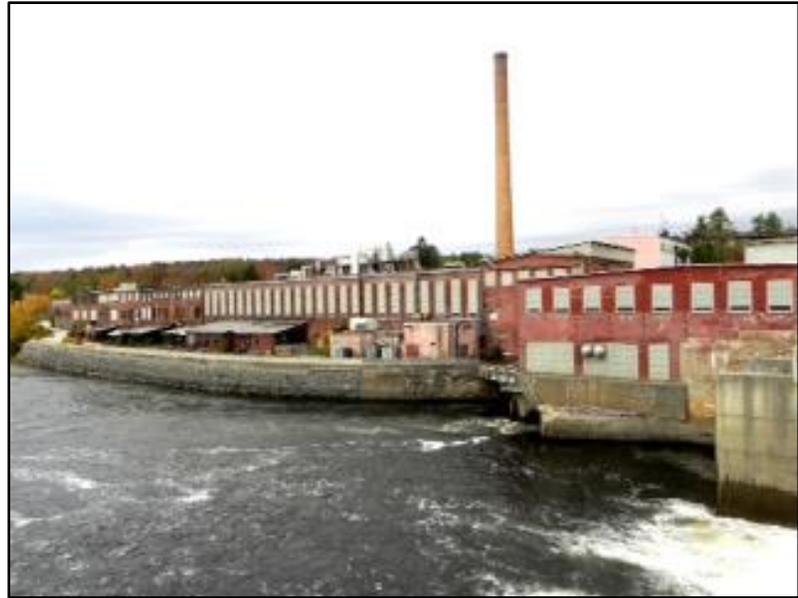
Fishpassage

Dam



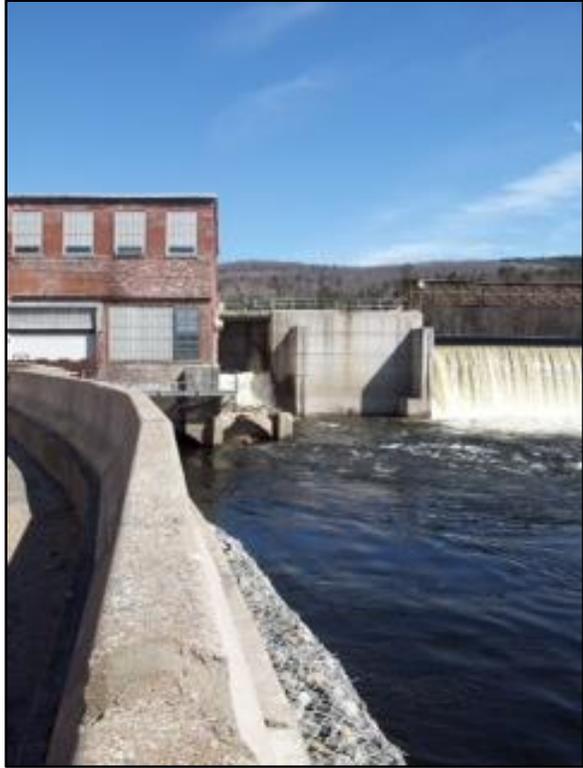
GILMAN HYDRO PROJECT BOUNDARY











**ATTACHMENT B**  
**APPLICATION REVIEWER REPORT**  
**FOR THE**  
**GILMAN PROJECT**



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



**Thomas S. Burack, Commissioner**

March 14, 2013

Dr. Michael J. Sale, Executive Director  
Low Impact Hydropower Institute  
34 Providence Street  
Portland, Maine 04103

RE: Water Quality Status of the Connecticut River for Low Impact Hydropower Institute Certification of the Gilman Hydroelectric Project (FERC No. 2392), Connecticut River

Dear Dr. Sale:

Essex Hydro Associates (EHA) has applied on behalf of Ampersand Gilman Hydro L.P. for Low Impact Hydropower Certification from the Low Impact Hydropower Institute (LIHI) for the Gilman Hydroelectric Project (FERC No. 2392) on the Connecticut River in Dalton, NH. We understand that to receive LIHI certification, you require 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. On July 2, 2012, DES sent EHA a letter stating what would be needed to determine if the Connecticut River in the vicinity of the Gilman Hydroelectric Project was or was not attaining water quality standards. In specific, the following was stated: "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 and thresholds;
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."

The purpose of this letter is to provide you with our assessment of data and information received from EHA in response to our letter of July 2, 2012 and, our conclusions as to whether or not the Gilman Hydroelectric Project is causing or contributing to New Hampshire surface water quality standard violations in the Connecticut River.

With regards to water quality, EHA collected water quality data for dissolved oxygen, water temperature, total phosphorus, and chlorophyll-a. Monitoring locations in the impoundment (53D-CNT) and in the downstream section of the river (53-CNT) were monitored continuously for a 10 day period in August 2012 (8/1 to 8/10) for water temperature and dissolved oxygen using multi-parameter dataloggers. DES specified that the multi-parameter continuous water quality data should be collected under critical low flow/higher water temperature conditions. From August 1 to approximately August 9, flow in the Connecticut River was at approximately two to three times the 7Q10 low flow of 374 cfs. From August 9 to the end of the sampling period, flow increased significantly above the target of three times the 7Q10 flow. During the collection of the continuous water quality data, daily average water temperatures in the impoundment ranged from approximately 23 to 25 ° Celcius.

EHA has stated that during the collection of the continuous water quality data the Gilman Hydroelectric Project was operating under normal operating procedures.

Instantaneous measurements were taken in the impoundment (53D-CNT) for water temperature and dissolved oxygen at one foot depth intervals. This data indicated that the impoundment is weakly thermally stratified but is meeting the water quality standard for dissolved oxygen. In addition, between June and August 2012, ten samples from stations 53D-CNT and 53-CNT were collected and tested for total phosphorus and chlorophyll-a.

DES has assessed the water quality data collected in 2012, and based on this assessment concludes that during the 2012 sampling period the water quality in the impoundment and downstream section of the Connecticut River, under the dam's current operating conditions, appears to be meeting existing water quality criteria or thresholds for dissolved oxygen, phosphorus and chlorophyll-a. DES notes, however, that the dissolved oxygen % saturation levels did continually decline during the time of deployment and on the last day the daily average was close (78.8 %) to the water quality standard of 75%.

In the July 2, 2012 letter DES provided the assessment status for the parameters of concern for the reaches of the Connecticut River upstream and downstream of the Gilman Hydroelectric Project. Table 1 provides an update to the current assessment status of the river reaches in question for the parameters collected this summer. Our assessments were based on the methodology described in the DES Consolidated Assessment and Listing Methodology (CALM)<sup>1</sup>. This information will be used in the next Section 305(b)/303(d) Water Quality Assessment report which is expected to be issued by DES in early 2014. Please note that the assessment status listed in Table 1 could change if water quality criteria or thresholds change and/or if additional data collected between now and the 2014 report indicate water quality violations. For example, data collected at lower flows and/or higher temperatures might result in a different assessment.

**Table 1. Assessment Status for Water Quality Monitoring Parameters - Gilman Hydroelectric Project**

| Assessment Unit and Monitoring Station | Location                               | Parameter                        | Designated Use             | Assessment Status based upon summer 2012 sampling |
|--|--|----------------------------------|----------------------------|---|
| NHIMP801030201-01<br><br>53D-CNT       | Gilman Hydroelectric Dam Impoundment   | Dissolved Oxygen (mg/L)          | Aquatic Life               | Fully Supporting                                  |
|  |  | Dissolved Oxygen (% Saturation)  | Aquatic Life               | Fully Supporting                                  |
|  |  | Chlorophyll-a                    | Primary Contact Recreation | Fully Supporting                                  |
|  |  |                                  | Aquatic Life               | Indeterminate <sup>A</sup>                        |
|  |  | Total Phosphorus                 | Aquatic Life               | Indeterminate <sup>A</sup>                        |
| Water Temperature                      | Aquatic Life                           | No numeric criteria <sup>C</sup> |                            |   |
| NHRIV801030201-02<br><br>53-CNT        | Downstream of Gilman Hydroelectric Dam | Dissolved Oxygen (mg/L)          | Aquatic Life               | Fully Supporting                                  |
|  |  | Dissolved Oxygen (% Saturation)  | Aquatic Life               | Fully Supporting                                  |
|  |  | Chlorophyll-a                    | Primary Contact Recreation | Fully Supporting                                  |
|  |  | Total Phosphorus                 | Aquatic Life               | No numeric criteria <sup>B</sup>                  |
|  |  | Water Temperature                | Aquatic Life               | No numeric criteria <sup>C</sup>                  |

<sup>1</sup> 2012 Section 305(b) and 303(d) Consolidated Assessment and Listing Methodology. New Hampshire Department of Environmental Services. NHDES-R-WD-10-3. February, 2010. Available at <http://des.nh.gov/organization/divisions/water/wmb/swqa/documents/2010calm.pdf>.

<sup>A</sup> DES does have numeric water quality thresholds for the aquatic life designated use for total phosphorus and chlorophyll-a in lakes/ponds and impoundments with characteristics similar to lakes/ponds but it can only be applied to waterbodies where the trophic class is known. For waterbodies where the trophic class is known the median total phosphorus and chlorophyll-a value is used to make the threshold comparison. The aquatic life designated use nutrient and chlorophyll-a thresholds are depicted below with the median values for each parameter for the data collected at station 53D-CNT in assessment unit NHIMP801030201-01 and station 53-CNT in assessment unit NHRIV801030201-02 during the summer of 2012.

|                              | TP (ug/L) | Chl-a (ug/L) |
|------------------------------|-----------|--------------|
| <b>Median 53D-CNT (2012)</b> | <b>12</b> | <b>2.15</b>  |
| <b>Median 53-CNT (2012)</b>  | <b>11</b> | <b>2.70</b>  |
| Oligotrophic                 | < 8       | < 3.3        |
| Mesotrophic                  | ≤ 12      | ≤ 5          |
| Eutrophic                    | ≤ 28      | ≤ 11         |

<sup>B</sup> DES does not have numeric water quality criteria for nutrients in rivers or streams. The narrative criteria states that “Class B waters shall contain no phosphorus or nitrogen in such concentrations that would impair any existing or designated uses, unless naturally occurring.”

<sup>C</sup> Although there is currently no numerical water quality criteria for water temperature, NHDES 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.

EHA provided DES with a detailed description of the infrastructure of the facility. Project works consist of:

- a 324.5 foot long concrete gravity crib dam which is 40 feet high at its highest point and spans the width of the Connecticut River,
- an average gross head of approximately 24 feet from the head pond (impoundment) at elevation 833.3 feet to a elevation in the tailrace of 809.0 feet,
- a rubber dam crest which was added to the dam in 1999 during refurbishment activities,
- a 27 foot wide hydraulic crest gate which is operated to maintain the level of the head pond at the top of the rubber dams,,
- an overall maximum hydraulic capacity of 2,850 cfs,
- four turbines numbered 1 through 4 from south to north with a combined capacity of 4.85 MW, and
- a project powerhouse located at the northern end of the dam in Vermont on the right bank of the Connecticut River.

In December of 2012, EHA provided DES with information regarding minimum flows and pond fluctuations at the Gilman Hydroelectric Project. EHA confirmed that the facility 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 solely the result of natural conditions in the Connecticut River and inflow equals outflow at all times.

As part of an amended 401 water quality certificate issued by the Vermont Department of Environmental Conservation (VTDEC) on February 17, 1994 the dam owners are obligated to maintain a minimum instantaneous spilled flow of 210 cfs over the face of the dam when the instantaneous inflow to the project is at or below 1000 cfs during the lower flow period of June 1 – October 15. The United States Geologic Services maintains a stream gage (USGS 01131500) in Dalton, NH on the Connecticut River just downstream of the Gilman Dam Hydroelectric Project. Discharge data from this gage is used to determine when the project inflow is at or below 1000 cfs and thus the 210 cfs spillage over the dam is required. Ampersand Gilman Hydro is required to submit annual Spill Management Plans to the VTDEC to confirm that the dam is operating in compliance with the required flows. EHA has provided DES with the Spill Management Plans for the period of 2003 – 2012 to confirm compliance.

Regarding the issue of fish passage, EHA has provided documentation that Ampersand Gilman Hydro has complied with a USFWS requirement that a downstream fish passage facility be completed. The construction and implementation of the downstream fish passage was completed in the summer of 2012.

March 14, 2013

Page 4 of 4

USFWS has expressed interest in studying the impact of the flow in the plunge pool on out-migrating Atlantic salmon. The purpose of this study would be to determine if the flows in the plunge pool are having an adverse affect on out-migrating Atlantic salmon smolts. In the event that the USFWS and NHFG determine that the flows in the plunge pool are adversely impacting Atlantic salmon, the owners of the facility will implement any other measures as requested by these agencies. New Hampshire Fish and Game (NHFG) has concurred with USFWS that they are supportive of LIHI certification given that the downstream fish passage facility has been adequately completed and that the owner agrees to potential alterations to the facility based on the outcome of any additional information that becomes available based on further study of the facility.

In summary, based on the current and agreed upon changes to the operation of the facility, current water quality standards, the water quality data collected in 2012 and information provided to DES by EHA, it appears the Connecticut River immediately upstream and downstream of the Gilman Hydroelectric Project is attaining water quality standards at this time. As previously noted, however, this assessment could change in the future should a change in water quality criteria or thresholds and/or new data indicate water quality violations. As previously mentioned, dissolved oxygen levels were close to the criterion for average daily percent saturation. As such it is recommended that when flows are closer to the 7Q10 low flow, and temperatures are relatively high, additional sampling be conducted for dissolved oxygen and temperature to confirm compliance. This assessment could also change if the DES, VTDEC, USFWS and/or NHFG conclude in the future that the project is not in compliance with upstream or downstream fish passage requirements or minimum bypass flow requirements.

Should you have any questions or require additional information 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 (via email): Steve Hickey, Essex Hydro Associates, LLC  
Carol Henderson, NHFG  
John Magee, NHFG  
John Warner, USFS  
Sarah Verville, LIHI  
Jeff Crocker, VTDEC



**Vermont Department of Environmental Conservation**

Watershed Management Division

1 National Life Drive, Main 2

Montpelier, VT 05602-3522

<http://www.vtwaterquality.org>

[phone] 802-828-1535

[fax] 802-828-1544

*Agency of Natural Resources*

DISTRIBUTED ELECTRONICALLY

January 3, 2013

Gregory Cloutier  
Ampersand Gilman Hydro, LP  
PO Box 129  
Gilman, VT 05904

RE: Gilman Hydroelectric Project – FERC Project No. 2392  
Downstream Fish Passage

Dear Mr. Cloutier,

Condition C of the water quality certification issued on July 28, 1989 by the Vermont Department of Environmental Conservation (herein the Department) to Dalton Hydro, LLC (now Ampersand Gilman Hydro, LP) required construction of a downstream fish passage facility, primarily for Atlantic salmon, at the Gilman Hydroelectric Project. The Condition C requires the flows needed to operate the fish passage be in addition to those spillage flows stipulated in Condition A for water quality.

Under Condition C, the downstream fish passage facilities are subject to approval from the US Fish and Wildlife Service and Department of Fish and Wildlife, and are to be operated on a schedule determined by the agencies. On August 31, 2012, representatives from the Vermont Agency of Natural Resources and US Fish and Wildlife Service inspected the final construction and initiation of operation of the fish passage facilities, and filed an inspection report with the Department. Based on Department review of the inspection report, the as-built downstream fish passage facilities at Ampersand Gilman Hydro, LP are approved in accordance with Condition C of the water quality certification. The downstream fish passage facilities shall operate from April 15 to June 15, inclusive.

Thank you for your continued cooperation.

Sincerely yours,

Jeff Crocker  
River Ecologist

Attachment:

c: Len Gerardi, VDFW  
Rod Wentworth, VDFW

## Verville, Sarah

---

**From:** Stephen Hickey <sjh@essexhydro.com>  
**Sent:** Wednesday, February 13, 2013 3:34 PM  
**To:** Verville, Sarah  
**Subject:** Fwd: Re: Gilman Hydro, Connecticut River - Gilman, VT, Dalton, NH - Request for LIHI review

Sarah,

Thank you for your update yesterday regarding your review of the Gilman Hydroelectric facility. Please see the below comments from John Warner of USFWS. I have forwarded these comments to Carol Henderson of NH Fish and Game for her review and comments. I will forward them upon receipt. NHDES has completed their review of the water quality data gathered at the project in 2012 and is waiting for the comments from Carol Henderson before issuing their letter.

Thank you,  
Steve

----- Original Message -----

**Subject:**Re: Gilman Hydro, Connecticut River - Gilman, VT, Dalton, NH - Request for LIHI review

**Date:**Wed, 13 Feb 2013 10:35:57 -0500

**From:**Warner, John <[john\\_warner@fws.gov](mailto:john_warner@fws.gov)>

**To:**Stephen Hickey <[sjh@essexhydro.com](mailto:sjh@essexhydro.com)>

**CC:**<[jeff.crocker@state.vt.us](mailto:jeff.crocker@state.vt.us)>, Curtis Orvis <[curtis\\_orvis@fws.gov](mailto:curtis_orvis@fws.gov)>, "Len Gerardi ([len.gerardi@state.vt.us](mailto:len.gerardi@state.vt.us))" <[len.gerardi@state.vt.us](mailto:len.gerardi@state.vt.us)>

Hi Steve - I apologize for the delay in responding, but have had to deal with other priority project on the FERC side and other programs - I needed to dig out the history of our consultation and the more recent review of our fishway engineer Curt Orvis. Appended below in italics is an excerpt of the last correspondence on this that in effect concurs that the facility is complete His comments note the intention to test the plunge pool for salmon smolt safety which may not be a major issue now but this would apply to other fish species as well.

Given the emerging information on turbulence dissipation and fish survival, we are OK with the facility as built, with the caveat that if information from other studies in the future indicate that there may be a concern about the plunge pool volume at Gilman, that the licensee would be agreeable to assessing that component of the facility.

-- JW

*Orvis, Curtis* <[curtis\\_orvis@fws.gov](mailto:curtis_orvis@fws.gov)>

*to Jeff, me*



*Jeff, Len, John*

*My remaining concern is with the plunge pool. I have not had time to look up the volume, but Greg added it to the last report. Our Fish Passage Engineering group is gathering data and working on criteria for turbulence in the pools. Based on work we did with Brookfield in NY it appears a volumetric ratio of flow to pool volume to contain the flow and not overtop side walls is 1 cfs to 20 cubic feet. At the Rainbow Falls site in NY, we looked at EDF (Energy Dissipation Factor) and were only physically able to make the pool large enough for an EDF of about 10. That site will not undergo testing until later this year with landlocked Atl salmon smolts. Please see attached summary.*

*For the Gilman Project with a 5'D x 14.7' W and 25.5' L pool, the volume is 1874 cubic feet. With all the 200 cfs of minimum flow passing through the downstream bypass gate, the ratio is slightly less than 1 to 10. This compares favorably with our published result from the plunge pool at the Fourth Branch on the Mohawk River where the final result was 1 to 10. Please see attached paper.*

*Thus, since the plunge pool flow is directly connected with the River and will be tested with outmigrating Atl salmon smolts being captured downstream, we should see first hand in the downstream captures whether scaling, injury, or mortality can be attributed to the plunge pool. I would leave it up to John Warner whether this is needed to be added to the memo.*

*Otherwise, I would concur with Greg and consider the Gilman Downstream Facility Reporting completed. Sorry for the delay in responding. The files on Gilman are more than 6 inches thick and have been boxed in our off site storage.  
Curt*

On Wed, Jan 23, 2013 at 9:14 AM, Stephen Hickey <[sjh@essexhydro.com](mailto:sjh@essexhydro.com)> wrote:  
Hi John,

NHDES is waiting for confirmation from you regarding the adequacy of fish passage measures and minimum flow bypass currently in operation at the Gilman hydroelectric facility before they will issue their letter confirming that the project does not cause or contribute to violations of state water quality standards. Do you know when you will be able to respond to my below requests for comment?

Thank you,  
Steve

On 1/9/2013 1:32 PM, Stephen Hickey wrote:  
John,

Do you know when you will be able to respond to my below March 7, 2012 request for comment regarding Ampersand Gilman Hydro's application to LIHI for certification as a low impact hydroelectric facility? Attached for your reference is Ampersand Gilman Hydro's final progress report sent to VT ANR for submission to the FERC. Installation of the downstream fish passage has been completed and the passage is fully operational.

The water quality testing required by NH DES was completed in the summer of 2012 and DES is awaiting confirmation from you, Carol Henderson and Brian Fitzgerald regarding the adequacy of fish passage measures at the project.

Thank you,  
Steve

On 3/7/2012 2:24 PM, Stephen Hickey wrote:

John,

I am working on a LIHI application for Ampersand Gilman Hydro LP's Gilman hydroelectric project located on the Connecticut in Gilman, Essex County, Vermont and Dalton, Coos County, New Hampshire. Can you comment on the project's compliance with the terms and conditions of its FERC License (Project No. 2392) issued April 13, 1994 and attached for your reference? In particular, the history behind the project's negotiations with the USFWS regarding their ongoing efforts to comply with the 2007 requirement to install downstream fish passage and whether or not you would support their application to LIHI following the completion of the installation of downstream passage this Spring? It is my understanding that the downstream passage will be completed in the Spring of 2012, flows permitting.

Thank you and please contact me if you need any additional information.

Steve

Stephen Hickey  
Hydro Management Group  
as authorized agent for Worcester Hydro Co. Inc.  
55 Union Street, 4th Floor  
Boston, MA 02108  
tel: 617-367-0032  
fax: 617-367-3796

--

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John P. Warner  
Assistant Supervisor, Conservation Planning Assistance and Endangered Species  
New England Field Office, U.S. Fish and Wildlife Service  
70 Commercial Street, Suite 300  
Concord, NH 0330-5087  
phone: 603-223-2541, Ext 15  
fax: 603-223-0104

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## Verville, Sarah

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**From:** Stephen Hickey <[sjh@essexhydro.com](mailto:sjh@essexhydro.com)>  
**Sent:** Thursday, February 14, 2013 3:22 PM  
**To:** Verville, Sarah  
**Subject:** Fwd: RE: Re: Gilman Hydro, Connecticut River - Gilman, VT, Dalton, NH - Request for LIHI review

Sarah,

Please find below New Hampshire Fish and Game's approval of the fish passage constructed in 2012 at the Gilman Hydroelectric facility on the Connecticut River in Dalton, NH and Gilman, VT.

Thank you for including this in your review.

Steve

----- Original Message -----

**Subject:**RE: Re: Gilman Hydro, Connecticut River - Gilman, VT, Dalton, NH - Request for LIHI review  
**Date:**Thu, 14 Feb 2013 13:54:23 -0500  
**From:**Henderson, Carol <[Carol.Henderson@wildlife.nh.gov](mailto:Carol.Henderson@wildlife.nh.gov)>  
**To:**Stephen Hickey <[sjh@essexhydro.com](mailto:sjh@essexhydro.com)>

Hi Steve:

In accordance with the final fish passage construction progress report and the USFWS 's comments noted below, the Department concurs that the Gilman hydroelectric plant 's downstream passage has been completed. In addition, the Department also agrees with the stipulation outlined by the USFWS which states: "if information from other studies in the future indicate that there may be a concern about the plunge pool volume at Gilman, that the licensee would be agreeable to assessing that component of the facility". I hope this information has been helpful. If you have any questions or comments, please do not hesitate to contact me. Thank you, Carol Henderson, NH Fish and Game Department

---

**From:** Stephen Hickey [<mailto:sjh@essexhydro.com>]  
**Sent:** Wednesday, February 13, 2013 11:04 AM  
**To:** Henderson, Carol  
**Subject:** Fwd: Re: Gilman Hydro, Connecticut River - Gilman, VT, Dalton, NH - Request for LIHI review

Carol,

Can you confirm you are in agreement with John Warner's assessment of the downstream fish passage installed in 2012 at the Gilman hydroelectric plant located on the Connecticut River in Dalton, NH and Gilman, VT? I have submitted an application to the Low Impact Hydropower Institute for the low impact certification of this project and LIHI required confirmation from your agency of the adequacy of the fish passage measures currently in place at the project. I have attached for your reference the project's FERC license (P-2932) issued April 13, 1994 and the final fish passage construction progress report submitted to the FERC January 7, 2013.

Thank you,  
Steve

Stephen Hickey  
Hydro Management Group, LLC  
as agent for Ampersand Gilman Hydro, LP  
c/o Essex Hydro Associates, L.L.C.  
55 Union Street, 4th Floor  
Boston, MA 02108  
tel: 617-367-0032  
fax: 617-367-3796

----- Original Message -----

**Subject:**Re: Gilman Hydro, Connecticut River - Gilman, VT, Dalton, NH - Request for LIHI review

**Date:**Wed, 13 Feb 2013 10:35:57 -0500

**From:**Warner, John <[john\\_warner@fws.gov](mailto:john_warner@fws.gov)>

**To:**Stephen Hickey <[sjh@essexhydro.com](mailto:sjh@essexhydro.com)>

**CC:**<[jeff.crocker@state.vt.us](mailto:jeff.crocker@state.vt.us)>, Curtis Orvis <[curtis\\_orvis@fws.gov](mailto:curtis_orvis@fws.gov)>, "Len Gerardi  
([len.gerardi@state.vt.us](mailto:len.gerardi@state.vt.us))" <[len.gerardi@state.vt.us](mailto:len.gerardi@state.vt.us)>

Hi Steve - I apologize for the delay in responding, but have had to deal with other priority project on the FERC side and other programs - I needed to dig out the history of our consultation and the more recent review of our fishway engineer Curt Orvis. Appended below in italics is an excerpt of the last correspondence on this that in effect concurs that the facility is complete His comments note the intention to test the plunge pool for salmon smolt safety which may not be a major issue now but this would apply to other fish species as well.

Given the emerging information on turbulence dissipation and fish survival, we are OK with the facility as built, with the caveat that if information from other studies in the future indicate that there may be a concern about the plunge pool volume at Gilman, that the licensee would be agreeable to assessing that component of the facility.

-- JW

Orvis, Curtis <[curtis\\_orvis@fws.gov](mailto:curtis_orvis@fws.gov)>

to Jeff, me



Jeff, Len, John

*My remaining concern is with the plunge pool. I have not had time to look up the volume, but Greg added it to the last report. Our Fish Passage Engineering group is gathering data and working on criteria for turbulence in the pools. Based on work we did with Brookfield in NY it appears a volumetric ratio of flow to pool volume to contain the flow and not overtop side walls is 1 cfs to 20 cubic feet. At the Rainbow Falls site in NY, we looked at EDF (Energy Dissipation Factor) and were only physically able to make the pool large enough for an EDF of about 10. That site will not undergo testing until later this year with landlocked Atl salmon smolts. Please see attached summary.*

*For the Gilman Project with a 5'D x 14.7' W and 25.5' L pool, the volume is 1874 cubic feet. With all the 200 cfs of minimum flow passing through the downstream bypass gate, the ratio is slightly less than 1 to 10. This compares favorably with our published result from the plunge pool at the Fourth Branch on the Mohawk River where the final result was 1 to 10. Please see attached paper.*

*Thus, since the plunge pool flow is directly connected with the River and will be tested with outmigrating Atl salmon smolts being captured downstream, we should see first hand in the downstream captures whether scaling, injury, or mortality can be attributed to the plunge pool. I would leave it up to John Warner whether this is needed to be added to the memo.*

*Otherwise, I would concur with Greg and consider the Gilman Downstream Facility Reporting completed. Sorry for the delay in responding. The files on Gilman are more than 6 inches thick and have been boxed in our off site storage.*  
*Curt*

On Wed, Jan 23, 2013 at 9:14 AM, Stephen Hickey <[sjh@essexhydro.com](mailto:sjh@essexhydro.com)> wrote:  
Hi John,

NHDES is waiting for confirmation from you regarding the adequacy of fish passage measures and minimum flow bypass currently in operation at the Gilman hydroelectric facility before they will issue their letter confirming that the project does not cause or contribute to violations of state water quality standards. Do you know when you will be able to respond to my below requests for comment?

Thank you,  
Steve

On 1/9/2013 1:32 PM, Stephen Hickey wrote:  
John,

Do you know when you will be able to respond to my below March 7, 2012 request for comment regarding Ampersand Gilman Hydro's application to LIHI for certification as a low impact hydroelectric facility? Attached for your reference is Ampersand Gilman Hydro's final progress report sent to VT ANR for submission to the FERC. Installation of the downstream fish passage has been completed and the passage is fully operational.

The water quality testing required by NH DES was completed in the summer of 2012 and DES is awaiting confirmation from you, Carol Henderson and Brian Fitzgerald regarding the adequacy of fish passage measures at the project.

Thank you,  
Steve

On 3/7/2012 2:24 PM, Stephen Hickey wrote:  
John,

I am working on a LIHI application for Ampersand Gilman Hydro LP's Gilman hydroelectric project located on the Connecticut in Gilman, Essex County, Vermont and Dalton, Coos County, New Hampshire. Can you comment on the project's compliance with the terms and conditions of its FERC License (Project No. 2392) issued April 13, 1994 and attached for your reference? In particular, the history behind the project's negotiations with the USFWS regarding their ongoing efforts to comply with the 2007 requirement to install downstream fish passage and whether or not you would support their application to LIHI following the completion of the installation of downstream passage this Spring? It is my understanding that the downstream passage will be

completed in the Spring of 2012, flows permitting.

Thank you and please contact me if you need any additional information.

Steve

Stephen Hickey  
Hydro Management Group  
as authorized agent for Worcester Hydro Co. Inc.  
55 Union Street, 4th Floor  
Boston, MA 02108  
tel: 617-367-0032  
fax: 617-367-3796

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John P. Warner  
Assistant Supervisor, Conservation Planning Assistance and Endangered Species  
New England Field Office, U.S. Fish and Wildlife Service  
70 Commercial Street, Suite 300  
Concord, NH 0330-5087  
phone: 603-223-2541, Ext 15  
fax: 603-223-0104

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## Verville, Sarah

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**From:** Stephen Hickey <sjh@essexhydro.com>  
**Sent:** Thursday, February 14, 2013 3:26 PM  
**To:** Verville, Sarah  
**Subject:** Fwd: Re: Ampersand Gilman Fishpassage Operational Test 8.31.12

Sarah,

Please see the below email from Brian Fitzgerald of the VT Agency of Natural Resources stating that he will be relying on USFWS and VTDFW to determine the effectiveness of the fish passage installed at the Gilman hydroelectric project. Per the email I forwarded to you yesterday, John Warner has approved the downstream passage facility as built in 2012.

Thank you,  
Steve

----- Original Message -----

**Subject:**Re: Ampersand Gilman Fishpassage Operational Test 8.31.12

**Date:**Mon, 13 Aug 2012 13:33:01 -0400

**From:**Greg Cloutier <[watrpwr@gmail.com](mailto:watrpwr@gmail.com)>

**To:**Fitzgerald, Brian <[Brian.Fitzgerald@state.vt.us](mailto:Brian.Fitzgerald@state.vt.us)>

**CC:**Gerardi, Len <[Len.Gerardi@state.vt.us](mailto:Len.Gerardi@state.vt.us)>, Wentworth, Rod <[rod.wentworth@state.vt.us](mailto:rod.wentworth@state.vt.us)>, [John\\_Warner@fws.gov](mailto:John_Warner@fws.gov) <[John\\_Warner@fws.gov](mailto:John_Warner@fws.gov)>, Curt Orvis <[curtis\\_orvis@fws.gov](mailto:curtis_orvis@fws.gov)>

Thanks

Sent from my iPhone

On Aug 13, 2012, at 11:03 AM, "Fitzgerald, Brian" <[Brian.Fitzgerald@state.vt.us](mailto:Brian.Fitzgerald@state.vt.us)> wrote:

Greg:

I won't be participating in the test. We'll be relying on the USFWS and Vt. Dept. of Fish and Wildlife to evaluate the effectiveness of the passage.

BTF

*Brian T. Fitzgerald*

Streamflow Protection Coordinator

Vermont Agency of Natural Resources  
Department of Environmental Conservation  
Watershed Management Division  
10 East Allen Street  
Winooski, VT

**Mailing address:**

103 South Main Street  
Waterbury, VT 05671-0408

802.338.4852  
802.793.0454 (cell)

[brian.fitzgerald@state.vt.us](mailto:brian.fitzgerald@state.vt.us)  
<http://www.vtwaterquality.org>

Conservation is a cause that has no end. There is no point at which we will say our work is finished.  
- Rachel Carson



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**From:** watrpwr [<mailto:watrpwr@gmail.com>]

**Sent:** Thursday, August 09, 2012 07:44

**To:** Fitzgerald, Brian

**Cc:** John Chessman; David Deen; Gerardi, Len; Fitzgerald, Brian; John Trube; Craig Rennie; Wentworth, Rod; Charles Cataldo; Joe Enrico; Steve Doyon; Lutz Loegters; Curtis Orvis; Carol Henderson; John Warner; William Thomas

**Subject:** Ampersand Gilman Fishpassage Operational Test 8.31.12

Brian

We have discussed, with Curt Orvis USF&W, regarding our upcoming operational test of the Gilman fish passage. Mr. Orvis is available to complete this test on Friday, August 31, 2012 and we have scheduled John Trube or consultant.

I'm advising the attached copy list of our new proposed test date, If you or have any issue with this proposed test date, please advise me as soon as possible.

Greg Cloutier  
COO  
603.443.7610

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**Vermont Department of Environmental Conservation**

Watershed Management Division

1 National Life Drive, Main 2

Montpelier, VT 05620-3522

<http://www.vtwaterquality.org>

[phone] 802-828-1535

[fax] 802-828-1544

*Agency of Natural Resources*

DISTRIBUTED ELECTRONICALLY

April 5, 2013

Mr. Stephen Hickey  
Essex Hydro Association, LLC  
55 Union Street, 4<sup>th</sup> Floor  
Boston, MA 02108

RE: Gilman Falls Hydroelectric Project (FERC No. 2392)  
Comments on Low Impact Hydro Certification

Dear Mr. Hickey:

Thank you for this opportunity to comment on Ampersand Gilman Hydro's application to the Low Impact Hydropower Institute (LIHI) for certification of the Gilman Falls Hydroelectric Project as a low impact hydroelectric project.

The Gilman Falls Hydroelectric Project was originally certified in 1989 by the Department of the Environmental Conservation (Department). In 1994 Condition A of certification was amended to reflex a change in the spillage regime. Conformance with the conditions of the certification and amendment would assure that the project does not violate Vermont Water Quality Standards. At this time the Department does not have any information suggesting that the project is not operating in full compliance with the conditions in its water quality certification.

As part of the LIHI certification process, New Hampshire Department of Environmental Services (NH DES) requested that Ampersand Gilman Hydro conduct water quality monitoring to ensure operations at the dam were not causing or contributing to water quality standard violation in the vicinity of the project. The study was completed in summer 2012 and results compared with the Vermont Water Quality Standards. All water quality parameter monitored during the study met Vermont Water Quality Standards, but as indicated in NH DES letter dated March 14, 2013, the dissolved oxygen level data was inconclusive. Dissolved oxygen levels decreased throughout the study with a minimum level of 6.36 mg/L recorded on the last day of the study. This is approaching the minimum water quality standard for dissolved oxygen in Vermont for Class B waters of 6.0 mg/L. The Department concurs with NH DES recommendations that the project sample DO when high temperatures and stream flow approach low flow conditions in order to confirm compliance.

Under Condition C of the water quality certification, the project was required to provide downstream fish passage for Atlantic salmon. Ampersand Gilman Hydro completed installation of the fish passage in August 2012. The US Fish and Wildlife Service (Service) have expressed

interest in studying the effect of the plunge pool on out migrating Atlantic salmon. If the plunge pool is found to cause injury or mortality, the owners must implement any other measures to the downstream fish passage as prescribed by the Service.

Currently, Ampersand Gilman Hydro operation dates for the downstream fish passage are only in the spring. The Vermont Department of Fish and Wildlife recommends that fish passage be operational during the fall period, (September 15 – November 15) similar to other hydroelectric projects located downstream, based on Section 18 prescriptions by the US Fish and Wildlife Service and water quality certification requirements.

The fall is an important period for downstream movement for fish as salmon “pre-smolts” typically initiate their downstream movements during the preceding fall, and other fishes such as trout also move during this period. These factors should be considered when determining if the project is “low impact”.

The Department does not have any other information regarding compliance of the Gilman Falls Hydroelectric Project.

Sincerely yours,

Jeff Crocker  
River Ecologist

#### Attachment

c: Gregory Cloutier, AGH  
Rod Wentworth, VT DFW  
Len Gerardi, VT DFW  
John Warner, USFWS  
Melissa Grader, USFWS  
Ted Walsh, NH DES  
David Deen, CRWC



717 Atlantic Avenue, Suite 1A  
Boston, MA 02111  
Tel: 416 643 6615  
Fax: 416 642 6611

Vermont Department of Environmental Conservation  
Agency of Natural Resources  
Watershed Management Division  
1 National Life Drive, Main 2  
Montpelier, VT 05620-3522  
Att: Jeff Crocker

May 1, 2013

Re: Comment letter from VT DEC regarding Ampersand Gilman Hydro LP's  
request for LIHI certification

Dear Jeff,

This letter is in response to your letter from April 5th, 2013 to Stephen Hickey from Essex Hydro Association commenting on Ampersand Gilman Hydro LP's ("AGH") request for LIHI certification of its Gilman Hydro project (the "Project") in Gilman, Vermont.

AGH is committed to the operation of its downstream passage installed at the Project. The fish passage was designed and implemented in close cooperation with the relevant agencies and is in full compliance with the Project's FERC license.

We would like to raise three main points in response to your letter:

1. Dissolved Oxygen tests

In your letter you did not provide a complete review of all information relating to dissolved oxygen (DO) studies completed at the Project, and did not take into

consideration the low flow DO monitoring plan designed in accordance with the Project's FERC license.

Within the 10 days test period, DO data was taken every 15 minutes from 8/1/2012 to 8/10/2012. During that period, the North Country experienced draught like conditions. Appendix A provides the Project's "low flow monitoring plan" which is filed annually with FERC.

AGH is asking the Vermont Agency of Natural Resources (VT ANR) to take in consideration the many years of DO monitoring tests completed for the Project. The Project's long history of monitoring the Connecticut River's minimum water quality standards and DO levels (Class B waters of 6,0 mg/L) produced a detailed DO monitoring procedure put in place by AGH for the Project.

Note that during the 2012 test period, AGH had already implemented its "Low Flow Operating Protocol". In accordance with this Protocol, the Project will spill 210 cfs over the crest gate for aeration flow when and if river flows drop below 1,000 cfs.

Specifically, the Protocol reads as follows (note that the word operator means the on staff operations personal that man the Gilman Project 24/7):

Operators Low Flow Guidelines

**Take Action when** flows are below 1000 cfs at the Dalton gage for 16 hours.

**Flows will be determined by** using the "Dalton Phone Gage Reading" and using the USGS gage table found in the operators desk draw or computer USGS web page.

**ACTION Taken by Operations:** slowly over 8 hours, lower the crest gate to the "white mark" while making turbine adjustments (manually or in auto); this will spill 210 cfs over the crest gate for oxygenation of the river downstream and water quality.

History has shown that the minimum water quality standards for DO in Vermont for Class B waters of 6,0 mg/L come in question at around 600 cfs, even if the Project has started to spill the 210 cfs aeration flows. At 600 cfs, AGH staff moves to Plan B of the Protocol:

Take Action when: in the months of July, August and September "when and if" river flows continue to decrease below 600 cfs for a period of 48 hours (AGH needs to do mandatory dissolved oxygen test in the Connecticut River).

ACTION by OPERATORS: if flows appear to drop below 600 cfs in the following week or days, call supervising operator/project engineer. Who will start the water testing company to do the required testing.

If daily testing at the three sample points indicate that the Project is going below the Class B minimum, AGH is required to increase its aeration flows over the crest gate as necessary to achieve DO levels of 6.0 mg/L.

In conclusion, we strongly believe that the existing Low Flow Operating Protocol provide a good real time management plan for the project to maintain Class B water standards during periods of low flows. The DO levels did decrease throughout the study with a minimum level of 6.36 mg/L recorded on the last day of the study. If you look at the river flows during the test period the Project flows were near 600 cfs. If water flows would have dropped below 600 cfs, AGH's Low Flow Operating Protocol would have required AGH to take corrective action by monitoring real time testing and adding aeration flows to maintain Class B minimums.

## 2. Downstream Fish Passage

On January 3, 2013, AGH received final approval of the requirements of Condition C of the water quality certification as part of its FERC license for downstream fish passage.

AGH agreed with final concerns made by the US FWS that further studies may be needed to assess the effect of the plunge pool on migrating Atlantic salmon (the depth of the final pool may not be deep enough during abnormal low spring river flow conditions). Furthermore, AGH agreed that if the plunge pool is found to cause injury or mortality, AGH will implement any other measures to the downstream fish passage as prescribed by the US FWS.

The January 1, 2013 VT ANR approval (Appendix B) reflects five years of studies and consultations between agencies and fish passage experts. The consultation included CFD modeling of the river as well as scores of design and operational proposals. AGH hired fish passage and migration consultants to review designs and to recommend options to mitigated inlet velocities, entrance flows, angles of flows, and passage flows. There have been up to 20 different State and Federal agencies involved in reviewing this passage project design and operation.

Note that the agencies and environmental consultants at no point in time during this process suggested or discussed operation of the Gilman fish passage in the fall between September 15 – November 15.

Your letter comments that "The Vermont Department of Fish and Wildlife recommends that fish passage be operational during the fall period (September 15 – November 15) similar to other hydroelectric projects located downstream".

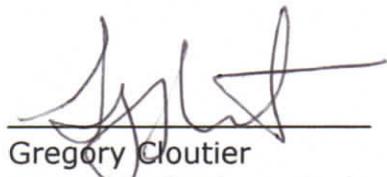
Note that none of the projects directly downstream (Moore, McIndoes, and Ryegate) of the Project provide a fall passage. Furthermore, Moore Dam is directly downstream and has received approval for LIHI certification.

AGH certainly appreciates the importance of downstream movement of fish from the small streams and brooks to winter in deeper water safe from freezing.

3. Lastly, AGH believes that Section 18 of the FERC License reserves the authority to the Interior to provide specific requests for passage. And, if the need for late season passage for "pre-smolts" salmon is deemed necessary in the future, Section 18 provides Vermont the necessary procedure to make the request.

If you have any questions, don't hesitate to contact me.

Regards,



Gregory Cloutier  
Ampersand Gilman Hydro LP

**CC.**

| <b>TITLE</b>       | <b>NAME</b>        | <b>PHONE NUMBER</b> | <b>E-MAIL ADDRESS</b>  |
|--------------------|--------------------|---------------------|--|
| NH DES             | William Thomas     | 603-271-3504        | <a href="mailto:William.thomas@eds.nh.gov">William.thomas@eds.nh.gov</a>             |
| NHDES              | Ted Walsh          |                     | <a href="mailto:Ted_Walsh@des.nh.gov">Ted_Walsh@des.nh.gov</a>                       |
| USFWS              | Melissa Grader     |                     | <a href="mailto:Melissa_Grader@fws.gov">Melissa_Grader@fws.gov</a>                   |
| USFWS              | John Warner        | 603-223-2541        | <a href="mailto:John_Warner@fws.gov">John_Warner@fws.gov</a>                         |
| VT Fish & Wildlife | Rod Wentworth      | 802-241-3709        | <a href="mailto:rod.wentworth@state.vt.us">rod.wentworth@state.vt.us</a>             |
| VT Fish & Wildlife | Len Gerardi        | 802-751-0108        | <a href="mailto:Len.gerardi@state.vt.us">Len.gerardi@state.vt.us</a>                 |
| NH Fish & Game     | Carol Henderson    | 603-271-2501        | <a href="mailto:Carol.Henderson@wildlife.nh.gov">Carol.Henderson@wildlife.nh.gov</a> |
| NH DES             | Craig Rennie       | 603-271-0676        | <a href="mailto:crennie@des.state.nh.us">crennie@des.state.nh.us</a>                 |
| VT ANR             | Brian Fitzgerald   | 802-490.6153        | <a href="mailto:brian.fitzgerald@state.vt.us">brian.fitzgerald@state.vt.us</a>       |
| LIHI               | Dr. Michael J Sale |                     | <a href="mailto:mjsale@lowimpacthydro.org">mjsale@lowimpacthydro.org</a>             |
| TRC Co.            | Sarah Verville     |                     | <a href="mailto:SVerville@trcsolutions.com">SVerville@trcsolutions.com</a>           |
| CRWC               | David Deen         |                     | <a href="mailto:ddeen@ctriver.org">ddeen@ctriver.org</a>                             |

## Appendix A

| Date      | Time | Impound | Tail WL | cfs  |
|-----------|------|---------|---------|------|
| 8/1/2012  | 3pm  | 833.25  | 807.52  | 838  |
| 8/1/2012  | 11pm | 833.22  | 807.53  | 844  |
| 8/1/2012  | 6am  | 833.25  | 807.48  | 810  |
| 8/2/2012  | 3pm  | 833.21  | 807.53  | 844  |
| 8/2/2012  | 11pm | 833.23  | 807.44  | 784  |
| 8/2/2012  | 6am  | 833.20  | 807.49  | 783  |
| 8/3/2012  | 3pm  | 833.20  | 807.44  | 784  |
| 8/3/2012  | 11pm | 833.17  | 807.54  | 851  |
| 8/3/2012  | 6am  | 833.15  | 807.44  | 752  |
| 8/4/2012  | 3pm  | 833.15  | 807.41  | 764  |
| 8/4/2012  | 11pm | 833.15  | 807.29  | 688  |
| 8/4/2012  | 6am  | 833.18  | 807.34  | 719  |
| 8/5/2012  | 3pm  | 833.17  | 807.27  | 675  |
| 8/5/2012  | 11pm | 833.20  | 807.34  | 719  |
| 8/5/2012  | 6am  | 833.19  | 807.57  | 835  |
| 8/6/2012  | 3pm  | 833.19  | 807.54  | 851  |
| 8/6/2012  | 11pm | 833.20  | 807.75  | 958  |
| 8/6/2012  | 6am  | 833.20  | 807.81  | 1000 |
| 8/7/2012  | 3pm  | 833.17  | 807.75  | 1000 |
| 8/7/2012  | 11pm | 833.15  | 807.77  | 1020 |
| 8/7/2012  | 6am  | 833.20  | 807.24  | 815  |
| 8/8/2012  | 3pm  | 833.18  | 807.54  | 815  |
| 8/8/2012  | 11pm | 833.16  | 807.46  | 764  |
| 8/8/2012  | 6am  | 833.25  | 807.30  | 666  |
| 8/9/2012  | 3pm  | 833.21  | 807.42  | 770  |
| 8/9/2012  | 11pm | 833.27  | 807.34  | 719  |
| 8/9/2012  | 6am  | 833.29  | 807.56  | 879  |
| 8/10/2012 | 3pm  | 833.19  | 808.72  | 1800 |

## Appendix B

RE: Gilman Hydroelectric Project – FERC Project No. 2392  
Downstream Fish Passage

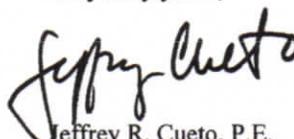
Dear Mr. Harmsen:

Condition C of the July 28, 1989, water quality certification issued by the Vermont Department of Environmental Conservation under 33 U.S.C. §1341 for the Gilman Hydroelectric Project contains a provision for instituting downstream fish passage upon a request by the U.S. Fish and Wildlife Service and the Vermont Department of Fish and Wildlife. I am in receipt of a letter to you dated January 31, 2007 from the Fish and Wildlife Service making such a request. I have also received a note of concurrence from the Vermont Department of Fish and Wildlife. Please consider this letter as the Department of Environmental Conservation's formal request on behalf of the Vermont Agency of Natural Resources, which includes the Vermont Department of Fish and Wildlife, that Dalton Hydro, LLC move forward with the design and construction of downstream passage facilities under the provisions of the water quality certification.

Functional facilities are to be in place and operational for spring outmigration of Atlantic salmon in 2008. Per the certification, the design plans and operating schedule are subject to approval by both the Fish and Wildlife Service and the Vermont Department of Fish and Wildlife and must be filed with my office for the record, along with the approval letters, before the start of construction.

Thank you for your cooperation.

Very truly yours,

  
Jeffrey R. Cueto, P.E.  
Chief Hydrologist



APPENDIX E-1  
GILMAN HYDROELECTRIC PROJECT REVIEW  
NEW HAMPSHIRE NATURAL HERITAGE BUREAU  
DTD MARCH 16, 2012  
&  
VERMONT AGENCY OF NATURAL RESOURCES  
DTD MARCH 14, 2012

**Memo**



NH NATURAL HERITAGE BUREAU  
NHB DATACHECK RESULTS LETTER

**To:** Stephen Hickey, Essex Hydro Associates, L.L.C.  
55 Union Street, 4th Floor  
Boston, MA 02108

**From:** Melissa Coppola, NH Natural Heritage Bureau

**Date:** 3/16/2012

**Re:** Review by NH Natural Heritage Bureau

NHB File ID: NHB12-0616      Town: Dalton      Location: Tax Maps: map 403, lot 34

Description: This request pertains to the existing hydroelectric project located on the Connecticut River which is applying to the Low Impact Hydropower Institute for certification as a low impact facility. A complete list of the threatened and endangered species found within the project boundary is a requirement of the application.

cc: Kim Tuttle, Susi von Oettingen

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments: This site is within an area flagged for possible impacts on the federally-listed *Alasmidonta heterodon* (dwarf wedgemussel) in Connecticut River.

**Invertebrate Species**

|   | State <sup>1</sup> | Federal | Notes   |
|---|--------------------|---------|---|
| Dwarf Wedge Mussel ( <i>Alasmidonta heterodon</i> ) | E                  | E       | Contact the NH Fish & Game Dept and the US Fish & Wildlife Service (see below). |

<sup>1</sup>Codes: "E" = Endangered, "T" = Threatened, "-" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (\*) indicates that the most recent report for that occurrence was more than 20 years ago.

Contact for all animal reviews: Kim Tuttle, NH F&G, (603) 271-6544. Contact for federally-listed species: Susi von Oettingen, US FWS, at (603) 223-2541.

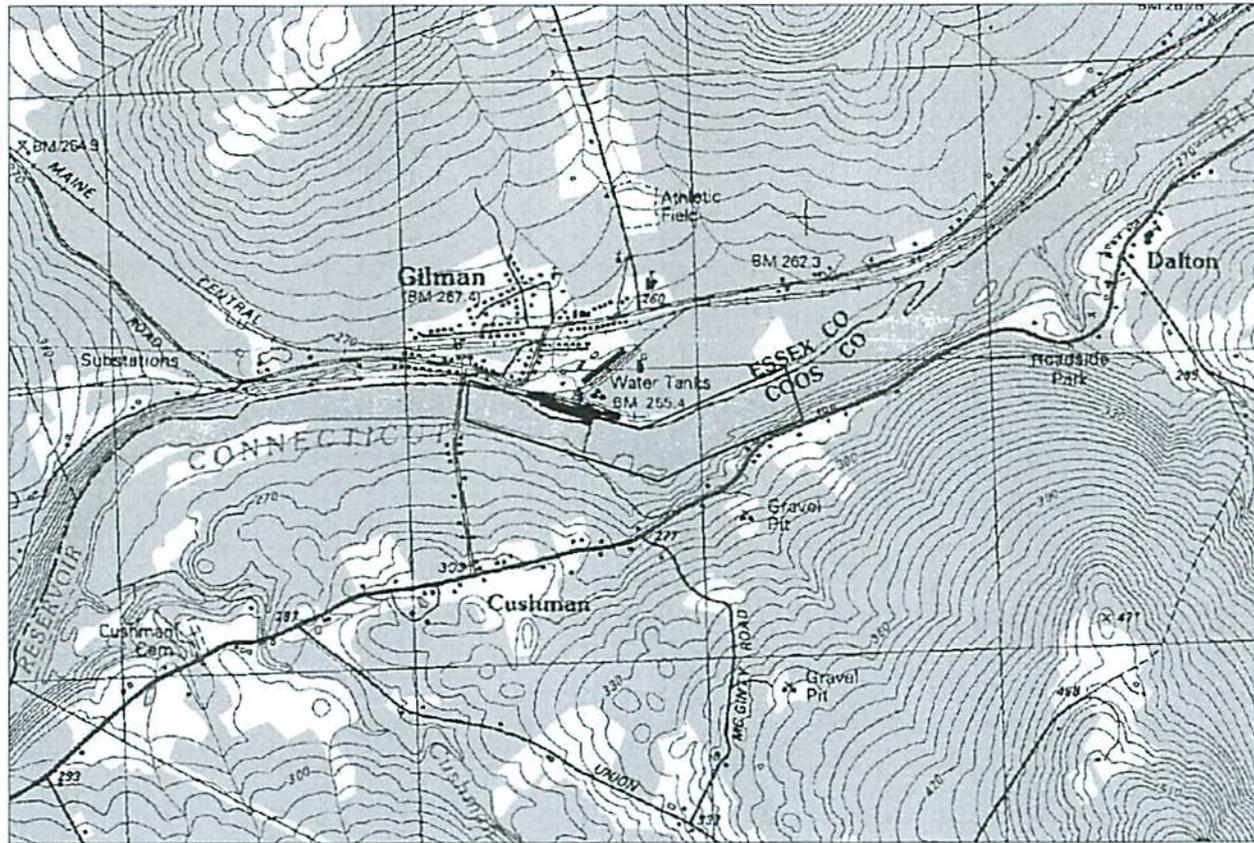
A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.



NH NATURAL HERITAGE BUREAU

Known locations of rare species and exemplary natural communities

Note: Mapped locations are not always exact. Occurrences that are not in the vicinity of the project are not shown.



0.5 0 0.5 1 Miles

\*Historical record

1:18000

Valid for one year from this date: 16 Mar 2012



**Department of Fish and Wildlife**

5 Perry Street, Suite 40  
Barre, VT 05641-4266

[www.vtfishandwildlife.com](http://www.vtfishandwildlife.com)

[phone] 802-476-0199

[fax] 802-476-0129

[tdd] 802-828-3345

March 14, 2012

Mr. Stephen Hickey  
Hydro Management Group, LLC  
55 Union Street, 4<sup>th</sup> Floor  
Boston, MA 02108  
[sjh@essexhydro.com](mailto:sjh@essexhydro.com)

Re: Gilman Hydro LIHI Certification. Gilman, VT.

Dear Mr. Hickey:

I am in receipt of your March 9, 2012 email to John Austin and Amy Alfieri requesting information regarding the presence of threatened and endangered species located in the project area. I have been directed to respond to your request. A search of our database indicates the presence of a federal and state listed endangered species, dwarf wedgemussel (*Alasmidonta heterodon*), present above and below the Gilman hydroelectric facility. The Lunenburg, VT reach of the Connecticut River is documented as having one of the highest densities of dwarf wedgemussel throughout the species' range which was originally from New Brunswick to North Carolina.

If you have any questions or concerns, please feel free to contact me at (802) 476-0198, or by email at [time.appleton@state.vt.us](mailto:time.appleton@state.vt.us). For your information, I have attached a map indicating areas of responsibility for project review, and direct your attention to the Department's website [vtfishandwildlife.com](http://vtfishandwildlife.com) for additional information under tabs *wildlife programs* and then *regulatory review*.

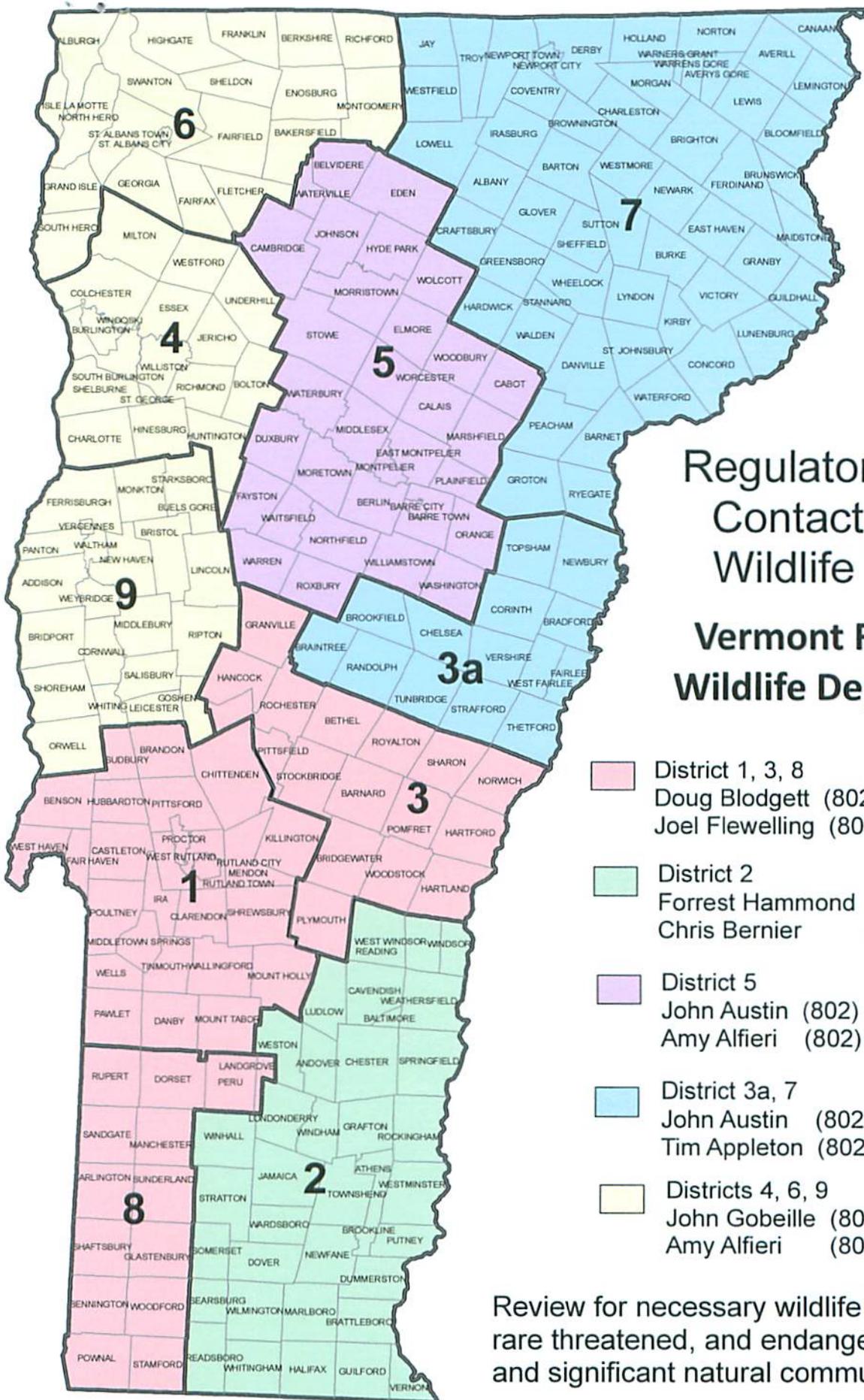
Sincerely,



Timothy J. Appleton  
Fish & Wildlife Specialist

cc: John Austin, Wildlife Biologist  
Mark Ferguson, Natural Heritage Information Project  
Amy Alfieri, Wildlife Specialist





# Regulatory Review Contacts for the Wildlife Division Vermont Fish and Wildlife Department

- District 1, 3, 8  
 Doug Blodgett (802) 878-3861  
 Joel Flewelling (802) 786-3879
- District 2  
 Forrest Hammond (802) 885-8832  
 Chris Bernier (802) 885-8833
- District 5  
 John Austin (802) 476-0197  
 Amy Alfieri (802) 479-4439
- District 3a, 7  
 John Austin (802) 476-0197  
 Tim Appleton (802) 476-0198
- Districts 4, 6, 9  
 John Gobeille (802) 879-5696  
 Amy Alfieri (802) 479-4439

Review for necessary wildlife habitat;  
rare threatened, and endangered species;  
and significant natural communities



APPENDIX E-2  
GILMAN HYDROELECTRIC PROJECT IMPACT REVIEW  
THE UNITED STATES FISH AND WILDLIFE SERVICE  
DTD APRIL 19, 2012



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

New England Field Office  
70 Commercial Street, Suite 300  
Concord, NH 03301-5087  
<http://www.fws.gov/newengland>



April 19, 2012

Mr. Stephen J. Hickey  
Hydro Management Group, LLC  
55 Union Street, 4<sup>th</sup> Floor  
Boston, MA 02108

Dear Mr. Hickey:

This responds to your April 8, 2012 e-mail requesting that we review an application to the Low Impact Hydropower Institute for certification of the Gilman Hydroelectric Project for potential effects to federally endangered dwarf wedgemussels. Our comments are provided in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1533).

Dwarf wedgemussels occur below and above the Gilman Hydroelectric Project in Gilman, Vermont/Dalton, New Hampshire. According to information provided in your April 8, 2012 e-mail, the hydroelectric dam operates in a run-of-river mode where instantaneous flows below the tailrace are maintained equivalent to instantaneous inflows into the impoundment. No structural or operational changes are proposed as part of the certification application. Therefore, based on the fact that there will be no physical or operational changes to the project, and no documented adverse effects to dwarf wedgemussels have occurred from the current operation of the hydroelectric dam, we anticipate that the proposed certification is not likely to adversely affect dwarf wedgemussels.

Preparation of a Biological Assessment or further consultation with us under Section 7 of the Endangered Species Act is not required at this time. Should project plans change, or additional information on listed or proposed species becomes available, this determination may be reconsidered. Thank you for your cooperation, and please contact Ms. Susi von Oettingen at (603) 223-2541, extension 22, if you need any further assistance.

Sincerely yours,

Thomas R. Chapman  
Supervisor  
New England Field Office

cc: Mark Ferguson, VTDFW  
Mike Marchand, NHFGD  
Reading file  
ES: SvonOettingen:4-19-12:603-223-2541

**Subject:** RE: USFWS Comments re Gilman Hydro impact on Dwarf Wedgemussel for LIHI Certification  
**From:** "Ferguson, Mark" <mark.ferguson@state.vt.us>  
**Date:** 4/20/2012 4:29 PM  
**To:** 'Stephen Hickey' <sjh@essexhydro.com>

Steve,

I concur with the U.S. Fish & Wildlife Service's assessment.

Mark Ferguson  
Zoologist  
Natural Heritage  
Vermont Department of Fish & Wildlife  
(802)654-8995

-----Original Message-----

From: Stephen Hickey [<mailto:sjh@essexhydro.com>]  
Sent: Friday, April 20, 2012 2:27 PM  
To: Ferguson, Mark  
Subject: USFWS Comments re Gilman Hydro impact on Dwarf Wedgemussel for LIHI Certification

Mark,

I received the attached review from USFWS via fax today indicating that "no documented adverse effects to dwarf wedgemussels have occurred from the current operation of the hydroelectric dam" and "that that the proposed certification is not likely to adversely affect dwarf wedgemussels." Please indicate if ANR is in agreement with the assessment provided by USFWS.

Thank you,  
Steve

Stephen Hickey  
Hydro Management Group, LLC  
as authorized agent for Ampersand Gilman Hydro  
55 Union Street, 4th Floor  
Boston, MA 02108  
tel: 617-367-0032  
fax: 617-367-3796

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  
MAR 12 2012

|               |         |
|---------------|---------|
| DHR Use Only  |         |
| R&C #         | 3641    |
| Log In Date   | 3/12/12 |
| Response Date | 4/3/12  |
| Sent Date     | 4/3/12  |

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

- This Project is funded by the American Recovery and Reinvestment Act of 2009  
 This is a new submittal       This is additional information relating to DHR Review #:

### GENERAL PROJECT INFORMATION

Project Title      Gilman Hydroelectric Project      *Low Impact Cert.*  
Project Location      35 Riverside Avenue, Gilman VT      *Dalton, NH*  
Tax Map & Lot #      Map: 403; Lot: 34  
NH State Plane - Feet Geographic Coordinates:      Easting 970867      Northing 969153      WGS84 datum  
(see RPR Manual and R&C FAQ's for help accessing this data)  
Lead Federal Agency      Federal Energy Regulatory Commission  
(Agency providing funds, licenses, or permits)  
Permit or Job Reference #      FERC License No. 2392  
State Agency and Contact (if applicable)  
Permit or Job Reference #

### APPLICANT INFORMATION

Applicant Name      Ampersand Gilman Hydro, LP  
Street Address      717 Atlantic Avenue, Suite 1A      Phone Number 416-643-6615  
City      Boston      State      MA      Zip      02111      Email      sjh@essexhydro.com

### CONTACT PERSON TO RECEIVE RESPONSE

Name/Company      Hydro Management Group LLC  
Mailing Address      55 Union Street, 4<sup>th</sup> Floor      Phone Number 617-367-0032  
City      Boston      State      MA      Zip      02108      Email      sjh@essexhydro.com

Please refer to the Request for Project Review manual for direction on completing this form. Submit one copy of this project review form for each project for which review is requested. *Thank You* 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, the Division of Historical Resources (DHR) may require additional information to complete our review. All items and supporting documentation submitted with a review request, including photographs and publications, must 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, please visit our website at: [www.nh.gov/nhdhr/review](http://www.nh.gov/nhdhr/review) or contact the R&C Specialist at 603.271.3558.

PROJECT BOUNDARIES AND DESCRIPTION

PROJECTS CANNOT BE PROCESSED WITHOUT THIS INFORMATION

REQUIRED

- Attach the relevant portion of a 7.5' USGS Map (photocopied or computer-generated) *indicating the defined project boundary.*
- Attach a detailed written description of the proposed project. Include: (1) a narrative description of the proposed project; (2) site plan; (3) photos and description of the proposed work if the project involves rehabilitation, demolition, additions, or alterations to existing buildings or structures; and (4) a photocopy of the relevant portion of a soils map (if accessible) for ground-disturbing projects.

Architecture

Are there any buildings or structures within the project area?  Yes  No

If yes, submit all of the following information:

Approximate age(s): Powerhouse and dam constructed in 1965

- Photographs of *each* building located within the project area along with a photo key. Include streetscape images if applicable. (Digital photographs are accepted. All photographs must be clear, crisp and focused)
- DHR file review conducted on \_\_\_\_\_ Provide file review results in project narrative.

Please note that as part of the review process, the DHR may request an architectural survey or other additional information.

Archaeology

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

If yes, submit all of the following information:

- Project specific map and/or preliminary site plan that fully describes the project boundaries and areas of proposed excavation.
- Description of current and previous land use and disturbances.
- Any available information concerning known or suspected archaeological resources within the project area.

Please note that as part of the review process, the DHR may request an archaeological survey or other additional information.

DHR COMMENT

*This Space for Division of Historical Resources Use Only*

- No Potential to cause Effects  Additional information is needed in order to complete our review
- No Adverse Effect  No Historic Properties Affected  Adverse Effect

Comments: *However, the Dam may need to be evaluated for future undertakings since at when it reaches 50 yrs*

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: *Michael Bosworth DHR*

Date: *4-3-12*

**State of Vermont**  
**Division for Historic Preservation**  
One National Life Drive, Floor 2  
Montpelier, VT 05620-1201  
[www.HistoricVermont.org](http://www.HistoricVermont.org)

[phone] 802-828-3211  
[Division fax] 802-828-3206

*Agency of Commerce and  
Community Development*

April 3, 2013

Stephen J. Hickey  
Ampersand Gilman Hydro, LLC  
c/o Hydro Management Group, LLC  
55 Union Street, 4<sup>th</sup> Floor  
Boston, MA 02108

**Re: Gilman Hydroelectric Facility, Lunenburg, VT**  
**FERC #2392**  
**Massachusetts DOER**  
**Low Impact Hydro Institute**

Dear Mr. Hickey:

Thank you for your letter of March 14, 2013, regarding the Statement of Qualification Application that has been submitted by Hydro Management Group, LLC to the Massachusetts DOER. The following comments are addressed to both the Massachusetts DOER and the Low Impact Hydro Institute.

Starting in the mid-1980s, our office has notified the owners of the Gilman Hydroelectric Facility that the project area may contain cultural and historic resources, including buildings, structures and archeological sites:

- Letter dated April 5, 1985 from our office to Kleinschmidt and Dutting stating that the mill and associated hydro facilities may be eligible for the National Register.
- Statement in the December 1988 FERC application that Georgia-Pacific Co. will continue to consult with our office on the eligibility of Gilman Village and the paper mill facilities for nomination to the National Register.
- Memo dated June 22, 1995, from our office to FERC stating that the project is not in compliance with Section 106, lacks a Programmatic Agreement, a Cultural Resources Management Plan, etc.
- In 1997, as part of an Act 250 permit review for work on the paper mill, the Vermont Advisory Council on Historic Preservation determined that the mill complex was eligible for the State Register of Historic Places.



At this time, we are not aware of efforts on the part of the applicant to identify cultural and historic resources associated with the Gilman Hydroelectric Facility. There is no Historic Properties Management Plan and no Programmatic Agreement to guide the review of projects at the facility pursuant to Section 106 of the National Historic Preservation Act. If these documents are in the process of being prepared, we look forward to consulting with you and reviewing preliminary drafts.

Without these documents in place, however, it is our opinion that the Gilman Hydroelectric Facility has not met the standard for the identification of cultural and historic resources and does not have a process in place to evaluate future projects and assess potential effects on historic resources. We recommend that such evaluations be completed prior to issuance of the LIHI Certification and/or the Massachusetts DOER Statement of Qualification.

If you have any questions or need clarification regarding any of the above, please do not hesitate to contact Devin Colman, Historic Preservation Review Coordinator, at 802-828-3043 or [devin.colman@state.vt.us](mailto:devin.colman@state.vt.us). Mr. Colman reviewed this project and prepared this letter. I concur with the findings and conclusions described above.

Sincerely,  
VERMONT DIVISION FOR HISTORIC PRESERVATION



Judith Ehrlich  
Director of Operations

Cc: Michael Judge, Massachusetts DOER  
Howard Bernstein, Massachusetts DOER  
Low Impact Hydro Institute

## Verville, Sarah

---

**From:** Stephen Hickey <sjh@essexhydro.com>  
**Sent:** Thursday, April 04, 2013 3:01 PM  
**To:** 'Mike Sale'  
**Cc:** Verville, Sarah  
**Subject:** Re: Gilman Hydroelectric Project Comments  
**Attachments:** DHP Comment Letter-2.pdf

Sarah and Mike,

Earlier today I left both of you a voice mail concerning the comments received via email yesterday from the State of Vermont Division for Historic Preservation ("VT DHP"), opposing the LIHI certification of the Gilman Hydroelectric facility. Ampersand Gilman Hydro, LP is firmly convinced that VT DHP's comments are inapplicable for the following three reasons:

- 1) Ampersand Gilman Hydro LP, the entity which owns and operates the Gilman hydroelectric facility does not own or have any control over the Gilman Village paper mill ( the "mill") which VT DHP list as eligible for the State register of historic places. Ownership of the mill was legally separated from the hydroelectric facility when the hydroelectric facility was purchased by Ampersand Gilman Hydro LP in December 2008.
- 2) The mill VT DHP list as eligible for the State Register of Historic Places is set back from the banks of the Connecticut River by at least 30 feet and therefore Ampersand Gilman Hydro LP is unaware of any way in which their operation of the hydroelectric project could impact the preservation of the mill building.
- 3) VT DHP specifically states that the mill building in question is *eligible* for the State Register of Historic Places. VT DHP has never requested that the mill be listed on the State Register of Historic Places and no formal request from VT DHP has been sent to the Federal Energy Regulatory Commission to Order any previous or current owner of the hydroelectric project to develop and implement a Historic Properties Management Plan and/or Programmatic Agreement.

For the aforementioned reasons, Ampersand Gilman Hydro would request that LIHI proceed with its review of the project's application for low impact certification. VT DHP has incorrectly concluded that Ampersand Gilman Hydro LP owns the mill in question. In the event VT DHP pursues an effort to list the mill in the State Register of Historic Places, VT DHP should contact the proper owners of the mill. Should the mill ever be listed in the State Register of Historic Places, Ampersand Gilman Hydro will commit to work with VT DHP on a best efforts basis to take the necessary steps to ensure the preservation of the mill building and any other structures listed on the State Register of Historic Places. Ampersand Gilman Hydro, LP would be open to such a commitment being included as a condition in its LIHI certification.

Thank you and please contact me with any questions.

Sincerely,  
Stephen Hickey  
Hydro Management Group LLC  
as agent for Ampersand Gilman Hydro, LP  
55 Union Street, 4th Floor  
Boston, MA 02108  
tel: 617-367-0032  
fax: 617-367-3796

On 4/3/2013 11:02 AM, Colman, Devin wrote:

Dear Mr. Hickey:

Please find attached a scanned PDF of the Division's comment letter regarding the Gilman Hydroelectric Project. The original hard copy will be maintained in our project files.

Sincerely,

Devin Colman  
Historic Preservation Review Coordinator  
Vermont Division for Historic Preservation  
One National Life Drive, Floor 6  
Montpelier, VT 05620-0501

(P) 802-828-3043

(F) 802-828-3206

[www.historicvermont.org](http://www.historicvermont.org)

**Looking for ways to improve the energy efficiency of your older home? [Click here](#) for weatherization tips.**

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For more information please visit <http://www.symanteccloud.com>

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**Subject:** Request for Comment re Recreational Access at the Gilman Hydroelectric Dam\_  
Dalton, NH

**From:** Stephen Hickey <sjh@essexhydro.com>

**Date:** 11/16/2012 5:10 PM

**To:** nhparks@dred.state.nh.us

Dear New Hampshire Division of Parks and Recreation,

Hydro Management Group, LLC as the authorized agent of Ampersand Gilman Hydro, owner and operator of the Gilman hydroelectric project (the "Project") located on the Connecticut River in Dalton, NH is pleased to inform you that it is in the process of submitting an application to the Low Impact Hydropower Institute ( <http://www.lowimpacthydro.org/> ) for the low impact certification of the Project. Condition G of the Project's application for low impact certification requires to request comments from the relevant state agency that the facility provides access to the water without fee or charge, and accommodates recreational activities on the public's river within a safe distance of the project works. As is highlighted in the Facility's FERC License which is attached for your reference, Ampersand Gilman Hydro improved the portage around the project and the launch site located upstream of the dam at the confluence of the Connecticut and St. Johns Rivers. Ampersand Gilman Hydro needs confirmation from you that your agency has no concerns about recreational access at the site and that the project permits recreational access free of charge within a safe distance of the project works.

Thank you in advance for responding to this inquiry and please contact me with any questions or concerns.

Stephen Hickey  
Hydro Management Group, LLC  
as authorized agent for Powerhouse Systems, Inc.  
55 Union Street, 4th Floor  
Boston, MA 02108  
tel: 617-367-0032  
fax: 617-367-3796

— 19940413\_Gilman Hydro FERC LICENSE.txt —

UNITED STATES OF AMERICA 67 FERC 62,038  
FEDERAL ENERGY REGULATORY COMMISSION

Simpson Paper (Vermont) Company

Project No. 2392-004  
New Hampshire and Vermont

ORDER ISSUING NEW LICENSE  
(Major Project)  
Issued April 13, 1994

INTRODUCTION

Simpson Paper (Vermont) Company (SPC) filed a license

**Subject:** RE: Gilman Hydro, Connecticut River - Gilman, VT, Dalton, NH - Request for LIHI review

**From:** "Oleary, Ed" <Ed.Oleary@state.vt.us>

**Date:** 3/8/2012 12:57 PM

**To:** 'Stephen Hickey' <sjh@essexhydro.com>

Stephen:

I have reviewed the material you provided and I am satisfied that "the project permits public access for recreational purposes within a safe distance of the project works, and all such access is provided free of charge.

Ed O'Leary

-----Original Message-----

From: Stephen Hickey [<mailto:sjh@essexhydro.com>]

Sent: Wednesday, March 07, 2012 3:30 PM

To: Oleary, Ed

Subject: Gilman Hydro, Connecticut River - Gilman, VT, Dalton, NH - Request for LIHI review

Dear Mr. O'Leary,

Hydro Management Group, LLC as the authorized agent for Ampersand Gilman Hydro, LP owner and operator of the Gilman hydroelectric project (FERC Project No. 2392) is hereby notifying you of its intent to submit the Gilman hydroelectric project located on the Connecticut River in Gilman, Essex County, Vermont and Dalton, Coos County, New Hampshire to the Low Impact Hydropower Institute (<http://www.lowimpacthydro.org/>) for certification as a low impact facility. As a component of its application, Worcester Hydro Co. Inc. is required to seek comment from the relevant hydroelectric agencies regarding the project's compliance with the terms and conditions of its Exemption from Licensing (5MW or less) dated April 13, 1994 and attached for your reference. Please note that the project permits public access for recreational purposes within a safe distance of the project works. All such access is provided free of charge. The project does not occupy any federal lands. Hydro Management Group LLC on behalf of Ampersand Gilman Hydro, LP would appreciate to hear from you regarding any comments you may or may not have regarding the projects operation and its proposed application to LIHI for certification.

Thank you and please feel free to contact me if you have any questions or need any additional information.

Stephen Hickey  
Hydro Management Group, LLC  
as authorized agent for Ampersand Gilman Hydro, LP  
55 Union Street, 4th Floor  
Boston, MA 02108  
tel: 617-367-0032  
fax: 617-367-3796