

**APPLICATION REVIEW FOR  
LOW IMPACT HYDROPOWER INSTITUTE  
CERTIFICATION  
of the  
SILVER LAKE PROJECT NO. 11478**



**August 22, 2012**

**Application Reviewer: Patricia McIlvaine**

**WRIGHT-PIERCE**   
Engineering a Better Environment

**APPLICATION REVIEW FOR LOW IMPACT HYDROPOWER  
INSTITUTE CERTIFICATION**

**SILVER LAKE PROJECT - FERC PROJECT NO. 11478**

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# REVIEW OF APPLICATION FOR CERTIFICATION BY THE LOW IMPACT HYDROPOWER INSTITUTE OF THE SILVER LAKE HYDROELECTRIC PROJECT

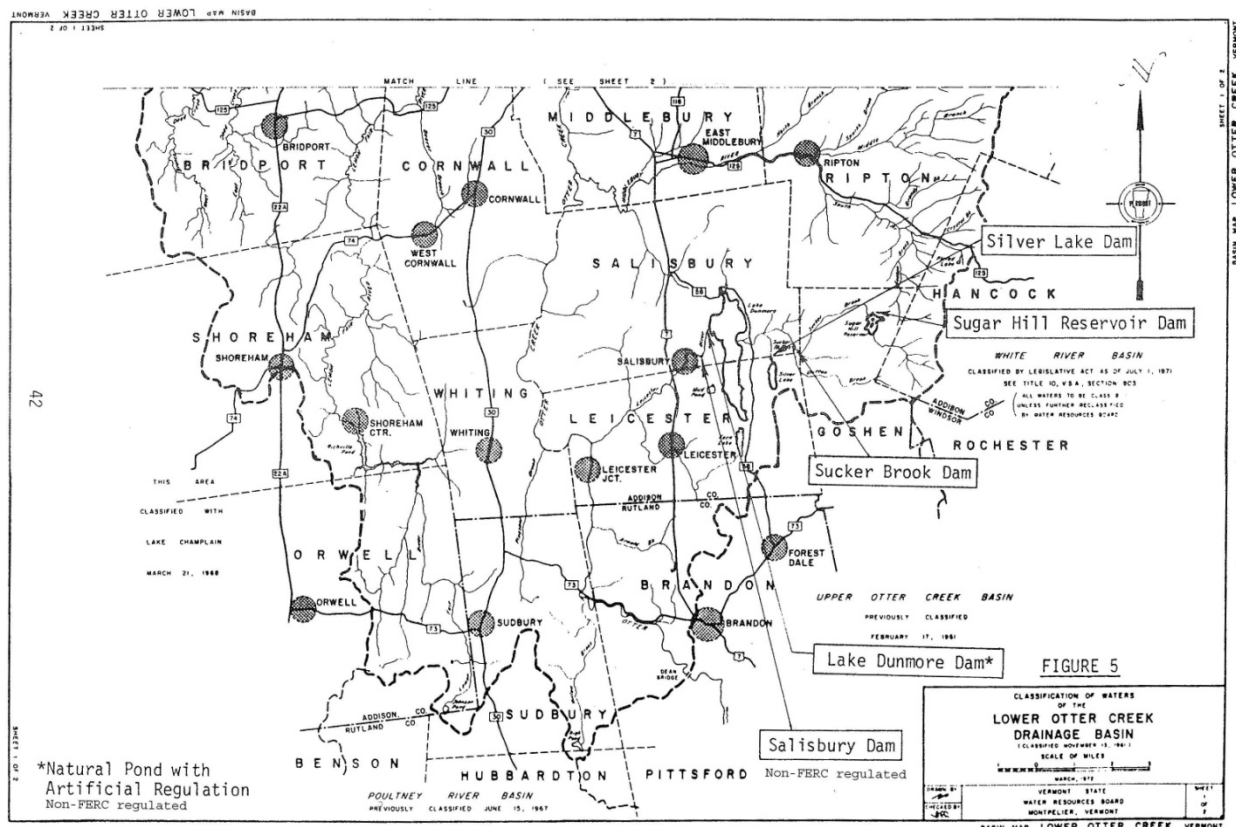
Prepared by:  
Patricia McIlvaine  
August 22, 2012

## I. INTRODUCTION AND OVERVIEW

This report reviews the application submitted by Central Vermont Public Service Corporation (Applicant or CVPS) to the Low Impact Hydropower Institute (LIHI) for Certification of the Silver Lake Hydroelectric Project P- 11478 (Silver Lake Project or Project), located on Sucker Brook in northeastern Vermont.

## II. PROJECT'S GEOGRAPHIC LOCATION

The following map illustrates the Project's location within the Lower Otter Creek drainage basin.



The Project consists of the Sugar Hill storage reservoir and the Goshen Dam on Sucker Brook in the town of Goshen (Addison County); a downstream diversion dam (Sucker Brook diversion dam) that shunts water to Silver Lake; the dam and penstock headworks on Silver Lake in the town of Leicester; and the surge tank, pipe, powerhouse and appurtenant structures located adjacent to Vermont Route 53 in the town of Salisbury. Much of the Project is surrounded by the Green Mountain National Forest.



**Figure 2 – USGS Map of Silver Lake Project**

Discharge from the project is back to Sucker Brook which flows into Lake Dunmore. Lake Dunmore's outlet is to the Leicester River which flows to Otter Creek. The CVPS's Salisbury Project is located on the Leicester River approximately one mile downstream of Lake Dunmore's outlet. The Silver Lake Project's drainage area is 10.2 square miles. Illustrations of the hydrologic connections of the features of the Silver Lake Project follow on the next two pages..

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

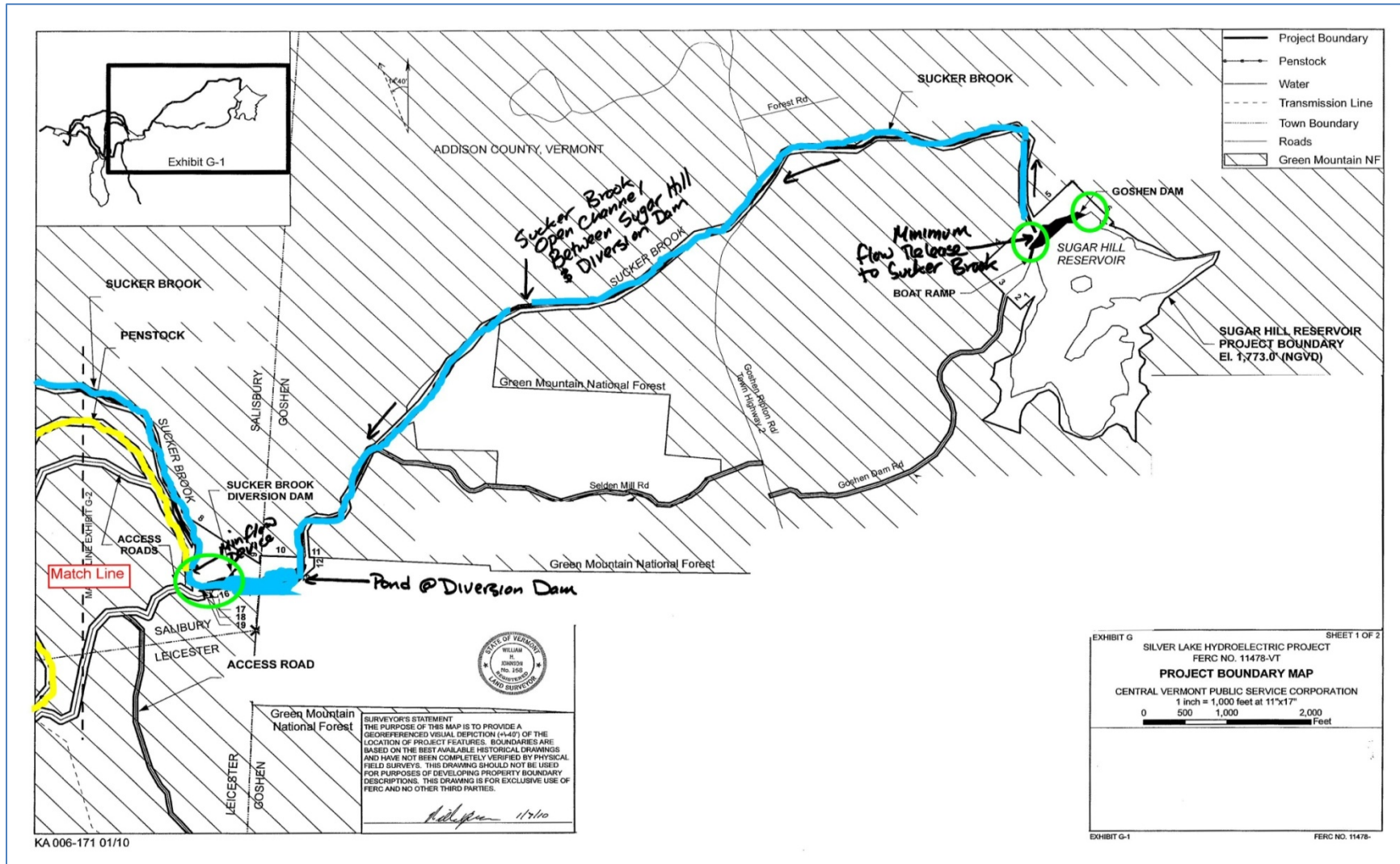
The Silver Lake Project was constructed in 1916-1917, with Goshen Dam added in 1922-1923 to create the Sugar Hill reservoir. The 74-acre Sugar Hill reservoir is impounded by Goshen dam with a 60-feet high earthen dam having concrete spillways on either side. The reservoir normal water surface elevation is 1,763 feet USGS. The 14-foot wide intake structure is equipped with wooden trashracks and a concrete gate. Flow is released from Sugar Hill reservoir through a 232-foot long, 4-foot

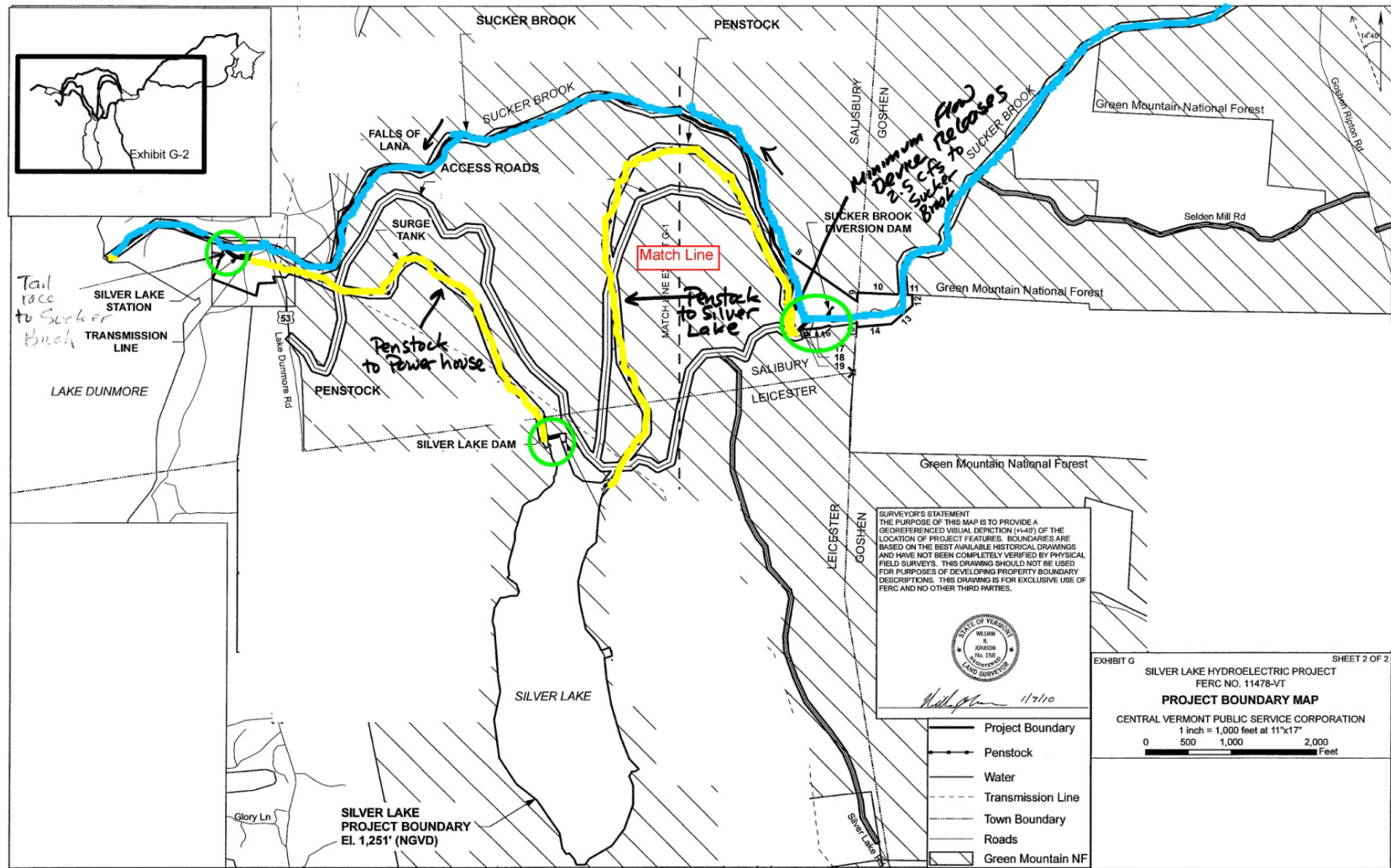




## Figures 3 and 4 – Hydraulic Flow through the Silver Lake Project

(On both, blue indicates stream flows; yellow indicates penstock flows.)





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EXHIBIT G-2

FERC NO. 11478-

square conduit outlet structure equipped with five steel gate valves, which discharge into Sucker Brook as illustrated on Figure 3.

As also shown on Figure 3, the Sucker Brook Diversion Dam is located about 2.6 miles downstream of Goshen dam, and impounds a 0.25 acre reservoir having a normal surface elevation about 475 feet lower than Sugar Hill reservoir. . This dam consists of a 38-foot high earthen section and a concrete spillway section. The dam impounds water only during high flow conditions. This diversion dam's intake structure has a timber headgate and trashracks. This reservoir discharges into a 36-inch to 42-inch 7,000 foot long penstock consisting of a corrugated and galvanized steel section (4,400 feet), a wood-stave section (1,000 feet), steel section (700 feet), and a concrete section (910 feet). The penstock discharges into a concrete raceway that extends 380 feet to Silver Lake. Silver Lake is a natural lake, but its surface elevation was raised by the presence of its dam.



The dam at Silver Lake consists of a 30- foot high buttressed concrete wall with an earth backfill dam that includes a concrete spillway section and an 18.5-foot wide intake structure. The dam impounds the 110-acre Silver Lake, which has a normal surface elevation of 1,250 feet USGS. Figure 4 illustrates the Project features from Silver Lake to the powerhouse, including the bypass section of Sucker Brook.

The intake structure at Silver Lake is equipped with a slide gate and steel trashracks. Water is carried to the surge tank via a 5,200-foot long fiberglass penstock, which lies on the ground surface with earth-fill covering much of the pipe to provide lateral stability. A 90-foot high, 15-foot diameter surge tank stands on the south side of the penstock.



A 2,400-foot long welded pipe penstock runs primarily aboveground from the surge tank to the powerhouse, with an approximate 300-foot section that runs underground under Route 53. The powerhouse contains one 2.2-MW turbine generating unit. The powerhouse discharges into a 450-foot long tailrace that leads back to Sucker Brook, approximately 450 yards upstream of where the brook enters Lake Dunmore. As illustrated on Figure 4, an 11,700- foot long reach of Sucker Brook is bypassed from the Sucker Brook diversion dam to the powerhouse tailrace.



Both Sugar Hill Reservoir and Silver Lake are drawn down in the winter to capture spring runoff. Use of flows follow a weekly demand cycle, and typically the units do not operate on weekends. Releases from Sugar Hill Reservoir are primarily for Sucker Brook flow augmentation to divert water to Silver Lake. Prior to issuance of the current FERC license and WQC, no flows were maintained in Sucker Brook and the natural channel from Silver Lake.

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

On May 9, 1994, CVPS filed an application for an original license to continue operation of its unlicensed 2.2-megawatt (MW) Silver Lake Project to the Federal Energy Regulatory Commission (FERC). Timely motions to intervene were filed by the Vermont Agency of Natural Resources (VANR), the Vermont Natural Resources Council (VNRC) and the U.S. Department of Interior (Fish and Wildlife Service) (USFWS) and the U.S. Department of Agriculture (Forest Service) (USFS). A draft Environmental Assessment (EA) was issued on August 29, 1996. The same agencies plus CVPS commented on the draft EA. The FERC license states that comments received from interested agencies and CVPS were fully considered in determining conditions associated with license issuance. The license was not issued for a number of years, due to challenges to the water quality certification (WQC) for the Project. The final WQC was not filed with FERC until February 5, 2009. The FERC license was finally issued on February 26, 2009 for a 30 year term.

CVPS filed an application on May 6, 1994 for water quality certification (WQC) from the VANR for the Silver Lake Project. The application was withdrawn and re-filed in 1995 and 1996. In February 1997 an initial draft WQC was issued, which was challenged by CVPS. In 1998 VANR issued a revised draft WQC, for which CVPS again requested revised conditions. Over the period of 1997 through 2007, CVPS operated under an annual WQC. The WQC was ultimately issued on December 5, 2008.

According to CVPS's application for LIHI certification, no compliance issues or regulatory proceedings or license amendments have been issued. A review of FERC's eLibrary from 2009 through March 2012 and other FERC documents appears to indicate that no deviations have been reported, but notes that extensions were filed twice for development of the Operation Plan, which was ultimately approved on March 15, 2011.

All conditions of the WQC were adopted into the FERC license. The requirements related to criteria important to LIHI certification includes requirements for: seasonal reservoir operating levels for Sugar Hill Reservoir and Silver Lake; year-round minimum flow releases for Sucker Brook downstream of Goshen dam and the bypassed reach of Sucker Brook downstream of the Sucker Brook diversion dam; a smelt spawning protection operating protocol; maintenance of dissolved oxygen standards downstream of Goshen dam; maintenance of a fish exclusion device downstream of the Silver Lake tailrace; replacement of the Silver Lake trashrack; public access to the project area; final design plans for the proposed recreation facilities; erosion control measures, as necessary; and a one-time contribution to the Lake Champlain and Tributaries Restoration Fund. The certification also requires plans for: ramping flows downstream of Goshen dam and the Silver Lake powerhouse tailrace; minimum flows downstream of the Sucker



Brook diversion dam; Sugar Hill Reservoir operation, impoundment and flow monitoring, and debris disposal. Article 401 requires the licensee to file the plans required by the certification conditions for Commission approval, and to notify the Commission of actions taken, where appropriate.

To date, all required plans and reports have received FERC and VANR approval.

Review of FERC's eLibrary and specific questioning of the applicant did not identify any reported license deviations since license issuance in 2009 or license compliance delays other than that described above

Resource agency comments obtained during telephone contact and emails received were generally supportive of the compliance activities at this site. Telephone communications are summarized in Appendix A, followed by copies of written communications received from the resource agencies.

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

The deadline for submission of comments on the certification application was April 6, 2012. No public comments letters were received.

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

**Criterion A - Flows** - The facility appears to be operated in compliance with the established minimum flows from Goshen Dam and Sucker Brook Diversion Dam, reservoir fluctuation and re-filling rates, smelt spawning operating protocols and ramping rates for Goshen Dam and at the tailrace requirements. As discussed under this Criterion, all improvements have been installed. No specific areas of concern were identified by the resource agencies contacted.

**Criterion B - Water Quality** - The facility appears to be operated in compliance with all water quality related conditions of the FERC license and Water Quality Certificate. Re-aeration baffles were installed at Goshen Dam's outlet to ensure appropriate dissolved oxygen levels during drought conditions. No specific areas of concern were identified by the resource agencies contacted.

**Criterion C - Fish Passage and Protection** – No fishway prescription or reservation of authority was filed under section 18 of the Federal Power Act for the Silver Lake Project. There are no current nor historical records of anadromous or catadromous species in the area. Fish passage for riverine species is not required. Traskracks having 1.5 in bar spacing are installed at the Silver Lake intake and a fish exclusion screen is installed at the powerhouse tailrace. The approved ramping plan for the powerhouse is being implemented to help ensure safe egress to fish from the tailrace after unit shutdown.

**Criterion D - Watershed Protection** - There are no requirements for a buffer zone, shoreline protection fund or shoreline management plan for the Facility. Thus, as all requirements, of which there are none, are nonetheless being met, this Facility passes for this criterion. No additional term for certification is appropriate.

**Criterion E - Threatened and Endangered Species Protection** – The Bald Eagle, a state listed endangered species and the Indiana Bat, a federally listed endangered species are likely found at the Project. Draft Recovery Plans exist for both species; however both specify measures remote from the Project area. Agency review has indicated that project operations are not expected to impact these species if they are found at the site.

**Criterion F - Cultural Resources** - The Project is subject to the provisions of "Programmatic Agreement Among FERC, the Advisory Council on Historic Preservation and the Vermont State Historic Preservation Officer (SHPO)." Annual reports have been submitted as required by the single Cultural Resources Management Plan to both FERC and the Vermont State Historic Preservation Office. There are no issues with adherence to cultural resources (historic or archaeological) protection requirements at the Facility.

**Criterion G - Recreation** - The Project was found to be in compliance with all recreational requirements.

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

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

Based on my review of information submitted by the applicant, the additional documentation noted herein, the public comments submitted in writing or through my consultations with various resource agencies and other entities, I believe that the Project is in compliance with the LIHI criteria, as discussed in detail later in this report.

Therefore, I recommend that the Silver Lake Project be certified to be in compliance with LIHI's criteria with a certification term of five years.

## **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 appears to be operated in compliance with the required established minimum flows from Goshen Dam and Sucker Brook Diversion Dam, reservoir fluctuation and re-filling rates, smelt spawning operating protocols and ramping rates for Goshen Dam and at the tailrace requirements. The Operations Plan, which included all of the various plans detailed in the License and WQC, was approved by VANR and FERC on March 15, 2011. The required penstock tap, sump and channel at the Sucker Brook Diversion Dam to provide the required minimum flows were installed in the fall of 2011. Consultation with VANR has confirmed that no non-compliance concerns have been identified at the Project.

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

## **B. WATER QUALITY**

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

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

***Criterion:***

- 1) Is the Facility either:**

- a) In compliance with all conditions issued pursuant to a Clean Water Act Section 401 water quality certification issued for the facility after December 31, 1986? Or**

**Yes.** The operation of Silver Lake is in compliance with the requirements of the 401 Water Quality Certificate which was issued on June 16, 1994, based on review of information provided and consultation with Mr. Shayne Jaquith of the Water Quality Division of VANR.

YES, go to B2

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

**NO.** The 2012 Clean Water Act Section 303(d) List of Impaired Waters issued by the Vermont Agency of Natural Resources, Division of Water Quality has not identified the waters of the Project, nor waters directly downstream, including Dunmore Lake and Leicester River from this Lake to the Salisbury Dam, as "impaired". However, all Project waters have been listed as having water quality or habitat that is impacted by flow regulation, such that these waters are "not in full support of aquatic life". The stream below Silver Lake and the 2.5 miles of Sucker Brook below Goshen Dam are listed as in "non-support for all uses" due to flow regulation.

***The Project Passes Criterion B - Water Quality - Go to C***

**C. FISH PASSAGE AND PROTECTION**

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

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

***Criterion:***

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

N/A - No fishway prescription or reservation of authority was filed under section 18 of the Federal Power Act for the Silver Lake Project.

***GO TO B2 for catadromous species***

- 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.** There are no current or historical records of such species in the area. Downstream barriers prevent their presence in the area as confirmed by Mr. Rod Wentworth of the VT. Department of Fish & Wildlife.. **Go to C3**

- 3) **If, since December 31, 1986:**

- a) **Resource Agencies have had the opportunity to issue, and considered issuing, a Mandatory Fish Passage Prescription for upstream and/or downstream passage of anadromous or catadromous fish (including delayed installation as described in C2a above), and**
- b) **The Resource Agencies declined to issue a Mandatory Fish Passage Prescription,**
- c) **Was a reason for the Resource Agencies' declining to issue a Mandatory Fish Passage Prescription one of the following: (1) the technological infeasibility of passage, (2) the absence of habitat upstream of the Facility due at least in part to inundation by the Facility impoundment, or (3) the anadromous or catadromous fish are no longer present in the Facility area and/or downstream reach due in whole or part to the presence of the Facility?**

**NO.** The USFWS has not issued a Section 18 prescription nor reservation of authority as migratory species are not found in the Project waters. **Go to C5**

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

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

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

**YES.** In accordance with Article 401 of the FERC License and Condition J of the WQC, a fish exclusion screen is maintained at the lower end of the station tailrace to prevent fish from ascending the tailrace and possibly becoming stranded. The Silver Lake intake has a 1.5 inch bar clear spacing trashrack. Also, the approved ramping plan for the powerhouse is being implemented to help ensure safe egress to fish from the tailrace after unit shutdown.

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



## **D. WATERSHED PROTECTION**

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**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 D.2**

**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.** A watershed enhancement fund was created to protect the entire Lake Champlain Basin, but not the sub-watershed in which the Project is located. This fund does not provide equivalent land protection to that of a 200 foot buffer zone.

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

**NO, Go to D4**

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

**NOT APPLICABLE.** No Shoreland Management Plan or equivalent plan was required for the Silver Lake Project.

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

**E. THREATENED AND ENDANGERED SPECIES PROTECTION**

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

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

***Criterion:***

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

**YES.** It is noted that Bald Eagle, a state endangered species under the Vermont Endangered Species Law, is a known occasional transient in the Silver Lake Project. Suitable breeding habitat does exist at the Project and Lake Dunmore, but no breeding pairs have been observed. Eastern cougar may also be present in the area on a transitory basis. The Indiana Bat is a federally endangered species and is likely found in the area. It has been documented within 10 miles of the Project. ***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?**

**YES.**

Vermont Fish and Wildlife has drafted an October 2010 recovery plan for the bald eagle. The plan includes a bald eagle recovery initiative in the Lake Champlain region, to aid in the establishment of breeding pairs along the Lake, and to set the stage for necessary habitat protection for bald eagles on Lake Champlain. Efforts under this Recovery Plan are undertaken remote from the Silver Lake Project and CVPS is not involved with this restoration program as the bald eagle is only a transient in the vicinity of the Silver Lake Project.

USF&WS has drafted a Recovery Plan in 2007 for the Indiana Bat. Vegetation clearing restrictions under Article 405 of the FERC license are in compliance with general habitat requirements of this Recovery Plan. ***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?**

**YES.** In a letter dated December 17, 2008, the USF&WS concurred with the Biological Assessment that determined that the operations of the Silver Lake Project would not likely adversely affect the Indiana Bat. . This opinion was provided in accordance with Section 7 of the Endangered Species Act. As only a transient species to date, the Project is not expected to impact the Bald Eagle.

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

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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.** License Article 410 requires implementation of the "Programmatic Agreement Among FERC, the Advisory Council on Historic Preservation and the Vermont State Historic Preservation Officer (SHPO)." This Agreement covers multiple CVPS hydropower Projects on the Passumpsic River and a single Cultural Resources Management Plan (CRMP) was developed (and approved in 2000) for all four Facilities requiring a five-year monitoring and reporting program. The four projects' dams, intake structures, generating units and powerhouses, including Silver Lake, are considered to represent the historic period (1882-1941) of hydroelectric power development in Vermont and are considered eligible for inclusion in the National Register of Historic Places. Annual reports associated with surveys of the project shoreline are submitted to both the FERC and the Vermont SHPO. Currently there do not appear to be any known archaeological sites threatened by Project operations. Documentation provided by the applicant has demonstrated compliance with cultural resources protection requirements.

Likewise communications with the VT SHPO has confirmed their satisfaction with the Project's compliance history, at least in terms of archaeological resources.

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

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**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.** FERC license Article 413 required development and maintenance of a public picnic area and parking for four vehicles, as well as interpretative and public safety signage. A 2008 FERC inspection report, as noted in an email to CVPS dated May 9, 2012, found the sites well maintained. Evaluation of the use of the recreational facilities, which was to be assessed in 2009 but delayed until 2010, was assessed and a report submitted to FERC in September 2010 following modification to a draft of the report to incorporate VANR and Town of St. Johnsbury comments.

***Go to G3***

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

**YES.** A statement issued by the applicant indicates that such access is provided free of charge.

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

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

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

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

**Criterion:**

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

**NO.** No resource agency has recommended removal of any of the dams associated with the Project.

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

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**THE SILVER LAKE PROJECT MEETS  
THE LIHI CRITERIA FOR CERTIFICATION**



**APPENDIX A**

**INDEX OF PRIMARY CONTACT INFORMATION  
FOR LIHI CRITERIA**

<b>LIHI CRITERION</b>	<b>PRIMARY CONTACT INFORMATION</b>
<b>Flows</b>	Shayne Jaquith, VANR, DEC - Water Quality Division
<b>Water Quality</b>	Shayne Jaquith, VANR, DEC - Water Quality Division
<b>Fish Passage &amp; Protection</b>	Shayne Jaquith, VANR, DEC - Water Quality Division Rod Wentworth, VT Department of Fish & Wildlife
<b>Watershed Protection</b>	None required
<b>Threatened &amp; Endangered Species</b>	Shayne Jaquith, VANR, DEC
<b>Cultural Resources Protection</b>	Devin Colman, Vermont State Historic Preservation Office Scott Dillon, Vermont State Historic Preservation Office
<b>Recreation</b>	None required
<b>Facilities Recommended for Removal</b>	None required

## **RECORD OF CONTACTS**

**NOTE:** The information presented below was gathered from contacts by email and telephone. Copies of applicable emails follow this page.

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Date:	August 21, 2012; Telephone call
Contact Person:	Rod Wentworth, VT Department of Fish & Wildlife
Contact Information:	802-654-8949; rod.wentworth@state.vt.us
Area of Expertise:	Fisheries

In response to a follow-up call to emails sent in July, 2012, Mr. Wentworth stated he has no reason to believe that the Silver Lake Project has any compliance issues with the fish protection measures required of the Project. He confirmed that no anadromous nor catadromous species are found in the area due to downstream barriers, hence the lack of fish passage requirements. His office does not do any follow-up inspections at such Projects.

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Date:	July 26, 2012 Telephone Call
Contact Person:	Scott Dillon Vermont State Historic Preservation Office
Contact Information:	802-828-3048; Scott.dillon@state.vt.us
Area of Expertise:	Cultural Resources – Archaeological resources

Scott reported that whenever CVPS has had any structure modifications or excavations, that appropriate consultation has been made and that resolution of issues has always been to the SHPO's satisfaction. He described CVPS as a 'good steward' in terms of cultural resource protection. No issues regarding impacts to archaeological resources have been identified.

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Date:	April 16 & May 30 emails and May 31, 2012 telephone call
Contact Person:	Shayne Jaquith, VANR, Department of Environmental Conservation, Water Quality Division
Contact Information:	802-338-4853; Shayne.jaquith@state.vt.us
Area of Expertise:	Water Quality Certification

See attached email dated April 16 summarizing communications regarding compliance with conditions under the Water Quality Certifications issued for all of the CVPS the sites seeking LIHI certification. When contacted on May 31 regarding protected species, Shayne suggested I review the VT ANR Natural Resources Atlas for known presence of protected species in lieu of his office conducting such a review. (Note: Such a review was completed as part of the LIHI Application preparation.) Shayne Jaquith also stated that the VANR is appreciative of the LIHI process in that they are seeing projects undergoing improved compliance programs as a result of LIHI conditions required to obtain certification.

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Date:	Several attempts were made between July 26 through August 22, 2012
Contact Person:	Devin Colman
Contact Information:	Vermont State Historic Preservation Office 802-828-3043; Devin.colman@state.vt.us
Area of Expertise:	Cultural Resources - Historic Structures

No response was received from Mr. Colman regarding this site. However he did report that CVPS has been good to work with at the Passumpsic Sites.

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**Patricia B. McIlvaine**

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**From:** Jaquith, Shayne [Shayne.Jaquith@state.vt.us]  
**Sent:** Wednesday, May 30, 2012 10:26 AM  
**To:** 'Patricia B. McIlvaine'  
**Cc:** Wentworth, Rod  
**Subject:** RE: Review of LIHI Certification Candidate Projects

Pat,

I cannot confirm that the projects are in compliance. I am only able to confirm that we do not have any information to suggest that the projects are out of compliance. This is respect to all conditions of the water quality certifications.

**Please note that my phone number has changed to 802-338-4853**

Shayne Jaquith  
Streamflow Protection Program  
Department of Environmental Conservation  
Water Quality Division  
103 S. Main St, 10 North, 1st Floor  
Waterbury, VT 05671-0408  
802-338-4853  
shayne.jaquith@state.vt.us

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**From:** Patricia B. McIlvaine [mailto:Pat.McIlvaine@wright-pierce.com]  
**Sent:** Tuesday, May 22, 2012 2:21 PM  
**To:** Jaquith, Shayne  
**Subject:** FW: Review of LIHI Certification Candidate Projects

Good afternoon Ms. Shayne

I am the independent reviewer working for the Low Impact Hydropower Institute on the CVPS projects for which certification is being sought. I just wanted to confirm that in the various confirmation statements noted in your email below, whether you are addressing just those aspects of the water quality certification that directly deals with water quality (e.g. flow requirements, etc.) or if you are also confirming that the projects listed are in compliance with ALL of the conditions of the certifications, including those such as dealing with downstream fish passage, installation of recreational features , etc.

Thanks so much for your help on this.

Pat

**Pat McIlvaine | Project Manager**

**Wright-Pierce | Water, Wastewater & Infrastructure Engineers**

**Please note my new e-mail address:** [pat.mcillvaine@Wright-Pierce.com](mailto:pat.mcillvaine@Wright-Pierce.com)

[www.wright-pierce.com](http://www.wright-pierce.com)

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**From:** Maryalice Fischer [<mailto:MFischer@normandeau.com>]  
**Sent:** Friday, April 20, 2012 1:33 PM  
**To:** [gabriela@goldfarbconsulting.com](mailto:gabriela@goldfarbconsulting.com); [pbm@wright-pierce.com](mailto:pbm@wright-pierce.com)  
**Cc:** [fayer@lowimpacthydro.org](mailto:fayer@lowimpacthydro.org); John King  
**Subject:** FW: Review of LIHI Certification Candidate Projects

Hello Gabriela and Pat,

CVPS was successful with obtaining the information below from Vermont relative to compliance with their water quality certifications. As you know, the WQCs (included as part of the LIHI applications) are not limited strictly to issues of water quality itself, but also to other resource protection measures included as conditions within those certifications.

Please let me know if you have any questions.

Maryalice Fischer  
Normandeau Associates, Inc.  
917 Route 12  
Westmoreland NH 03467

603.757.4011 voice  
603.903.4702 mobile

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**From:** Jaquith, Shayne [<mailto:Shayne.Jaquith@state.vt.us>]  
**Sent:** Monday, April 16, 2012 10:09 AM  
**To:** Eliason, Beth  
**Subject:** RE: Review of LIHI Certification Candidate Projects

Beth,

In addition to the reviews I sent you on the 13<sup>th</sup>, you had requested a review of the Silver Lake project. I've conducted that review and my comments follow.

*Silver Lake*

The Silver Lake Hydroelectric Project was certified in 2008 by the Department of Environmental Conservation (the Department). Conformance with the conditions of the certification would assure that the project does not violate Vermont Water Quality Standards. At this time the Department has no information to suggest that the project is not operating in full conformance with the conditions of its water quality certification.

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

Take care,  
Shayne

**Please note that my phone number has changed to 802-338-4853**

Shayne Jaquith  
Streamflow Protection Program  
Department of Environmental Conservation  
Water Quality Division

5/31/2012



103 S. Main St, 10 North, 1st Floor  
Waterbury, VT 05671-0408  
802-338-4853  
[shayne.jaquith@state.vt.us](mailto:shayne.jaquith@state.vt.us)

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**From:** Jaquith, Shayne  
**Sent:** Friday, April 13, 2012 1:17 PM  
**To:** 'beliaso@cvps.com'  
**Subject:** Review of LIHI Certification Candidate Projects

Hi Beth,

BT asked me to review the LIHI candidate projects that you had submitted to him. I have completed review of most but not all of the projects you submitted and wanted to provide you with my comments on those projects. I will continue my review of the remaining projects and expect to have comments to you by the end of next week. My comments are provided below.

*Cavendish FERC Project No. 2489*

The Cavendish Hydroelectric Project was certified in 1993 by the Department of Environmental Conservation (the Department). Conformance with the conditions of the certification would assure that the project does not violate Vermont Water Quality Standards. At this time the Department has no information to suggest that the project is not operating in full conformance with the conditions of its water quality certification.

*Middlebury Lower FERC Project No. 2737*

The Middlebury Lower Hydroelectric Project was certified in 1999 by the Department of Environmental Conservation (the Department). Conformance with the conditions of the certification would assure that the project does not violate Vermont Water Quality Standards. At this time the Department has no information to suggest that the project is not operating in full conformance with the conditions of its water quality certification.

*Weybridge FERC Project No. 2731*

The Weybridge Hydroelectric Project was certified in 1993 by the Department of Environmental Conservation (the Department). Conformance with the conditions of the certification would assure that the project does not violate Vermont Water Quality Standards. At this time the Department has no information to suggest that the project is not operating in full conformance with the conditions of its water quality certification.

*Pierce Mills FERC Project No. 2396*

The Pierce Mills Hydroelectric Project was certified in 1994 by the Department of Environmental Conservation (the Department). Conformance with the conditions of the certification would assure that the project does not violate Vermont Water Quality Standards. At this time the Department has no information to suggest that the project is not operating in full conformance with the conditions of its water quality certification.

*Arnold Falls FERC Project No. 2399*

The Arnold Falls Hydroelectric Project was certified in 1994 by the Department of Environmental Conservation (the Department). Conformance with the conditions of the certification would assure that the project does not violate Vermont Water Quality Standards. At this time the Department has no information to suggest that the project is not operating in full conformance with the conditions of its water quality certification.

*Gage FERC Project No. 2397*

The Gage Hydroelectric Project was certified in 1994 by the Department of Environmental Conservation (the Department). Conformance with the conditions of the certification would assure that the project does not violate Vermont Water Quality Standards. At this time the Department has no information to suggest that the

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project is not operating in full conformance with the conditions of its water quality certification.

*Passumpsic FERC Project No. 2400*

The Passumpsic Hydroelectric Project was certified in 1994 by the Department of Environmental Conservation (the Department). Conformance with the conditions of the certification would assure that the project does not violate Vermont Water Quality Standards. At this time the Department has no information to suggest that the project is not operating in full conformance with the conditions of its water quality certification.

Take care,  
Shayne

**Please note that my phone number has changed to 802-338-4853**

Shayne Jaquith  
Streamflow Protection Program  
Department of Environmental Conservation  
Water Quality Division  
103 S. Main St, 10 North, 1st Floor  
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