

**CENTRAL VERMONT PUBLIC SERVICE CORPORATION
SILVER LAKE PROJECT (P-11478)**

**LOW IMPACT HYDROPOWER CERTIFICATION APPLICATION
ATTACHMENT D
DETAILED RESPONSES TO APPLICABLE LIHI QUESTIONS**

<u>Question A.1</u>	Flows – Flow Conditions
<u>Question B.1.a</u>	Water Quality – Water Quality Certification
<u>Question D.2</u>	Watershed Protection – Enhancement Fund
<u>Questions E.1-E.2</u>	Threatened and Endangered Species Protection
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A.1 – Flow Conditions

The Project is in compliance with flow conditions and reservoir elevations for fish and wildlife protection, mitigation and enhancement for reaches below all tailraces and all bypassed reaches. These requirements are included in the respective License Articles 401 through 404, and the Vermont water quality certification (WQC) Conditions C – H. Requirements are subject to being temporarily modified if required by operating emergencies and in consultation with Vermont Agency of Natural Resources (VANR) and with notification to FERC. Flows and reservoir elevations are monitored on an hourly basis.

CVPS submitted, and FERC approved an Operations Plan for the Project, on March 15, 2011. The plan provides measures to ensure the minimum flow and related flow and reservoir conditions summarized in the table below. Due to the recent FERC approval of the plan, some improvements remain in progress at this time. Power generation and reservoir elevations are monitored continuously. Minimum flows are maintained by adjusting generation output in response to headpond levels. There have been no reported flow deficiencies or compliance violations related to flow conditions.

Summary of Flow Requirements

Minimum Flow	Other Flow Conditions
<p>At Sugar Hill Reservoir:</p> <ul style="list-style-type: none"> ● Between May 1 – December 31: 2.5 cfs, or as needed to bring reservoir down to 1765.5 feet msl during high flows. Match inflow when reservoir is at maximum drawdown of 1757.5 feet. ● Between January 1 – April 30: 2.5 cfs, and limit drawdown to 1747.5 feet. <p>At Sucker Brook Diversion Dam: 2.5 cfs continuous.</p>	<p>At Silver Lake Development:</p> <ul style="list-style-type: none"> ● March 15 – May 31: stable or rising reservoir. ● June 1 – November 30: range of 1245.5 – 1247.5 feet. ● December 1 – May: 1239.5 feet maximum drawdown. <p>For smelt spawning:</p> <ul style="list-style-type: none"> ● Monitoring to commence on or before March 15. ● When annual smelt spawning begins in the spring, CVPS operates the Silver Lake turbine either in a reduced capacity or no generation at night to allow spawning rainbow smelt to lay eggs in the watered channel. During the daytime, the project is operated continuously to maintain spawning and incubation habitat in Sucker Brook downstream of the Project tailrace. This mode of operation continues until physical observations are made regarding the hatching of the eggs and the juvenile smelt move out of the spawning area. <p>Goshen Dam up- and down-ramping restrictions to control the rate of change of downstream flows to protect aquatic organisms.</p> <p>Tailrace down-ramping restrictions to protect stranding and mortality to downstream aquatic organisms.</p>

B.1.a – Water Quality Certifications

The Project is in compliance with all conditions of the Clean Water Act Section 401 water quality certification (included in Attachment A).

The Silver Lake WQC was issued on December 5, 2008. Condition I of the Vermont WQC required CVPS to monitor dissolved oxygen (DO) and temperature conditions below the Goshen Dam, on a weekly basis from July through September during 2009, based on prior monitoring that indicated occasional low DO conditions.

Monitoring was conducted at four stations directly below the Goshen Dam outlet, and a DO/temperature profile was taken at a reservoir sampling station near the outlet. Article 403 of the License, and Condition I of the WQC required submittal of a plan to install a re-aeration baffle at the outflow of the Goshen control structure if the monitoring indicated that a substandard water quality condition (less than 6.0 milligrams per liter and 70 percent saturation) existed. Some data did indicate low DO percent saturation, therefore the re-aeration baffle plan was submitted, the baffle installed, and an additional sampling round was requested by VANR during “drought” conditions when the reservoir is at maximum drawdown and summer operating rules apply. Details are available in the 2009 Water Quality Monitoring Report. No monitoring was conducted in 2010 or to date in 2011, since defined drought conditions have not existed.

D.2 – Enhancement Fund

In accordance with Condition R of the WQC, the Lake Champlain and Tributaries Restoration Fund was established in 2009, under a comprehensive settlement agreement covering three CVPS Projects including Silver Lake, with a CVPS contribution of \$250,000 for the Silver Lake Project. The fund’s purpose is to:

- Support eligible projects within the Vermont Lake Champlain basin that protect, restore and enhance lake sturgeon and their habitat, as well as ecosystem integrity and ecological connectivity for aquatic life;
- Restore a self-sustaining population of land-locked Atlantic salmon in Lake Champlain through habitat restoration and fish monitoring programs; and
- Protect the riparian zones along Lake Champlain tributaries for the benefit of ecological and recreational resources through land purchase or conservation easement.

The fund requires 50% matching from eligible non-profit or governmental grantees. The Vermont Community Foundation¹ is the Fund Trustee and administers the grant program. The initial round of grants will be disbursed in 2012.

¹ <http://www.vermontcf.org/lcrf>

E.1 – Listed Species

The Indiana bat (*Myotis sodalis*) is federally listed as endangered, and is likely to occur within the Project area. It has been documented within 10 miles of the Project, as described in FERC's March 13, 1997 Environmental Assessment for the Project. Article 405 of the License stipulates requirements to avoid removing trees (10-inch diameter or larger) between the April 1 and October 31 bat roosting season. However, if tree removal is necessary during that time period for recreation access or routine vegetation management, CVPS will file for approval by FERC, a plan in consultation with US Fish and Wildlife Service (FWS) and Vermont Fish and Wildlife to protect the bat. The plan, if required, will include provisions for surveys and documentation of potential roosting areas by a professional wildlife biologist of all areas slated to be disturbed.

The bald eagle (*Haliaeetus leucocephalus*) is a state-endangered species under the protection of the Vermont Endangered Species Law, and is known to occur, at least on a transient basis, within the Project area. Suitable habitat for bald eagle breeding has been identified at Silver Lake and Lake Dunmore (see Section E.2 below), however no known breeding pairs have been identified within or near the Project area.

The peregrine falcon (*Falco peregrinus*) was identified as occurring on an occasional transient basis in the FERC Environmental Assessment of the Project. The species was also identified in WQC as having historically nested in the ledges east of Silver Lake, just beyond the Project boundary. However, peregrines were removed from Vermont's Endangered and Threatened Species List in April 2005. The eastern cougar may also be present on a transitory basis within the Project area.

According to the License Application Exhibit E (May 1994) the meadow horsetail (*Equisetum pretense*) has been found to occur on small terraces and islands along the base of Goshen dam and for approximately one-half mile downstream. This species is listed as uncommon in Vermont, on the 2011 state list of Rare and Uncommon Native Vascular Plants². Also in the Project's WQC, a 1985 citation was provided that indicated that the Falls of Lana was identified as the only falls or gorge in the state known to have the three-toothed cinquefoil (*Potentilla tridentate*); however, this species is not currently listed as rare, threatened or endangered at the state or federal levels.

E.2 – Recovery Plans

US Fish and Wildlife Service has drafted a Recovery Plan for the Indiana bat³. FWS reviewed and agreed with FERC's Biological Assessment and with the adequate protections included in the resulting License Article 405.

Vermont Fish and Wildlife has drafted a recovery plan for the bald eagle⁴, dated October 2010. The plan includes a bald eagle recovery initiative in the Lake Champlain region, to aid in the

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http://www.vtfishandwildlife.com/library/Reports_and_Documents/NonGame_and_Natural_Heritage/Rare_Threatened_and_Endangered_Species%20%20---%20lists/Rare_and_Uncommon_Native_Vascular_Plants_of_Vermont.pdf

³ http://www.fws.gov/midwest/Endangered/mammals/inba/pdf/inba_fnldrftrecpln_apr07.pdf

establishment of breeding pairs along the Lake, and through educational efforts, set the stage for necessary habitat protection for bald eagles on Lake Champlain. Eaglets were located to Dead Creek Wildlife Management Area in Addison, Vermont, and fledglings were observed in other parts of Addison County, Vermont, not far from Dead Creek WMA; however, eaglets were not located in the vicinity of the Project, nor were fledglings observed near the Project.

F.1 - Cultural Resource Protection

Article 406 of the License stipulated implementation of the “*Programmatic Agreement Among the Federal Energy Regulatory Commission and the Vermont Historic Preservation Officer*” executed on December 2, 2003. CVPS submitted its Historic Properties Management Plan (HPMP) on February 25, 2010 after consultation with Vermont Division for Historic Preservation and United States Forest Service.

Most built resources within the Project are assumed eligible for listing in the National Register of Historic Places (Register). During archeological surveys, twenty documented historic sites were identified within or adjacent to Project lands. These consist of four Native American sites or isolated finds, as well as numerous European American residences and cellar holes, a farmstead, a mill, and a hotel. Green Mountain National Forest (GMNF) retains ultimate responsibility for all non-built sites located within the forest boundary. CVPS consults with GMNF on any ground disturbing activities subject to Section 106 and the HPMP.

The HPMP addresses protective measures for the historic properties, including an evaluation of any site that will be impacted by an activity. Historic resources are evaluated during planning for any alterations to Project facilities, and in consultation with the Vermont SHPO, if activities could impact those resources. Any archeological sites discovered during Project activities will also be subject to the HPMP. An ongoing program of condition monitoring of built historic properties will be conducted on a five-year schedule. Reconnaissance, evaluation and monitoring of archeological sites will include annual monitoring, Phase 1A evaluations or Phase 1B investigations as appropriate for the site.

G.1 - Recreation

The Project is in compliance with Article 401 of the License and water quality certificate Conditions O and P for recreational access, accommodation (including recreational flow releases) and facilities, as well as for occupancy and use (Article 407). Condition Q of the WQC also stipulates implementation of erosion control measures due to recreation, upon written request by the state. A recreation plan was developed in consultation with VANR, USDA Forest Service and local recreation groups. It was filed with FERC for approval on August 26, 2009. A supplement to the plan covering recreation signage designs was filed on February 10, 2010.

The plan addressed grading and widening improvements to the Sugar Hill Reservoir boat launch and parking area turnaround, and planting of native vegetation. Handicap-accessible parking spots and a handicap-accessible fishing access trail and fishing landing were also included in the Sugar Hill recreation plan. Along the penstock in the bypassed reach of Sucker

Brook, at the Falls of Lana, the plan addressed improvements along the foot trail, including drainage improvements, installation of more secure fencing at the falls overlook, repair of minor erosion areas, and removal of vegetation that obscures views of the falls.

The signage plan includes interpretive and directional signs about the significance and history of the project and to direct visitors and recreationists to the Project's features. New signage includes:

- Directional and interpretive signage at Sugar Hill Reservoir;
- Interpretive signage at Silver Lake;
- Interpretive signage at Sucker Brook diversion dam; and
- Interpretive signage on the penstock (Falls of Lana).

In an Order dated February 17, 2011 FERC approved the plan in part, with the exception of the proposed handicap-accessible fishing landing at Sugar Hill Reservoir. On August 22, 2011 CVPS submitted a plan to FERC after consultation with resource agencies, for a re-designed handicap-accessible fishing location.