

**CENTRAL VERMONT PUBLIC SERVICE CORPORATION  
MIDDLEBURY LOWER (LP 2737) AND WEYBRIDGE (LP 2731) PROJECTS**

**LOW IMPACT HYDROPOWER CERTIFICATION APPLICATION**

**ATTACHMENT D  
DETAILED RESPONSES TO APPLICABLE LIHI QUESTIONS**

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<a href="#"><u>Question B.1.a</u></a>	Water Quality – Water Quality Certifications
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**A.1 – Flow Conditions**

The Projects are in compliance with flow conditions and reservoir elevations for fish and wildlife protection, mitigation and enhancement. These requirements are included in the Middlebury Lower Project’s License Articles 401 through 403, and water quality certificate (WQS) Conditions B through E; and in the Weybridge Project’s License Articles 401 through 404, and WQS Conditions B through H. Operations may be temporarily modified if required by operating emergencies and in consultation with Vermont Agency of Natural Resources (VANR) and with notification to FERC.

In accordance with the FERC Order amending minimum flow (August 7, 2008), Weybridge maintains a minimum conservation flow of 250 cfs, providing a flow of 125 cfs in the bypass and the west channel, and 100 cfs in the West Channel. During the period April 1 to June 15, the project is operated with stable impoundment in a true run-of-river mode (outflow = inflow). Ramping procedures are used whenever the project generation is started or stopped.

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**

<b>Project</b>	<b>Minimum Flow</b>	<b>Other Flow Conditions</b>
Middlebury Lower	157 cubic feet per second (cfs)	<ul style="list-style-type: none"> <li>• Minimum flow is released as a veiling flow over the crest of the dam.</li> <li>• Reservoir surface elevation of 314.5 ft. (± 1 inch) NGVD.</li> <li>• Minimize reservoir fluctuation such that instantaneous outflows equal inflows.</li> <li>• If the reservoir is drawn down, the rate of refill is no greater than 10 percent of the instantaneous inflow rate.</li> </ul>
Weybridge	<p>125 cfs in the bypass and West Channel.</p> <p>100 cfs in the East Channel.</p> <p>250 cfs, or inflow if less, during shutdown with a minimum of 100 cfs into the West Channel (per 08/07/08 License amendment).</p> <p>250 cfs for walleye spawning during April and May, if/when walleye have been introduced. Do date, this has not occurred.</p>	<ul style="list-style-type: none"> <li>• April 1 - June 15, maintain a stable impoundment with instantaneous outflow equal to inflow.</li> <li>• Drawdowns limited to 2 feet or less during normal operations, and no reservoir drawdowns from April 1 - June 15.</li> <li>• No 4-foot drawdowns (except in emergency situations with approval) between October 15 and April 1.</li> <li>• Drawdowns greater than 2 feet for annual maintenance are made in consultation with the agencies.</li> <li>• Maintain existing downramping and upramping procedures when reducing flows to, or increasing flows above, the minimum flow of 250 cfs.</li> <li>• Limit ramping between maximum and minimum flow in a 24-hour period to no greater than a 4.5:1 ratio.</li> </ul>

### **B.1.a – Water Quality Certifications**

The Projects are in compliance with all conditions of the Clean Water Act Section 401 water quality certifications (included in Attachment A). The Middlebury Lower WQC was issued on June 2, 1999, with no specific water quality monitoring or mitigation requirements.

The Weybridge WQC was issued on May 7, 2001. Article 406 of the License, and Condition I of the WQC required CVPS to develop and implement a plan to conduct dissolved oxygen (DO) monitoring in the tailrace during the months of July, August and September, whenever Project shutdowns exceed two consecutive days. Included was a requirement to release flows to the tailrace to maintain state water quality standards, if monitoring indicated a violation of state standards. The purpose of the monitoring was to determine if special freshening flows were needed to assure that substandard DO conditions are not produced by plant shutdowns. Monitoring has demonstrated that DO standards are not violated during operational shutdown.

### **B.2 and B.3 – Water Quality Standards – CWA Section 303(d)**

One area in the vicinity of the Middlebury Lower Project is identified by the State of Vermont in their 2010 Clean Water Act Section 303(d) List of Impaired Waters<sup>1</sup>. Specifically, the section of Otter Creek from the mouth of the Middlebury River to the Pulp Mill Bridge was identified as impaired due to *e. coli* from agricultural runoff and possible failed septic systems. Project facilities are not identified as causing this water quality impairment.

### **C.5 – Riverine Fish Passage**

Article 402 of the Weybridge License and Condition D of the WQS stipulate installation of a diversion structure in the tailrace reach to better distribute discharge flows. Rock Island divides the Project dam and extends downstream, dividing the tailrace from the bypassed reach of the river. Immediately downstream from the dam are several small islands, and one larger island - Wyman Island - that partition river flow. A diversion structure was installed to extend from the downstream end of Rock Island to the next small island at the entrance to the West Channel around Wyman Island, reapportioning the flow in the bypassed (west) and tailrace (east) channels. The primary purpose of the diversion structure was to increase the amount of fish habitat below the Project by creating more consistent flow conditions on the west side of Wyman Island. Construction of the diversion structure was completed in late August 2002.

Condition F of the WQS stipulated monitoring of the structure's performance for a period of five years after installation. After annual monitoring was complete, subsequent agency consultations and a FERC Order (August 7, 2008) reduced the monitoring to calibration and verification of performance on a five-year basis, beginning in 2013.

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<sup>1</sup> [http://www.vtwaterquality.org/mapp/docs/mp\\_2010\\_State\\_Lists\\_final.pdf](http://www.vtwaterquality.org/mapp/docs/mp_2010_State_Lists_final.pdf)

## **E.1 – Listed Species**

The Indiana bat (*Myotis sodalis*) is federally listed as an endangered species. According to Vermont Fish and Wildlife Department<sup>2</sup>, the bat's summer range in Vermont is limited to the southern Champlain Valley, from West Haven to Hinesburg, a range that includes the two Project areas.

The bald eagle (*Haliaeetus leucocephalus*) is a state-endangered species under the protection of the Vermont Endangered Species Law, and could be present on a transient basis within or near the Projects.

Osprey (*Pandion haliaetus*) have also been observed in the vicinity of the Projects, and the Vermont Fish and Wildlife Department installed at least one pole mounted nesting platform nearby in Middlebury in 1990. Osprey is listed as uncommon in Vermont and as a "species of greatest conservation need" in the Vermont Wildlife Action Plan, but that designation does not convey legal protection.

## **E.2 – Recovery Plans**

US Fish and Wildlife Service has drafted a Recovery Plan for the Indiana bat<sup>3</sup> that does not affect Project operations. Vermont Fish and Wildlife has drafted a recovery plan for the bald eagle<sup>4</sup>, dated October 2010. 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 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, not far from Dead Creek WM; however, not in the vicinity of the Projects.

There is also a state recovery plan for osprey<sup>5</sup> that dates back to 1997. However, osprey are no longer listed as threatened or endangered on state or federal listings.

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[http://www.vtfishandwildlife.com/library/factsheets/nongame\\_and\\_Natural\\_Heritage/Landowner's\\_Guide\\_to\\_Indiana\\_Bat\\_Habitat.pdf](http://www.vtfishandwildlife.com/library/factsheets/nongame_and_Natural_Heritage/Landowner's_Guide_to_Indiana_Bat_Habitat.pdf)

<sup>3</sup> [http://www.fws.gov/midwest/Endangered/mammals/inba/pdf/inba\\_fnldrftrecpln\\_apr07.pdf](http://www.fws.gov/midwest/Endangered/mammals/inba/pdf/inba_fnldrftrecpln_apr07.pdf)

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[http://www.vtfishandwildlife.com/library/Reports\\_and\\_Documents/NonGame\\_and\\_Natural\\_Heritage/Recovery%20Plans/Vermont%20Bald\\_Eagle\\_Recovery\\_Plan.pdf](http://www.vtfishandwildlife.com/library/Reports_and_Documents/NonGame_and_Natural_Heritage/Recovery%20Plans/Vermont%20Bald_Eagle_Recovery_Plan.pdf)

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[http://www.vtfishandwildlife.com/library/Reports\\_and\\_Documents/NonGame\\_and\\_Natural\\_Heritage/Recovery%20Plans/Vermont\\_Osprey\\_Recovery\\_Plan.pdf](http://www.vtfishandwildlife.com/library/Reports_and_Documents/NonGame_and_Natural_Heritage/Recovery%20Plans/Vermont_Osprey_Recovery_Plan.pdf)

### **F.1 - Cultural Resource Protection**

Article 405 of the Middlebury Lower License, and Article 407 of the Weybridge License each stipulated implementation of the “*Programmatic Agreement Among the Federal Energy Regulatory Commission and the Vermont Historic Preservation Officer*” executed on February 21, 2001. CVPS submitted its Historic Properties Management Plan (HPMP) for each Project on November 22, 2002 after consultation with Vermont Division for Historic Preservation.

Most built resources within each Project are assumed eligible for listing in the National Register of Historic Places (Register).

At the Middlebury Lower Project, nine documented historic sites were identified within or adjacent to Project lands in the HPMP. These consist of four Native American sites and five European American industrial sites including a gristmill, pulp mill, foundry and shop. At the Weybridge Project, seventeen sites were identified at the time of the HPMP, most of those being Native American sites, as well as two European American sites consisting of a parsonage and a former dump.

The HPMP for each Project 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. In addition, an action plan for riverbank stabilization control measures is included in the Weybridge Project HPMP.

### **G.1 - Recreation**

The Projects are in compliance with relevant Articles of their respective Licenses, and with relevant Conditions in their water quality certificates. For Middlebury Lower, this includes Articles 406 and 407, WQC Conditions J and K; and for Weybridge, it includes Articles 408 and 409, and WQC Conditions N and O.

These requirements stipulate provisions for recreational access, accommodation (including recreational flow releases) and facilities, as well as for occupancy and use. A recreation plan for each Project was developed in consultation with the SHPO, state and federal resource agencies and local communities.

FERC approved the recreation plan for Middlebury Lower in 2002. The improvements included a canoe take-out, put-in, and portage trail with signs; improved parking facilities; a picnic table in the existing project recreation area that is accessible to persons with disabilities; a footbridge over the historic mill channel; and measures for re-establishing vegetation on the hillside of the existing recreation area.

FERC approved the recreation plan for Weybridge in 2002. The improvements included interpretive signage; relocation of the canoe portage take-out; and modification of an existing picnic table so that it is accessible to persons with disabilities.