

**Water Quality Certification Amendment**  
(P.L. 92-500, Section 401)

In the matter of:   **Village of Swanton**  
                          **Swanton, Vermont**  
                          **Application to amend the**  
                          **Highgate Falls Hydro-**  
                          **electric Project.**

The Water Quality Division of the Vermont Department of Environmental Conservation (the Department) has reviewed an application dated January 25, 1991 from the Village of Swanton (the applicant) to amend their project's water quality certification because of changes to project design. The applicant has provided the Department with supplemental information in a letter of February 18, 1990. The Department has made the following findings:

1.    The applicant proposes to change the final design height of the impoundment from an elevation of 200.0' NGVD to 190.0' NGVD. The final elevation of the dam crest would be reduced by seven feet to 173.0' NGVD.
2.    Instead of two radial gates and three stanchions, two crest gates will be used: one 76' by 17' high and another 66' by 17' high; and, two stanchion sections, each 21.2' by 35' high will be installed to pass high flows.
3.    The deck of the intake structure will only be increased to an elevation of 193.0' NGVD from the present elevation of 180.0' NGVD.
4.    The 190.0' NGVD impoundment will extend to within a 1/3 of a mile of the bridge in East Highgate. The 190.0' NGVD impoundment will inundate a set of falls and rapids just upstream of the present impoundment and part of a set of rapids just downstream of East Highgate.
5.    It is estimated that approximately 26 acres of river-associated wetland would be lost by the proposed increase in impoundment elevation from the present operating elevation. With a pool elevation of 190.0' NGVD, it is estimated that at best 12 acres of wetland would be created in the long term. It is further assumed that of the 12 acres, about 3/4 of the acreage is expected to be converted to wetlands within the first five years. Therefore, the near-term net loss is estimated at 17 acres.

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6. The impoundment level change from 200.0' NGVD to 190.0' NGVD may increase or decrease the possibility for shoreline erosion and siltation, and consequent degradation of water quality, depending on the proximity of steep slopes to the waters edge and the character of the soils involved. The applicant plans to clear land to elevation 190.0' NGVD and own land to an elevation of 200.0' NGVD.
7. The report of January 1987, Soil Erosion and Sediment Control Plan, Phase II Construction, includes a section covering a reservoir slope investigation by Haley and Aldrich, October 15, 1986. This report is keyed to an elevation of 200 feet as far as slope investigations are concerned. A reevaluation of slope stability issues has not been done to determine if the erosion/sedimentation effects will be greater or less at 190.0' NGVD impoundment level. Similar to the 1987 investigation, critical slopes impacted by the 190.0' NGVD pool need to be identified and remedial measures proposed.
8. The proposed impoundment is a highly sensitive land area that contains many important Abenaki archeological and cultural sites.<sup>1</sup> A new geotechnical investigation may identify critical slopes in areas associated with these archeological and cultural sites. Special procedures or techniques to stabilize such areas against shoreline erosion may need to be developed, compatible with these special values.
9. Erosion/sediment control plans for the construction phase have not yet been amended to reflect the lower reservoir height.
10. Impacts upon visual resources and aesthetics will be less than those of the project as originally licensed and approved.
11. New recreational opportunities to enhance public access to fishing, swimming, boating and other appropriate recreational uses and activities will be created at the 190.0' NGVD impoundment level.
12. The effects on terrestrial habitat are unknown at this time, though less habitat will be lost with the lower impoundment level and there

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<sup>1</sup>Thomas, Peter, March, 1983, Intensive Archeological Evaluation for the Highgate Falls Hydroelectric Project, University of Vermont, Department of Anthropology, Report #44.

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will be benefits to riparian zone habitat through ownership of land between elevation 190.0' NGVD to 200.0' NGVD.

13. The 190.0' NGVD impoundment elevation will change riverine fisheries habitat to reservoir habitat. Mitigation as required in the 1983 water quality certification continues to be appropriate.
14. The smaller civil works involved in the revised plan, although not insignificant, will result in a shorter construction period, which will reduce short term environmental impacts associated with the dam's construction.
15. The Department finds that, on balance, the reduced impoundment level brought by the design changes will, in general, lessen the water quality impacts of the project.

**Conditions**

Based on its review and findings, the Department hereby amends the Highgate Falls Water Quality Certification by modifying Condition C and conditions M through U.

- C. Maximum daily reservoir drawdowns shall not exceed 2.5 feet (minimum elevation 187.5' NGVD). During the period March 31 through June 1, there shall be no reservoir drawdown below elevation 190.0' NGVD.
- M. The applicant shall file for review and approval, prior to the start of construction, a plan for monitoring instantaneous flow releases at the project. Following approval of the monitoring plan and commencement of project operation, the applicant shall then measure instantaneous flows and provide records of discharges at the project on a regular basis as per specifications of the Department. Upon receiving a written request from the applicant, the Department may waive the requirement for flow monitoring at this project provided the applicant satisfactorily demonstrates that the required flow will be discharged at all times.

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- N. The applicant shall file for approval a plan of study for monitoring the flooding and formation of wetlands. This plan shall be filed before the present impoundment level is altered. The documentation shall include plans for mitigating any loss of existing wetlands. The results of the study shall be filed within five years of project completion as required in Article 43 of the FERC license with the implementation of mitigation efforts, as appropriate, following a schedule approved by the Department.
- O. The Applicant shall file an update of the geotechnical studies. Proposed shoreline stabilization measures which occur at or in proximity to archeological and cultural sites shall be identified, along with any special techniques to be used to protect their archeological or cultural values. Copies of the above report shall be submitted to the Department and the Division of Historic Preservation.
- P. No construction may commence until after the Department has issued written approval under Conditions A,H,K,M and O. Operational changes made after project completion are subject to Condition K and must be approved prior to effecting the change.
- Q. The applicant shall notify the Department when project construction has been completed to arrange for an Agency site visit. This shall be done in writing within two weeks of the commencement of project completion.
- R. Any desilting of the dam impoundment shall be done in accordance with the Agency of Environmental Conservation's Desilting Policy, a copy of which is attached. The Department shall be contacted prior to any desilting activity.
- S. The applicant shall allow public access to the project area by providing facilities for fishing, swimming, boating and other appropriate uses and activities, subject to reasonable safety and liability limitations. Such access should be prominently and permanently posted so that its availability is made known to the public.
- T. The applicant shall allow the Department to inspect the project area at anytime to monitor compliance with certification conditions.

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- U. The applicant shall incorporate all conditions, in any conveyance, by lease, sale or otherwise, of his interests so as to legally assure compliance with said conditions for as long as the project operates.



Reginald A. LaRosa  
Acting Commissioner  
Dept. of Environmental Conservation

Dated at Waterbury, Vermont  
This 13 day of Sept, 1991

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Attachment: Desilting Policy

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updated 9/09/91