Maine Department of Environmental Protection

Study Request

Lowell Tannery Hydropower Project (FERC No. 4202)

**Impoundment Trophic State and Aquatic Habitat Study**

1. **Describe the goals and objectives of each study proposal and the information to the obtained.**

Trophic state and aquatic habitat are important indicators of water quality within the impoundment. Assessment of these criteria provides information to evaluate the health of the impoundment and the impact of the dam structure and operation on the river. The objective of this study proposal is to determine if the project impoundment meets Maine Water Quality Standards including habitat and aquatic life criteria, dissolved oxygen criteria, and the designated use of recreation in and on the water. Data collected will be used to determine if the impounded water satisfy aquatic life criteria.

1. **If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied.**

The resource management goal is to ensure attainment of Maine Water Quality Standards pursuant to the provisions of the *Water Classification Program*, 38 M.R.S. Sections 464-468 and to certify attainment of such, with any necessary conditions, under Section 401 of the Federal Water Pollution Control Act (a.k.a. Clean Water Act).

1. **If the requestor is not a resource agency, explain any relevant public interest considerations in regard to the proposed study.**

Requestor is a resource agency.

1. **Describe existing information concerning the subject of the study proposal, and the need for additional information.**

Agency file review indicates there is no data in support of these criteria for impounded water upstream of the Lowell Tannery dam. The PAD does not reference a study of this nature, although the height of the dam indicates that stratification may occur in the impoundment. If stratification does occur, it should be identified and its effects quantified.

1. **Explain any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements.**

Data collected will identify trophic state and may identify stratification effects on the impounded water and habitat. Information will be used to evaluate whether the Project meets Maine designated uses, habitat and aquatic life criteria, and dissolved oxygen criteria, which will inform the water quality certification process.

1. **Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate filed season(s) and duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge.**

The DEP Sampling Protocol for Hydropower Studies (June 2018) was established by Department staff and has been used successfully throughout the State by the DEP and others. A copy of the Department protocol is attached to the PAD comment letter.

1. **Describe considerations of level of effort and cost, as applicable, and why proposed alternative studies would not be sufficient to meet the stated information needs.**

Trophic state samples are collected twice each month for five consecutive months during open water season. If required, an impoundment aquatic habitat study can be completed in one field season. Costs are considered reasonable given that this study is required for Maine water quality certification and is routinely completed at hydropower projects being relicensed in the State. No alternatives to this study are proposed.