Maine Department of Environmental Protection

Study Request

Lowell Tannery Hydropower Project (FERC No. 4202)

**Downstream Temperature and Dissolved Oxygen Study**

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

Temperature and dissolved oxygen (DO) are important indicators of water quality to ensure that discharges from the hydropower project are sufficient to maintain the resident biologic community downstream of the Lowell Tannery dam. Assessment of temperature and DO data in the downstream reaches will be used to determine if the hydropower project meets Maine Water Quality Standards including Class C DO 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 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.**

Dissolved oxygen concentrations downstream of the Lowell Tannery dam must meet Maine water quality criteria for Class AA waters. Agency file review indicates temperature and dissolved oxygen data is insufficient to assess attainment of these criteria. The PAD does not indicate that a study of this nature is planned for the project.

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 be used to evaluate project effects on water temperature and DO concentrations in the Passadumkeag River downstream of the Lowell Tannery dam. Information will be used to evaluate whether the project meets Maine DO criteria for Class AA waters and 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.**

The DEP Sampling Protocol for Hydropower Studies (June 2018) offers two options for the temperature and DO study that can be completed in one field season. Temperature and DO samples can be collected one day per week for at least 10 weeks or measured hourly using data sondes placed at designated locations during summer low flow, high water temperature conditions (e.g. July and August). The Department prefers the second method. 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.