Maine Department of Environmental Protection

Study Request

Lowell Tannery Hydropower Project (FERC No. 4202)

**Benthic Macroinvertebrate Study**

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

Assessment of the benthic macroinvertebrate community is critical to determine whether current in-stream flow releases affect attainment of Maine habitat and aquatic life criteria for Class AA waters in the Passadumkeag River below the Lowell Tannery dam. The assessment provides biological data to evaluate potential impacts caused by project operations.

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.**

The Passadumkeag River must meet Maine aquatic life criteria in the vicinity of the Lowell Tannery Project. Agency file review indicates data is insufficient to evaluate the current aquatic community in the tailrace reach downstream of the Lowell Tannery dam. 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 the benthic macroinvertebrate community in the tailrace reach downstream of the Lowell Tannery dam. Information will be used to evaluate whether the project meets Maine aquatic life criteria 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 Methods for Biological Sampling and Analysis of Maine’s Rivers and Streams (August 2002, revised April 2014) was established by Department staff and has been used successfully throughout the state by DEP and others since 1983. A copy of the Department manual 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.**

Replicate benthic macroinvertebrate sample collectors (rock baskets or cones) are deployed for a 28-day study period in the tailrace reach of the hydropower project during low flow, high temperature conditions. Samples must be collected by a professional aquatic biologist and evaluated by a professional freshwater macroinvertebrate taxonomist. Methods are documented in the DEP manual Methods for Biological Sampling and Analysis of Maine’s River and Streams (August 2002, revised April 2014). 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.