



Town of Boothbay Harbor West Harbor Pond Water Quality Restoration



Aerial view of south end of West Harbor Pond showing WHP dam, fishway and location of break in siphon.

PARTNERS

Town of Boothbay Harbor, West Harbor Pond Watershed Association (WHPA), Maine Department of Transportation (MaineDOT), Maine Department of Environmental Protection (DEP), Maine Department of Marine Resources (DMR), Maine Department of Inland Fisheries and Wildlife (IF&W), Boothbay Harbor Sewer District, Boothbay Region Water District, Lincoln County Regional Planning Commission (LCRPC)

PROJECT DESCRIPTION (completed November 2018)

West Harbor Pond was created in the 1880's when a granite block dam was put across the mouth of Campbell Cove to impound freshwater flowing from Campbell Stream and create a freshwater pond for producing ice. Two siphons were installed to drain the saltwater trapped behind the dam into the inner harbor. After ice production started, one siphon was removed, but the other, with inlet at a depth of about 24', was left intact to continue to return to the harbor saltwater that seeped through the dam or entered through the opening in the fish ladder at extreme high tide. This system functioned as intended for 130 years, during which time the Pond remained free of saltwater to the depth of the siphon intake. Above this 24' level was fresh water that turned over seasonally, re-oxygenating the pond and maintaining its aquatic health. In 2008, however, after a couple years of gradual decline, the siphon failed entirely, rupturing at a point near the midline of State Route 27. This resulted in the pond's dead zone eventually rising to the 12-foot level. The purpose of the project was to engage an engineering firm to investigate and design a new siphon to replace the inoperative siphon and restore the water quality of the pond and secure any required state and federal permits.

APPROACH

Because of the project's location between freshwater and marine water bodies and under a state highway, a variety of permits and design approvals was anticipated. Agencies to be consulted included MaineDOT, DEP, DMR, IF&W and the US Army Corps of Engineers. An engineering firm and a dive contractor were selected to pursue the project with LCRPC staff and the WHPA providing oversight. Local officials including representatives of the Boothbay Region Water District, the Boothbay Harbor Sewer District and the Boothbay Harbor Public Works Department played active roles in the project.

State and federal agencies with potential interest in the project were consulted by the engineer. Preliminary engineering as well as feedback from various agencies determined that an in situ replacement of the siphon would not be feasible due to potential adverse impact on the road bed. An alternate location for the siphon through an existing fishway was identified and reviewed with interested agencies. Engineering plans were formalized and permit applications prepared and submitted.

RESULTS

The following permits were issued for the project (Permit fees were paid by the applicant):

- MaineDOT Road Opening
- USACE Permit
- MDMR Submerged Lands Leaser
- MDEP Permit by Rule

In addition, IF&W and DMR approved the design and operational plan for installing the siphon within the fishway. While permit applications were being reviewed by the agencies the WHPA began funding-raising. A local contractor offered to construct the project at a substantially lower cost than the engineering estimate as a community service and the Boothbay Region Water District and the Boothbay Public Works Department offered to donate supplies and services in support of the project. As a result these cost reductions and a successful fund-raising campaign the project budget is fully funded.

NEXT STEPS.

The construction phase was completed during the first two weeks of November, 2018.

LESSONS LEARNED.

Fundraising works best when it results directly in a physical improvement, such as a new siphon. It may be more difficult to successfully fundraise for the planning stage of a project. The WHPA had attempted to identify funding for project engineering in the past but it was not until they applied for and received a Coastal Communities Grant to cover most of the engineering cost did the project become a reality. Without question, the Coastal Community Grant program fills a critical void for communities searching for solutions for what sometimes seem to be intractable problems.



**COASTAL COMMUNITY GRANTS:
Coastal habitat restoration**

For additional information

Robert Faunce, Regional Planner rfaunce@lcrpc.org
Megan McLaughlin, County Planner mmclaughlin@lcrpc.org

Lincoln County Regional Planning Commission
207- 882 - 4271

FY18CCG-56
2.20.19.

Financial assistance provided by the National Oceanic and Atmospheric Administration, U.S. Department of Commerce Grant CZM NA17NOS4190116 to the Maine Coastal Program. Coastal Community Grants are awarded and administered by the Municipal Planning Assistance Program at the Maine Department of Agriculture, Conservation and Forestry.

