



SPRUCE CREEK ASSOCIATION

TIDAL RESTRICTION AT ROUTE 1 DEMONSTRATION

PROPOSAL

The Town Council will hold a public hearing on October 24, 2005 to consider a one-year demonstration to confirm the expected improvement in water quality and habitat from increased tidal flow in the upper portions of Spruce Creek. The increased tidal flow would be achieved by removing the existing flashboards at the Route One tidal weir. The improvements will be confirmed through water quality monitoring and abutter interviews.

NARRATIVE

In 1988 the Town of Kittery, the Maine Department of Transportation (MDOT) and the Department of Marine Resources (DMR) entered into an agreement that MDOT would replace the dam at Route 1 with a removable flashboards system in order to improve water quality in the upper portions of Spruce Creek. The new system predicted 58% to about 69% increased water flow with the flashboards in and to over 90% with the boards out. The Town accepted responsibility for operating and maintaining the flashboards and the DMR agreed to monitor the operation and maintenance. (See Attachment A for the municipal/state agreement; see Attachment B for history of this crossing and the weir).

A schedule for the removal of the flashboard for greater flushing was not implemented. In 2001 the Town Council deemed removal of the flashboards not worth the expense. Because of more recent information and concerns for water quality and habitat, the Spruce Creek Association convened a meeting of stakeholders on October 15, 2004. The outcome of a subsequent stakeholder meeting held on March 11, 2005 was a consensus to determine if the weir was structurally sound and then to restore the intended function of the tidal gates. (See Attachment C for feedback and notes from these meetings.)

This past spring the MDOT inspected the weir and found it to be structurally sound and able to support removal and reinstallation of the flashboards. (See Attachment D, dive inspection report).

During the last working session on September 28, 2005, the now smaller working group decided to seek Town Council approval of removal of all 6 flashboards for a one-year period (see Attachment C). The flashboards would be removed, new ones immediately built for replacement in one year, and the yearlong flushing of upper Spruce Creek would commence this year during the cold season. After the end of the year the new flashboards would be put back in, the working group reconvened, findings evaluated, abutters surveyed, and an action plan and schedule for future operation of the tidal gates and the weir devised.

NEED

Assessments conducted in Spruce Creek this year indicate degraded water quality in the upper reaches of Spruce Creek (visit www.sprucecreekassociation.org/projects.html to view the 2005 projects and data). Northern Ecological Associates, who conducted an inventory of potential restoration opportunities this past spring, reported to the working group on September 28, 2005 that the tidal restriction received the highest score as the largest opportunity for habitat restoration in Spruce Creek.

GOALS

The goal of this yearlong flushing demonstration is to monitor the estuary system to restore a more productive and healthy habitat.



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MONITORING OF BASIC PARAMETERS DURING THE DEMONSTRATION PERIOD

The following are the proposed monitoring and assessment activities for this demonstration period:

- A baseline of the tidal curve will be established (see Attachment E for proposal by K2 Science, LLC).
- A baseline inventory of habitat stressors and issues has been conducted by Northern Ecological Associates and will be used to help in assessing potential changes in habitat after the demonstration.
- Spruce Creek Association plans to continue water quality monitoring from May through September 2006 following the DEP-approved quality assurance plan. Dissolved oxygen, salinity and temperature will be measured to gather percent dissolved oxygen saturation data.
- Spruce Creek Association plans to continue to monitor fecal coliform levels on a monthly basis year round, as part of the Department of Marine Resources shellfish monitoring program.
- Interview with abutters will be conducted at certain points during the demonstration period to monitor the impact of the demonstration on quality of life.
- Spruce Creek Association will set up photo stations on each side of the four restrictions to record vegetation change during the course of the year.

COSTS

The following are the approximate costs related to conducting this demonstration:

- \$350 for a study to determine baseline tide levels near the Spruce Creek, Route 1 crossing (see Attachment E)
- Approximately \$1000 for a dive team to remove the flashboards
- Approximately \$500 for new flashboards
- Approximately \$1000 for dive team to replace the flashboards (unless that can be achieved at a low tide by volunteers and/or Town employees)

FUNDING

The Spruce Creek Association has agreed to advance the \$350 required for the tidal curve study as a result of timing and availability of monitoring equipment. This project is being conducted starting Tuesday, October 4, 2005 and to continue for approximately 2 weeks. These funds were “advanced” on the understanding that money may possibly be provided by the Kittery Conservation Commission, pending a vote at their next meeting in October.

It is proposed that the Town consider using monies available in the Wetlands Mitigation fund and/or apply for grant(s) to cover the costs related to this project. The Spruce Creek Association would assist in this application process but limitations do exist based on timing and amount of funds needed. It may be necessary for the Town, the DOT, and/or the DMR to provide some funding and/or “bridge loan” funds until grant monies can be secured.

Potential funding sources for the costs related to this demonstration to be pursued include the Maine Coastal Program, the National Oceanic and Atmospheric Administration, the New England Grass Roots Environmental Foundation, and the Greater Piscataqua Community Foundation. Ability to submit proposals for these funds depends on their open periods, ability to apply funding to work already underway or completed, ability to act as a reimbursement for “bridge loans”, and applicability to this demonstration.