COMMUNITY PRESERVATION ACT (CPA) COMMITTEE
MEETING
Thursday, March 29, 2012
Minutes

Members present: Chair Tom Johnson, Ed Brookshire, Robert Finlay, Robert Mumford, Peter Wade, Judy Poulin, Lucy Cookson
Members absent: Linda Haspel
Others present: Sandy Bayne, Adele Blong, Steve Cole

Chairman Tom Johnson called the meeting to order at 6 PM.

The first item of business was to reconsider the application for the Purchase of Two Solar Bees for Ponds. The application is for $135,000 and is intended for Minister's and Schoolhouse Ponds.

Mr. Mumford noted that since he is a direct abutter to three ponds in the Town of Eastham, he is abstaining from participating as a CPA Committee member in the consideration of any pond remediation applications.

A motion was made to waive the CPA application deadline (moved Brookshire, seconded Wade, voted 6-0-1 with Mumford abstaining).

Discussion followed on the application. The CPA Committee considered information from EcoLogic's final report "Action Plan for the Town of Eastham Ponds" dated December 2011. The Committee also received input from Sandy Bayne of the Water Management Committee. Issues noted by the CPA Committee included the sources of phosphorous contamination (the high percentage from Route 6 runoff into Minister's Pond was noted) and the uncertain effectiveness of the Solar Bees (based on EcoLogic's review of the system's use in ponds outside of Eastham).

A motion was made to approve the application for the purchase, installation and monitoring of two Solar Bees in the amount of $135,000 for Minister's and Schoolhouse Ponds (moved Brookshire, seconded Poulin). Further discussion followed. Members restated the issues raised earlier in the meeting about sources of contamination and questionable effectiveness of the Solar Bees. Several members commented that it may be appropriate to wait until the results of the recent Solar Bee installation in Mashpee are available. The motion to approve the project failed 1-5-1 (Brookshire in favor, Johnson, Wade, Poulin, Finlay and Cookson opposed, Mumford abstaining).

The minutes of February 22, 2012 were approved 6-0-1 (moved Wade, seconded Brookshire). Mumford abstained due to absence.

The minutes of March 1, 2012 were approved 5-0-2 (moved Finlay, seconded Brookshire). Mumford and Poulin abstained due to absence.

The next meeting will be posted for Wednesday, April 4, 2012 at 2:30 PM. The meeting will be with the Board of Selectmen.

Motion to adjourn at 7:10 PM (moved Poulin, seconded Brookshire), voted 7-0.

Respectfully submitted,

Robert L Mumford

Robert L Mumford, Clerk

approved 4/24/12
6-0

Table 3-8. Summary of potential use impairments, Eastham Ponds

Criteria	Ponds
Low dissolved oxygen in the deep waters, creating stress on cold water fish communities	Great Herring Depot
Low N:P ratio, increased risk of cyanobacterial (blue-green algae) blooms	Widow Harding Little Depot
Reduced water clarity from algal abundance, leading to diminished aesthetic and recreational quality	Minister Little Depot Herring Muddy Schoolhouse

3.6 Watershed Sources

The water quality of the kettle ponds of Eastham is largely governed by their natural assimilative capacity, which includes pond volume, depth and water residence time, and by the amount of development within the watersheds. On-site wastewater disposal systems, in particular, are implicated as the major sources of phosphorus to the inland kettle ponds. Phosphorus moves very slowly through the Cape Cod aquifer, and the conditions measured in the Eastham ponds through 2010 do not reflect steady-state conditions. Phosphorus loading will increase, and will contribute to further water quality decline in the ponds.

The Cape Cod Commission report (Eichner 2009) estimated the sources of phosphorus to six of the Eastham ponds (Table 3-9). The range associated with the contribution from wastewater disposal reflects variability in the estimated rate at which phosphorus migrates through the groundwater.

Table 3-9. Summary of estimated phosphorus sources (Eichner 2009)

Pond	Major Phosphorus Sources and Estimated Percent Loads
Great	Sediment (33-34%), precipitation (15-28%), septic (11-17%)
Depot	Septic (0-44%), birds (31-38%), roads (7-25%), roofs (7-25%), precipitation (2-6%)
Herring	Sediment (0-60%), roads (6-35%), precipitation (6-31%), roofs (3-18%), septic (0-16%)
Minister	Roads (29-60%), septic (0-45%); precipitation (4-10%), sediment (not quantified). ***Note that runoff from Highway 6 enters this pond, and is likely to be a significant source***
Schoolhouse	Birds (26-46%), roads (18-26%), precipitation (14-21%); input from Minister Pond (not quantified).
Muddy	Roads (21-45%), septic (0-38%), birds (17-21%), precipitation (10-21%)

literature documents inconsistent results for enhanced mixing. Overall, less than half of the projects have resulted in reduced algal blooms, or increased water clarity.

The enhanced mixing does not bring about a reduction phosphorus concentrations in the upper waters. The failure of artificial recirculation to improve water quality in many situations has been attributed to undersized equipment (Cooke et al. 2005).

The SolarBee® technology has been applied to many water bodies, as documented on the company web site **www.solarbee.com**. A summary of case studies is included in Appendix 2. In general, the units appear to be more effective on smaller waterbodies. Several scientific evaluations of the water quality impacts of the SolarBee® have been completed through cooperative projects that teamed scientists from academic institutions and regulatory agencies with staff engineers and scientists from SolarBee®, as briefly noted below.

- Tufts University/ Mass DEP evaluation : Lake Cochituate, Natick MA
  Two units installed in 2006, removed in 2007 - no effect on Eurasian water milfoil.
- State University of NY/ Livingston County Planning Department evaluation: Conesus Lake, NY
  Two units installed in 2006, removed in 2007 - no discernible effect on Eurasian water milfoil, water clarity, dissolved oxygen or chlorophyll-a.
- Vermont Agency for Natural Resources
  Three units placed in St. Albans Bay, 2007. No evidence that the SolarBee® installation in St. Albans Bay reduced algal concentrations, improved water clarity, or inhibited blue-green algal growth.
- University of Wisconsin/ City of Madison evaluation: Monona Bay, Madison WI
  Five units placed in 2005 and 2006, terminated after no water quality improvement.

There has been interest in using these devices to improve water quality conditions in Cape Cod kettle ponds. Residents around the 15-acre Skinequit Pond in Harwich installed a SolarBee® in 2007. There has been no statistical improvement in water clarity or reduction in algal abundance, according to the Town of Harwich Water Quality Task Force. As displayed in Figure4-1, water clarity in Skinequit Pond increased in 2007, but conditions in 2008 – 2010 are comparable to those prior to installation of the unit.

TOWN OF EASTHAM • COMMUNITY PRESERVATION COMMITTEE
PROJECT APPLICATION and INFORMATION FORM

DATE: Mar 22, 2012

PROJECT TITLE: Purchase 2 Solar Bees for Ponds

PURPOSE *(check appropriate category)*:

- ☒ Open Space
- ☐ Affordable Housing
- ☐ Historic Preservation
- ☒ Recreation

NAME OF APPLICANT: Community Preservation Committee

Check one: ☒ Town Committee or Department ☐ Public Charity/Not-for-profit ☐ Private Group/Individual

ADDRESS: 2500 State Highway Eastham Ma 02642

TELEPHONE: 508-255 1944 FEDERAL TAX ID NBR *(if not-for-profit)*: _____

EMAIL: tomje@CEXT.com WEBSITE: _____

NAMES OF GOVERNING BOARD, TRUSTEES, DIRECTORS, OR MEMBERS:

_____

_____

SUBMITTER or PROJECT DIRECTOR (Name, address, phone number): Tom Johnson, Chair

_____

FUNDING AMOUNT REQUESTED FROM CP FUNDS: $ 135,000

Please address the following questions *(see Guidelines for Project Submission, over)*:

1. Project description and specific objectives for the project.
2. How does this project accomplish the goals of the CPA?
3. How is it compatible with the Town's Comprehensive Long Range Plan?
4. How does this project impact Eastham's citizens and address current need(s)?
5. What is the estimated or target number of people this project will benefit/affect?
6. How will you measure the success of this project?
7. Projected Action Plan and Timeline: List the steps needed to complete the project.
8. Provide a full budget including the following information, as applicable:
   a. Total budget for the project.
   b. Additional revenue sources including private/ public/ in-kind.
   c. Annual costs/ expenditures once the project is operational.
   d. Annual cost to the town once the project is operational.
   e. Potential revenue from the project on an annual basis.
   f. What is the basis for your budget? What are the sources of information you used? Include three (3) cost estimates/competitive bids.
   g. Financial sustainability -- how will the continuation of the project be secured after the grant?
9. Are there any legal ramifications/impediments to this project? What permits/variances will be needed?
10. If this project entails work done on property owned/controlled by another entity, do you have the authorization of the property owner?

Please submit **12 copies** of all project materials to the attention of the Chairperson of the Community Preservation Committee, Eastham Town Hall, 2500 State Highway, Eastham, MA. 02642

(see over for additional information)