



TOWN OF FALMOUTH

WATER QUALITY
PLANNING AND PROJECTS



Today is: Wednesday, March 12, 2014

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Eco-Toilet Projects:

Official contract documents, once approved by the Board of Selectmen, are at the bottom of this page.

Falmouth Eco-Toilet Demonstration Program Begins!

Falmouth is providing a subsidy of up to \$5,000 to homes and businesses willing to participate in the Eco-Toilet Incentive Program. This Program will evaluate the real contribution that eco-toilets can make, and the real cost of installation. To be part of the Program, homeowners or businesses must replace or remove all of their standard flush-type toilets with eco-toilets of the composting, urine diverting, or combination type. Data from this study will be used to assess how much nitrogen and phosphorus is removed by eco-toilets, and costs for this level of nutrient reduction.

Read an [Overview of Eco-Toilet Technology](#) to familiarize yourself with the main categories of systems available. If you would like to see a comprehensive display of eco-toilets, and learn more about these remarkable systems, The Green Center has recently set up the Eco-Toilet Center at Alchemy Farm, 233 Hatchville Road, East Falmouth.. It is open to the public every Saturday morning from 10 to 12. The Green Center is a local non-profit environmental organization under the leadership of Hilde Maingay and Earle Barnhart.

Background:

You may remember that at Town Meeting in April 2011, Matt Patrick successfully introduced an amendment to Article 17 to include \$500,000 for "demonstration and related studies" of eco-toilets and denitrifying septic components as one among several demonstrations of alternatives to sewerage. In May, voters approved Article 17 by a 2-1 margin. The WQMC has worked together with other citizens, and staff to design the first phase of this work, the Eco-toilet Incentive Program.

Why Eco-toilets?

Eco-toilets remove at the source – your toilet – the human "waste" that contains most of the nitrogen and phosphorus that enters your septic system. A composting toilet stores the human "waste" and processes it through biological action into compost that can then be removed and used as fertilizer or soil conditioner. Most types of composting toilets are not

The Comprehensive Wastewater Management Plan (CWMP)

The [July 2012 Comprehensive Wastewater Management Plan \(CWMP\)](#) is the start of a planning and implementation effort for ALL of Falmouth's estuaries. This first CWMP includes Little Pond, Green Pond, Great Pond, Bournes Pond, Eel Pond, Waquoit Bay and West Falmouth Harbor watersheds. Plans are also being developed for the remaining estuaries!

Read the Executive Summary to get an overview of the solutions proposed for removing nitrogen from these first seven watersheds. The "Overall Planning" link to the left gives a history of how we arrived at these solutions.



Benefits of Water Quality Planning:

Keeps our waters clean and healthy

Enhances the economic success of our community

Preserves the beauty and value of our property for future generations

connected to your septic system at all. A urine diverting [UD] toilet connects to the septic system. It removes only the urine [which contains most of the nitrogen and phosphorus in human waste] and stores it for pick-up and processing into fertilizer. The remaining bio-solids end up in your septic system with the grey water from washing clothes, dishes, showers and similar uses. A composting toilet can have a urine-diverting capability, and several varieties of special eco-toilets also exist for certain situations.

Eco-toilets eliminate or sharply reduce water for flushing, use very little energy, and make recovery of nutrients for fertilizer easy. They eliminate the costs of piping and central plant construction associated with all central systems, municipal or cluster. They are expected to have very low maintenance cost. In new construction and where retrofits are not too difficult, we confidently expect them to save money over any other waste disposal system that is able to meet TMDL goals.

Installing and maintaining eco-toilets, together with resource recovery, are expected to create more local jobs than other technologies. They can be deployed rapidly with no disruption of roads and other public areas. Eco-toilets are inherently resilient and very adaptable to changes in population, climate and sea level rise. Finally, we hope to show that proper processing of human waste from eco-toilets is a cost-effective way to reduce or entirely eliminate the problem we have that a large percentage of the pharmaceuticals we humans take are ending up in our waste as harmful pollutants.

Goal of the Eco-Toilet Program:

The project's single primary goal is to establish a basis in fact for use of eco-toilets in Falmouth's Comprehensive Wastewater Management Plan. To show that eco-toilets can fit within this new CWMP plan framework, we must accomplish four objectives:

- Mass DEP must certify eco-toilets as nitrogen removal technologies and establish the credit for Total Maximum Daily Load [TMDL] requirements.
- We must document costs.
- We must gain higher public awareness of how eco-toilets work.
- We must understand all the permitting and regulatory barriers to full implementation.

How does the Program Work?

The Town provides a financial incentive to encourage volunteer owners of residences and businesses to install eco-toilets. Once eco-toilets are installed, the BCDHE will sample the nitrogen content of the effluent of each participating septic system before and after, over a period of a year or more. These data, combined with installation, operating and maintenance costs will be used to calculate expected dollar costs per pound of nitrogen removed. This information will also be used to

establish nitrogen-removal credit for the CWMP.

Participants must agree to several requirements that are outlined in the application. Participants will also receive a free pump out of their septic tank. The purpose of these requirements is to ensure that the Town will be able to rigorously evaluate this important alternative to centralized sewers.

This incentive does not prohibit a participant from obtaining a zero-interest loan under the Barnstable County's Septic Loan Program (provided they meet the qualifying criteria for that program) or for obtaining a tax credit for the replacement of their septic system under the Commonwealth's Tax Credit (provided they qualify for that credit).

Parallel to this demonstration project, the Town will be working to inform the wider public about eco-toilets, to resolve regulatory issues, to assist in setting up processing and marketing facilities for the urine and bio-solids collected from eco-toilets, and to calculate the value of environmental and social (jobs) benefits from use of eco-toilets.

For more information, or to join the Program, please contact us!

Email: wgmc@falmouthmass.us

Phone: 508.495.7327

Links:

[Application for Subsidy](#)

[Standard Installation Contract](#)

[Program Checklist](#)

[Memorandum of Agreement \(MOA\)](#) with Barnstable County Department of Health and Environment (BCDHE) for data collection and analysis

[Eco-Toilet Subcommittee](#)

Background and Minutes