**STEPS HOMEOWNERS CAN TAKE TO PROTECT LONG POND**

**1. Maintain your septic system.**

Septic system failure can have a significant negative impact on a pond. According to the U.S. EPA, those continuing to use a conventional septic system can take the following steps to reduce the risk of failure:

1. Have your septic system inspected and pumped every 2-3 years.
2. Don't flush chemicals or medicines down the toilet. Bring hazardous waste to the Barnstable Transfer Station on collection days.
3. Don’t use “flushable wipes”. Flush bodily waste and toilet paper, and nothing else!
4. Use phosphate-free household cleaning products.
5. Don't use a garbage disposal. Throw out or compost food waste.
6. Don’t drive or park heavy equipment over the septic system or build structures over the absorption field.
7. Plant grass or only shallow-rooted plants over the field.

Look out for these signs of system failure:

* Water and sewage are backing up into the home
* Bathtubs, showers and sinks drain very slowly
* You can hear gurgling sounds in the plumbing system
* There is standing water in the drain field
* There are algal blooms in nearby ponds or lakes
* There are high levels of nitrates and/or coliform bacteria in water wells.

 **2.  Plant a Cape-friendly landscape.**

Ponds are protected when rainwater that flows over the land is slowed and redirected by plants. In addition, anywhere that rainwater enters the soil and absorbs into plant roots, important filtration and chemical changes occur removing pollutants.

Native plants along the shoreline and in shallow water are important for a healthy ecosystem. Not only do they prevent erosion and provide cover for small fish, amphibians and birds, but submerged plants also absorb excess nutrients in the water and add oxygen, thereby reducing cyanobacteria growth.

Click on the following link for APCC’s Guidelines for a Cape-friendly Landscape:

<https://apcc.org/shop/guidelines-for-cape-friendly-landscapes/>

And on this link for a list of native plants species suitable for Cape Cod:

<https://capecodnativeplants.org/>

**3.  Refrain from using fertilizers, pesticides and herbicides.**

Fertilizers, pesticides and herbicides, even if they are organic contain phosphorus and nitrogen which reach our pond and contribute to cyanobacteria overgrowth. See the Town of Barnstable regulations and recommendations at this link: [Town Regulations](https://barnstablewaterresources.com/dos-and-donts-of-the-town-of-barnstables-fertilizer-nitrogen-and-phosphorous-control-regulations/)

Colonial "harmony mix" grass seed from Lavoie horticulture is a native, drought resistant species that can grow without fertilizers once established.  It is available at Agway, and at:
[**https://lavoiehorticulture.com/seed-products/**](https://lavoiehorticulture.com/seed-products/)
Other good options are clover and fescue.

 **4. Consider installing an Innovative / Alternative (“I/A”) Phosphorus-Reducing Septic System.**

I/A’s which remove phosphorus are currently in the “pilot” stage in Massachusetts. The Massachusetts Alternative Septic System Test Center (“MASSTC”) is testing several different systems. The cost of these systems varies widely, depending on the model selected and the home’s septic plan. Some units are retrofittable (using the existing tank, leach field and/or chamber) and others are a complete replacement of the home’s existing system. After installation, two years of monitoring is conducted and funded by MASSTC.

To date, four phosphorus-reducing septic systems have been installed in Massachusetts. One of them is the Waterloo EC-P. This system is mostly retrofittable, and therefore has a low installation cost. Preliminary test results also show that it is very effective in removing phosphorus. More information is available at <http://www.masstc.org/> and from FoLPMM board members.

 **5. Consider installing  a urine diverting toilet or urinal, composting toilet or incineration toilet.**

People produce about 90 gallons of urine per year. Urine contributes 55% of the phosphorus entering groundwater from septic systems. If we can separate urine from other waste via a urine diverting toilet or urinal and collect it in a storage tank, we can greatly reduce the amount of phosphorus available to cyanobacteria.

There are several different types of urine diverting toilets, with varying levels of sophistication and cost:

* A teapot effect toilet bowl makes urine travel a different path than water and allows collection in a holding tank. Urine diversion is invisible to the user.
* A split bowl toilet allows urine to flow down a receptacle in the front of the bowl, and feces and toilet paper down the back as they normally would.
* A waterless urinal carries urine from the urinal to a holding tank in the basement our outside.
* A “nun’s cap” (specimen collector used in hospitals) is the simplest and least expensive option
* The “Cubie” is a plastic portable waterless unisex urinal.

More information on these options is available at: <https://newalchemists.net/welcome-to-nutrient-recycling/>

Composting toilets use little or no water. Waste travels from the toilet via a pipe to a holding tank where it decomposes naturally into humus. Phoenix composting toilets have been installed in a home in Cotuit. They resemble conventional toilets and are waterless, odorless and hygienic. The holding tank, located in the home’s basement, holds composted waste for as many as 10 years before needing to be emptied. Click on the following link to see a video of this toilet in the Cotuit home: <https://vimeo.com/358170118>

Incineration Toilets
Incineration toilets are manufactured in Norway by a company called Cinderella.  These toilets require no water supply or sewage connection.  Waste is incinerated at high temperatures, leaving only a minimal amount of sterile ash.  Four people using the toilet for a week will only produce about one teacup of ash. More information can be found at: <https://www.cinderellaeco.com/us-en/products>