Keeping Water Local at Riverbend

Demonstration Project #7: Greywater and Wastewater Alternatives

A key tenet of “keeping water local” is to use on-site approaches to managing the wastewater and/or greywater that the facility will generate. (Greywater is water from sinks, washing machines, and dishwashers, but not from toilets.) Riverbend Demonstration Project #1 used high efficiency toilets to minimize the water used and the amount of wastewater produced; this is beneficial from a water conservation standpoint, and will also help prolong the life of the on-site septic system.

An even better approach, from a water resource protection standpoint, is to use a composting toilet that uses little or no water and generates no wastewater. The technology for doing so ranges from very simple and relatively inexpensive, self-enclosed composting toilets to more complex designs with separate composters. Some waterless toilets are available that incinerate the waste, but we also want to minimize energy use, so our preference is for a system with low energy requirements.

Greywater can be treated through a filtration system, and then reused, or it can be used for irrigation purposes. Typically, the Massachusetts Department of Environmental Protection requires a greywater system to be able to fully utilize the greywater throughout the year; thus a system that depends on irrigating outdoor plantings may need a small leachfield to accept the greywater during non-growing season.

**Riverbend Demonstration Project:** While the existing building at Riverbend is already connected to an approved Title 5 septic system, we are also planning to build a Visitor Center, for which we would like to use an alternative wastewater and greywater system. The Visitor Center will have two bathrooms, each with a composting toilet and a sink connected to a greywater filtering system. There will be a small kitchenette, which will also be connected to the greywater system. This system will treat the small quantities of water generated by the Visitor Center, and discharge the water in planter beds.

The foam-flush composting toilets will discharge to a composter located downstairs from the bathrooms. The facility will produce only small amounts of compost, and requires little maintenance.

This is a “state of the art” system that is designed to accommodate large groups of up to 125 people. The preliminary cost estimates for this project total $34,500, including design and permitting, all the components of the foam flush toilets, composters and greywater system, construction of the planter beds, and installation. However, far less expensive options for residential use are available and approved for use in Massachusetts.

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