

Maintaining Your On-lot Septic System

A properly designed, installed, and maintained on-lot sewage disposal system can provide years of trouble-free service.

Updated: May 14, 2021



This wastewater system consists of a sand mound for effluent absorption with a septic tank in the foreground where you can see the access panel. Photo: Peter Wulffhorst, Penn State

If you live in a rural area in Pennsylvania, it is likely that your home is not connected to a central sewer system. On-lot wastewater treatment and disposal may be the only means of disposing of the wastewater flowing from toilets, sinks, and appliances within your home. Pennsylvania law requires you to obtain a permit from your local municipality before you repair or construct a building for which a sewage disposal system will be needed.

A properly designed, installed, and maintained on-lot sewage disposal system can provide years of trouble-free service. Properly operated on-lot systems also allow recycling of treated water into the ground, an environmental benefit.

An on-lot wastewater system is a three-stage treatment system consisting of a treatment tank (most commonly a septic tank), a distribution system (the pipes), and a soil absorption area. In short, the treatment tank removes most of the solids from the wastewater, the distribution pipes distribute the treatment tank effluent as uniformly as practical to the soil absorption area, and the soil absorption area receives the liquid effluent where it can be absorbed into the soil and renovated.

Properly designed on-lot septic systems provide adequate treatment and disposal of liquid household wastes. In spite of the efforts of regulators and contractors to properly design and size these systems, on-lot systems may still malfunction. A malfunctioning on-lot system results in sewage backup in the household, and untreated sewage causing smelly, unhealthy wet spots in your yard and possibly contaminating groundwater. Although contaminated groundwater may be out of sight, it is important since nearby drinking water wells, possibly even your own, and nearby streams can become contaminated.

A common reason that septic systems fail is when the soil is not capable of absorbing all of the wastewater delivered to it by the sewage system, called hydraulic overloading, and the drainfield becomes clogged due to the development of a slime layer or bio-mat created as a result of persistent wet conditions in the absorption area.

In addition to requiring costly repairs, malfunctioning systems can contaminate surface and ground waters, cause various health problems and create unsightly messes and foul odors when raw sewage surfaces or backs up into the home. On-lot systems not only treat and dispose of domestic sewage from toilets, they also receive wastewater from various other household fixtures, including baths, showers, kitchen sinks, garbage disposals, automatic dishwashers and laundries. Conserving water and reducing the amount of waste flow from these household activities is an important step to ensuring long-term use. The more water using devices in a household, the greater the burden is on the on-lot system.

Every homeowner can take a few simple steps each year to assure that the system will remain trouble-free and to prevent unsanitary and costly septic system failures. These include keep oil and grease out of the system, keep harsh chemicals and acids (pesticides, disinfectants, paint thinner, medicines, some cleaners) out of the system, have the septic tank pumped at least every 3-5 years, depending upon tank capacity and usage and reduce solids including disposable diapers, cigarettes, sanitary napkins and solids from garbage grinders from going into your septic tank.

For more Extension articles on on-lot septic systems, go to [Wastewater Management](https://extension.psu.edu/water/wastewater-management) (<https://extension.psu.edu/water/wastewater-management>) at the Penn State Extension website.

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