

Contact: Sandra Fallon, National Environmental Services Center, The Water We Drink

Phone: 304-293-6897; **Email:** sfallon@mail.wvu.edu

Article Release Date: September 2014

Word Count - Article and References: 1,260

Maintaining Septic Systems Can Help Community Residents Save Money and Protect Local Waters and Public Health

Many resources are available for educating septic system owners in your community.

By Sandra Fallon, National Environmental Services Center

Are there homes, businesses, or schools in your area that use septic or other onsite wastewater treatment technologies? If so, your community is not unique. About one-quarter of the U.S. population uses septic systems, and at least 10 percent are estimated to fail every year; up to 70 percent fail in some communities. Regular maintenance is the single most important step for ensuring that a system continues working over time.

If properly installed and maintained, septic and other onsite systems are effective in treating domestic wastewater from bathrooms, kitchen drains, and washing machines. But when these systems are ignored and not maintained, the wastewater may not be adequately treated. This can put community members' health at risk by contaminating nearby drinking water wells or lakes, streams, and rivers. Failing septic systems can cost up to \$7,000 or more to repair or replace—much more than the \$300 or \$400 it would cost every three-five years to have the system inspected and pumped out.

Often, the system owner may not realize that they're responsible for maintenance, or that doing so can save thousands of dollars over the long-term and help protect the investment in their home. They may not know where to go for information or assistance. Failure to maintain their system can cause pollution to enter rivers, streams, or lakes and kill native plants, fish and shellfish—which are issues of concern for the entire community. Local education efforts can help stem these negative impacts. Many communities across the country are implementing homeowner outreach and education programs to remind residents of their responsibility for maintaining the septic system.

How a Septic System Works

In a conventional septic system, wastewater flows from a household or other establishment through a pipe to a watertight container that's buried underground in the yard, usually a concrete, fiberglass, or polyethylene tank. As the wastewater sits in the tank, the solids in the water settle to the bottom (forming sludge), and lighter materials, such as oil and grease, float to the top (forming a scum layer). The remaining liquid wastewater flows out of the tank through a pipe and into a drainfield. This liquid is referred to as septic tank effluent.

The typical drainfield is a shallow, excavated area, also in the yard, usually consisting of trenches with perforated pipes, and gravel or other porous materials that are covered by a layer of soil. The effluent flows into the perforated pipes and spreads throughout the drainfield, then percolates down into the soil where microorganisms remove contaminants and impurities.

(There are many alternative designs to the conventional septic tank and drainfield system for use in areas where the soil may not be suitable or the underground water table is too shallow.)

Septic maintenance involves periodically removing (pumping out) the contents of the tank and inspecting the drainfield, and should be done by a licensed septic system professional. If too many solids build up in the tank, the incoming wastewater does not have time to settle, and the solids can escape into the drainfield and clog the soil pores, inhibiting the soil's ability to treat the effluent.

Resources and Strategies for Educating the Public About Septic System Maintenance

The U.S. Environmental Protection Agency's (EPA) *SepticSmart* (<http://water.epa.gov/infrastructure/septic/septicmart.cfm>) is a nation-wide public education effort that offers free, downloadable resources about proper system maintenance to help system owners make decisions about their wastewater management needs. SepticSmart's *Local Outreach Toolkit* (<http://water.epa.gov/infrastructure/septic/local-outreach-toolkit.cfm>) resources are especially designed for local government leaders to promote these messages in the community.

The EPA reports that local education programs about septic system care and maintenance have helped improve local water quality, meet system owners' desire for information about taking care of their systems, and increased the number of people having their systems pumped and using other best practices. Some example programs are below:

University of Minnesota Onsite Sewage Treatment Program. These workshops, offered to homeowners in Minnesota, inform participants about the need to properly maintain septic systems and what's acceptable to put down the drain. As a result, area water quality has improved, and the workshops have made it clear that "people who own septic systems are hungry for information on how best to take care of them." Participants indicated that an overabundance of misinformation about septic systems has been circulating among homeowners. See http://water.epa.gov/infrastructure/septic/upload/SepticSmart_casestudy_Minnesota508.pdf

Sewage and Wastewater Elimination Education Program (SWEEP) in Licking County, Ohio. To address new septic system regulations in Ohio, the Licking County Health Department conducted an outreach effort and workshops to educate homeowners on the importance of system maintenance. Results indicate a significant increase in septic system maintenance awareness and in the number of systems being pumped. The Health Department "learned that homeowners are indeed interested in maintaining their septic systems, but need guidance on its importance and the steps to take for proper upkeep." See http://water.epa.gov/infrastructure/septic/upload/SepticSmart_casestudy_SWEEP508.pdf

King County Wastewater Education Program, Washington. This wastewater education program to teach the public about how daily decisions affect water quality resulted in residents being "surprised that they can make a big difference in their water systems with small behavioral changes and different choices," such as how to keep dangerous chemicals out of wastewater and what not to flush down the toilet. See http://water.epa.gov/infrastructure/septic/upload/SepticSmart_casestudy_KingCo508.pdf

Groups across the U.S. have used a variety of approaches in their education programs, such as direct mail, workshops, house calls, media advertising, and posting information on webpages. More information about successful case studies can be found in the SepticSmart [Local Outreach Toolkit](http://water.epa.gov/infrastructure/septic/local-outreach-toolkit.cfm) (<http://water.epa.gov/infrastructure/septic/local-outreach-toolkit.cfm>).

Broadcasting public service announcements (PSAs) is another good way to raise awareness about sound septic system operation and maintenance. The National Environmental Services Center's (NESC) 30-second *Lifestyle PSA's* (<http://www.nesc.wvu.edu/subpages/psa.cfm>) point out the importance of system maintenance for protecting waterways and property values. They are free to download and can be posted to your website or distributed to local television stations for broadcast.

If you want to talk to an expert about septic system and onsite wastewater issues, a good place to start is NESC's toll-free telephone line at 1-800-624-8301 or email info@mail.nesc.wvu.edu. You'll be put in touch with one of NESC's technical specialists who can help answer questions. Be sure to check out *NESC's website* (<http://www.nesc.wvu.edu>) where you'll find free issues of *Pipeline Newsletter* (<http://www.nesc.wvu.edu/pipeline.cfm>). Each issue focuses on a single wastewater topic presented in an easy-to-read format. It's especially popular with small community officials, citizens, and community educators.

Start Now! Join Other Communities Across the Country for EPA's Second Annual SepticSmart Week

To help drive home the message that proper care and maintenance are key for keeping a septic system working over time, the EPA hosts an annual [SepticSmart Week](http://water.epa.gov/infrastructure/septic/septicmart.cfm) (<http://water.epa.gov/infrastructure/septic/septicmart.cfm>) to focus the nation's attention on this important issue. The 2014 event runs from September 22-26. Be sure to check out the free resources available on the [SepticSmart website](http://water.epa.gov/infrastructure/septic/septicmart.cfm) for encouraging homeowners and communities to care for and maintain septic systems, help reduce impacts on water quality, and save money. What better time than now to join other communities across the country in raising awareness about septic system maintenance!

References

National Environmental Services Center. (Summer 2004). "Septic Systems: A Practical Alternative for Small Communities." *Pipeline: Small Community Wastewater Issues Explained to the Public*, Vol. 15, No. 3. http://www.nesc.wvu.edu/pdf/WW/publications/pipline/PL_SU04.pdf

U.S. Environmental Protection Agency. SepticSmart Website. (Accessed September 2014). <http://water.epa.gov/infrastructure/septic/septicmart.cfm>

U.S. Environmental Protection Agency. Water: Septic (Onsite/Decentralized) Systems Website. (Accessed September 2014). <http://water.epa.gov/infrastructure/septic/FAQs.cfm>

About the National Environmental Services Center (NESC): NESC (www.nesc.wvu.edu; 800-624-8301) offers free information and services including a website, technical assistance via

telephone and email, educational resources, and magazines and newsletters addressing water and wastewater issues for small and rural communities, tribes, and water systems.