



Installation of a non-gravel system in North Carolina

## Decentralized Wastewater Management Program Highlights

“Adequately managed decentralized wastewater treatment systems are a cost-effective and long-term option for meeting public health and water quality goals, particularly in less densely populated areas.”

- EPA's 1997 Response to Congress on Use of Decentralized Wastewater

### Public Health Benefits:

Proper use of decentralized systems mitigates the risk of disease transmission and human exposure to pathogens, which can occur through drinking water, surface water and shellfish bed contamination.

### Environmental Benefits:

Wastewater treatment removes pollution from surface water, recharges groundwater and replenishes aquifers.

### Economic Benefits:

Decentralized wastewater systems help communities reduce large infrastructure and energy costs involved in wastewater collection and treatment.

More than one in five homes in the United States is served by a decentralized wastewater treatment system. These systems collectively treat more than 4 billion gallons of sewage every day.

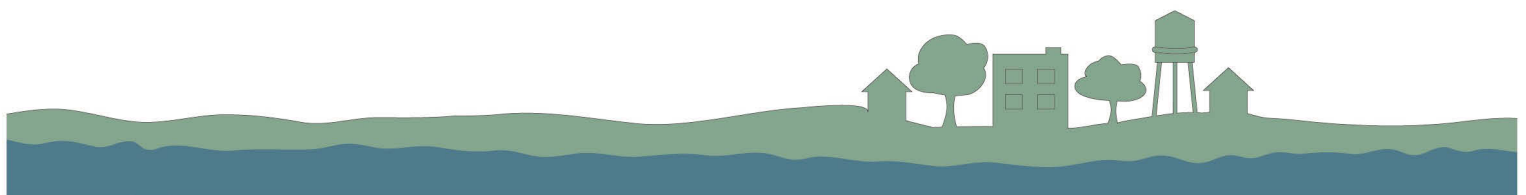
EPA's Decentralized Program promotes the proper management of septic systems and other types of decentralized wastewater treatment. Ongoing program features include:

- A **formal partnership** with federal, state and local government; academia; and industry representatives to provide information for local decision makers on the economic, environmental and health benefits of using onsite systems.
- **Tools to encourage appropriate design, operation and maintenance of**

**decentralized systems** for states, local government, local service providers and homeowners.

- **EPA's Five Management Models** describe system management approaches. These flexible models range widely in scope from local regulatory agency support for homeowner operation/maintenance (e.g., through inventories and service reminders) to programs that involve maintenance contracts, operating permits, and system operation by trained professionals hired by a responsible management entity.

The following pages elaborate on these initiatives as well as the program's 2013 accomplishments.



## Demonstration Projects

### Want to learn more?

#### Decentralized basics:

<http://water.epa.gov/infrastructure/septic/upload/MOU-Intro-Paper-081712-pdf-Adobe-Acrobat-Pro.pdf>

#### Economic benefits:

<http://water.epa.gov/infrastructure/septic/upload/MOU-Economics-Paper-081712.pdf>

#### Environmental benefits:

<http://water.epa.gov/infrastructure/septic/upload/MOU-Green-Paper-081712-v2.pdf>

#### Human health benefits:

<http://water.epa.gov/infrastructure/septic/upload/MOU-Public-Health-Paper-081712.pdf>

EPA has worked with communities in more than 25 states to demonstrate various types of decentralized wastewater demonstration projects. Projects can demonstrate decentralized technologies, management programs, or education and training.

**La Pine, Oregon** - This project demonstrates innovative nitrogen removal technologies in combination with understanding ground water flow and nitrate fate and transport assessment. The project also offered assistance to the community in developing local ordinances and a management program.

**Ephesus, Virginia: Education and Training** This project develops and implements an education and citizen training model program for underserved communities. The goal is to improve septic system knowledge among indigent people and improve local health departments' awareness of their wastewater needs.

**WAWTTAR: Cost-Estimating Program** - This tool, prepared by Humboldt State University, assists with planning water and wastewater treatment systems, including those utilizing wastewater effluent reuse. The cost-estimating program was designed to be used at the pre-feasibility step in facility planning or infrastructure investment.

**Certified Installer of Onsite Wastewater Treatment Systems** - This credential program is designed to test the knowledge, skills and abilities needed for successful installation of an onsite wastewater treatment system. The National Environmental Health Association has worked with various partner groups to develop this national program to certify installers of onsite wastewater treatment systems.

## Collaborative Partnerships with the Public and Private Sectors

For more details, visit our Septic Systems page at <http://water.epa.gov/infrastructure/septic/>

Click on the "Partners" tab to see a list of our partners.



EPA and 16 organizations partner via a Memorandum of Understanding to improve management and performance of decentralized systems. The MOU confirms the commitment of EPA and its partner organizations to encourage proper management of decentralized systems and increase collaboration among EPA, state and local governments, and decentralized system practitioners and providers. Partnership activities include:

- Use of EPA's Model Program for Onsite Management in the Chesapeake Bay Watershed
- Webcasts about the Department of Housing and Urban Development's Community Development Block Grant for septic upgrade or replacement, and on the MOU papers highlighting decentralized wastewater treatment system benefits
- SepticSmart Week, during which partners sent out materials to memberships via social media, and published print and online articles
- Collaborating to support data sharing around technology verification for advanced treatment systems
- Attendance at and contribution to partners' conferences

## Engaging in Effective Public Outreach



U.S. Environmental Protection Agency

In 2013, EPA launched SepticSmart Week to offer simple tips to help homeowners maintain their septic systems. These tips enable homeowners to extend the life of their systems and avoid common causes of failure.

Malfunctioning systems are currently the second greatest threat to groundwater quality in the United States and can cost homeowners tens of thousands of dollars to replace if not properly maintained.

You can find the toolkit of outreach materials for homeowners, local governments and other stakeholders at [www.epa.gov/septicmart](http://www.epa.gov/septicmart). A [Tribal guide](#) is also available in PDF form.

**SepticSmart Week 2014 is Sept. 22-26.**



Septic Sam is the official mascot of EPA's SepticSmart program.

## Model Program to Assist State Septic Programs in Managing Water Quality Impacts in the Chesapeake Bay Watershed

On June 28, 2013, EPA released a model program for onsite wastewater treatment systems in the Chesapeake Bay watershed. This program seeks to improve water quality by helping states more effectively prevent nutrients from entering the Bay from onsite or septic systems.

This is part of EPA's effort to collaborate with state and local partners to reduce nitrogen pollution from onsite systems. It also helps implement an executive order that President Obama signed in 2009 that recognized the Chesapeake Bay as a national treasure. The order called on the federal government to lead a renewed effort to restore and protect the nation's largest estuary and its watershed.

Learn more about the executive order at <http://executiveorder.chesapeakebay.net/>.



## Case Study: The Water Purification Center

In the spring of 1997, EPA responded to a request from Congress to assess the benefits, costs and applicability of decentralized wastewater treatment technology and management as a means of addressing water quality problems. In a landmark report, “Response to Congress on Use of Decentralized Wastewater Treatment Systems,” EPA wrote that “[a]dequately managed decentralized wastewater systems are a cost-effective and long-term option for meeting public health and water quality goals, particularly in less densely populated areas.”

The EPA report set the stage for a number of initiatives at the federal level to support advancements in the field and provide guidance to state and local officials and experts. For example, in 1999, Congress began funding a series of National Community Decentralized Wastewater Demonstration Projects, with 21 sites designated at funding levels ranging from \$700,000 to \$5.5 million. These demonstration projects were intended to “jump start” technology transfer of improved treatment methods and management approaches. They were selected to provide a diversity of climate, soils and ecosystems while focusing on various aspects of innovative technology and management.

The Rodale Institute was selected as a site to demonstrate the effective use and treatment of water resources, including rainwater collection for toilet and urinal flushing, and constructed-wetland treatment of wastewater. EPA views this particular project, completed in 2013 and now referred to as the Water Purification Eco-Center, as an important opportunity to educate diverse audiences, including municipal officials, watershed management groups, interested individuals affiliated with the Rodale Institute, and the general public about the benefits of decentralized wastewater treatment.

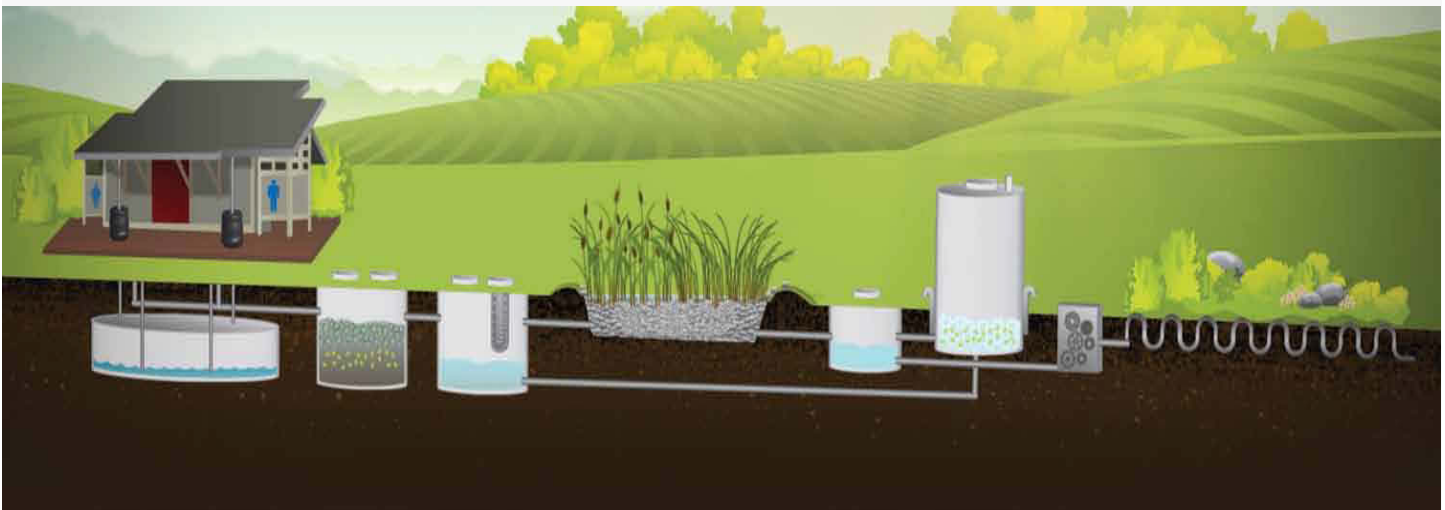


Diagram of the system. Photo courtesy of The Rodale Institute accessed from <http://rodaleinstitute.org/our-work/water-purification-eco-center/>.

For more information, please visit:

<http://water.epa.gov/infrastructure/septic/>