



Ohio Department of Health Bureau of Environmental Health

Sewage Treatment Systems Ohio's Decentralized Wastewater Infrastructure

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KEY FACTS

- *There are more than a million household sewage treatment systems (HSTS) in Ohio today and more than 25 percent of the new homes being built in Ohio will use individual HSTS.*
- *More than 100 local health districts permit as many as 20,000 new and replacement HSTS for homes in Ohio every year.*
- *Chapter 3718 of the Ohio Revised Code became law in 2005 governing HSTS and small flow on-site sewage treatment systems (SFOSTS) jointly referred to as sewage treatment systems (STS). Though much of this law has been postponed until July of 2009, definitions for STS and the option for local boards of health to assume authority for SFOSTS were not suspended.*
- *Section 737.11 of Amended Substitute HB 119 (the biennium budget bill enacted June 30, 2007) established the Household Sewage and Small Flow On-Site Sewage Treatment System Study Commission to study HSTS and SFOSTS issues, recommend appropriate legislation for the purpose of the treatment of sewage and the prevention of public health nuisances, and consider economic impact, alternative technology, and funding sources and mechanisms for providing assistance to homeowners.*

A significant number of Ohio neighborhoods have homes with failing household sewage systems. Property values and resale potential for all homes in these areas can drop to a level where residents may be unable to sell their homes or may not achieve the expected equity gains if they do sell their homes. Building new sewer plants or accessing centralized sewers seldom serve as realistic or affordable solutions in many of these neighborhoods.

Resale of homes in areas with STS infrastructure should not be a risky venture for buyers, sellers, lenders and realtors. Replacements for failing household sewage systems and systems permitted for new homes need to be properly sited, designed, installed and maintained. With the proper management of new and replacement systems, a sustainable infrastructure can be established in Ohio's unsewered communities.

Health Risks

While one STS failure may cause only minimal pollution, the effect of a million individual systems across Ohio does have a cumulative impact. It can be a significant pollution problem and is a public health risk. Improperly designed systems in very permeable soils allow both pathogens and nutrients to enter our ground water. Improperly designed systems in shallow soils, very slowly permeable soils and saturated soils threaten our surface waters and in many cases create public health nuisance conditions.

Systems need to be maintained and operated in a manner that will prevent people, pets and insects from coming into contact with sewage or poorly treated effluent. The risk of having direct contact with household sewage is not an unlikely occurrence in many neighborhoods. Given an estimated failure rate of 25 percent, coupled with the periodic discharges from temporarily inoperable mechanical systems, up to 900,000 gallons of sewage is discharged daily throughout Ohio, creating the conditions for potential disease transmission.

Surfacing sewage or pooled effluent from discharging systems can be an ideal breeding place for mosquitoes, including those known to carry West Nile virus. There are many human illnesses associated with sewage, including typhoid fever, gastroenteritis, cholera, dysentery, infectious hepatitis, aseptic

meningitis and encephalitis. To prevent these and other related diseases, it is important to eliminate contact with sewage. Even though pathogens are transmitted by this direct contact, there is an even greater risk of disease transmission to the general public through contamination of our drinking water.

Protecting Community Health

Failing systems often result in nuisance conditions that devalue properties and neighborhoods. The less visible effects of surface water and ground water contamination from the improper siting and management of household systems can have far reaching community impacts. Just a few examples from around Ohio include:

- Leach lines contaminating private water wells in a Butler County subdivision
- Dry wells contaminating private water wells in Coshocton County
- Homes with failing systems polluting Rocky Fork Lake in Highland County and Buckeye Lake in Fairfield, Licking and Perry counties
- Household systems polluting private wells outside Chillicothe in Ross County
- A gastrointestinal outbreak affecting more than 1,400 visitors and residents of South Bass Island in Ottawa County due to contamination of ground water from failing sewage systems.

Such problems are sometimes resolved through the extension of public water or sewer service, at a high direct cost to the local homeowners and an indirect cost to the general public through use of tax dollars to fund these projects. A review of state data show that nearly a billion dollars has been spent in recent years to extend sewers to areas of failing systems and surveys of Ohio communities indicate that another billion dollars is needed. The Ohio EPA estimates there are more than 1,000 communities across Ohio with high densities of failing systems.

Many reports, surveys and studies conducted in Ohio over the past two decades have identified problems and recommended action. A study completed in 2001 surveyed almost 700 household systems in Northeast Ohio. At least one in eight and as many as one in five soil absorption systems had surfacing sewage. At least one in five and as many as one in three discharging systems produced cloudy and odorous effluent. This study found significant sources of direct contact with household sewage, but did not address the additional risk factor of potential ground water or nearby surface water contamination.

Finding Solutions

Some have suggested that the cost for alternative systems and replacement systems is too great, and would place an undue burden on homeowners. What must also be considered is the cost to Ohio citizens for cleaning up our drinking water, reduced property values in communities with failing systems, and replacement of failing systems with expensive centralized sewer systems. New home construction financing should assimilate the cost for appropriate household sewage systems, and financial resources are available to assist homeowners in the repair and replacement of failing systems.

New law and rules do not immediately address the existing systems in Ohio. Over a period of time, failing systems will be identified through property transfers, nuisance complaints or operational inspections in those local health districts that conduct such programs for existing systems. When repair efforts cannot restore a failing system, an appropriately sited and designed replacement system should be installed and maintained to protect the financial investment made and to prevent a continuing cycle of failure.

ODH is committed to working with our public health partners and the many other interested parties involved in finding solutions to the complex issue of managing our STS infrastructure in Ohio. Solutions must include consideration of the long-term health of our communities that will never be served by centralized sewer systems. There is a need for improvement in siting, design, installation, operation and maintenance of an expanding decentralized wastewater infrastructure serving Ohio's communities.

Additional Information

For more information on STS contact the ODH Bureau of Environmental Health at 614-644-7551 or at BEH@odh.ohio.gov