Groundwater, and the Waters of our Fragile Lakes, Rivers, and Streams are Subject to Contamination by Failing Residential Septic Systems

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by Scott Brown
MWA E- Newsletter Editor

Attributed to the fact that Michigan continues to be the only state within the United States of America that has not yet enacted a state-wide law requiring regular septic system inspections, and to the fact that only eleven out of eighty three, or 13% of counties in Michigan have enacted local regulations that require regular septic system inspections, hundreds of thousands of failing septic systems continue to be a major source of e-coli and human fecal bacteria laden raw sewage that contaminates ground water, and renders the waters of many our lakes, rivers, and streams unfit for total contact water sports such as swimming or snorkeling. The steadily escalating environmental and public health associated problem is derived from that fact that approximately 20%, or 280,000, of the 1.4 million septic tanks that were constructed in the 1950's and 1960's throughout Michigan are now failing. The problem has also been exacerbated by the fact that many Michigan homes, and their now severely antiquated septic systems were built prior to the construction of sewer systems that now serve even the smallest of towns and villages.

Septic systems, otherwise known as on-site wastewater disposal systems, are designed and installed in order to manage and treat the waste generated by toilets before it reaches ground water. In a properly designed septic system, the septic tank serves to remove larger solids from wastewater. Wastewater that flows out of the septic tank is saturated with contaminants that must be removed before the water can safely be combined with surface and/or groundwater. Public health issues stem from the fact that septic tank effluent contains large concentrations of toxic micro-organisms that are capable of making people sick. Moreover, the organic matter present in wastewater effluent creates bad odors, and contains algae growth stimulating nutrients (nitrogen and phosphorus) that can have a negative impact on aquatic ecosystems. Properly designed septic systems include a disposal field comprised of a mixture of sand, silt, and clay that are often referred to as loamy soils that act to successfully treat bacterial and

inorganic compounds. Phosphorus that is produced within the household that passes through the septic tank is also captured within a properly designed disposal field's soil. On-site wastewater disposal systems continue to be installed in support of residential and commercial development that occurs in rural settings where sanitary sewer systems are not available. According to Michigan State University Extension, when an on-site wastewater disposal system is correctly located, properly designed, carefully installed, and properly maintained, they are capable of serving as effective waste disposal systems that are economical and that do not pose a threat to public health or to the fragile ecosystems of surrounding streams, rivers, and lakes.

Michigan's on-going failing septic system crisis is best exemplified by Kent County where a volunteer only septic system inspection program allows an estimated 11, 250 failing residential septic systems distributed throughout the county to leak approximately one million gallons of raw sewage into vulnerable groundwater supplies each day. In inland lake inundated Oakland County, as another prime example, where public health threatening cases of e-coli contamination of rivers and lakes are reported on a more and more frequent basis, and where county officials have also yet to establish a program that would mandate regular septic system inspections, approximately twenty-five to thirty percent of the 100,000 septic systems located in Michigan's most affluent county are known to be leaking. The gravity of the situation is also effectively illustrated by the fact that the results of a 2015 study conducted by Michigan State University researchers on sixty-four Michigan rivers revealed that concentrations of e-coli that were higher than U. S. Environmental Protection Agency permitted water quality standards. The significance of the issue is also amplified by the fact that the Michigan Department of Environment, Great Lake, and Energy (EGLE) reports that approximately one half of Michigan's thousands of miles of rivers and streams suffer from concentrations of toxic e-coli that exceed minimum water quality standards.

Representing a major environmental and public health issue that promises to escalate in significance as increasing numbers of septic systems fail and begin to leak with the passage of time, past efforts to enact legislation that would have established a meaningful statewide standard for how septic tanks are designed, built, inspected, and maintained have sadly disintegrated in the face of arguments suggesting that in addition to treading on individual property rights, regulating septic tanks in a manner that would require regular inspections and maintenance would be too costly for homeowners, over burden local health departments, and make it more difficult to sell homes.

Currently under consideration by Michigan's state legislature, the latest attempt to establish a statewide septic code comes in the form of House Bill 4479 and House Bill 4480, and Senate Bill 299 and Senate Bill 300. The proposed legislation seeks to mandate periodic septic system inspections, and would require homeowners to repair septic systems that are identified as faulty. The proposed legislation also mandates the

creation of a statewide septic system inspection tracking database, and also would establish a septic system inspector certification program.

For more information on how failing septic systems are capable of degrading our precious freshwater resources, visit the U. S. EPA's web page entitled "How Your Septic System Can Impact Nearby Water Sources" . The always wise, inland lakes preservation focused folks from northwest Lower Michigan's Glen Lake Association have also created a septic smart webpage that contains valuable information regarding the proper maintenance of septic systems.