## **Educational Corner—Submitted by Seth Phillips**

WHAT'S THAT CEMENT TANK BURIED BEHIND OUR HOUSE?

Flush! For most of us that's the last time we think about where that goes. If you live in an urban area, that pipe takes your bathroom, kitchen and bath waste water to the local waste water treatment plant to be treated and then returned to our surface waters. But for over 35% of Michigan residents, local sanitary sewers aren't available. Most of us rural folk depend on using our single use domestic septic system -- a tank and a drain field. Drain field as in percolates into the groundwater from where we get our drinking water and which eventually discharges to local rivers and lakes. But how many of us ever think about how these work or what we send into them that won't get treated. This map shows you the density of septic systems in the Lower Peninsula. (Note the very high density in the suburban areas of Southern Michigan.)



Credit: Michigan State University

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It turns out that septic systems have been a significant source of human fecal contaminants to our rivers and lakes. And no one knows what else we discharge to our precious waters from these systems because no one has ever looked. But it's a problem. How do we know? Dr. Joan Rose at MSU, one of the nation's leading experts in this field, conducted a study of 64 streams in the Lower Peninsula looking for human sourced fecal bacteria. (you can check for sources using a complex analytical technique called digital drop pcr (polymerase chain reaction)). Her study found that every single surface water stream sampled showed the presence of human sourced fecal bacteria. Most exceeded established human body contact standards at some time. The MSU study estimated that at least a third of the 1.3 million septic systems in Michigan are failing. And her study isn't the only one to show this. In rural areas there is only one possible source for these results--septic systems that are not working properly. Septic discharges to our streams may contain human pathogens, nutrients that can harm our waters, household product chemicals or discarded or excreted pharmaceuticals. No one knows. The two maps show the levels of fecal coliform and a human source tracking concentration in all the sample areas. Levels are high in some places.

So how does this happen? Michigan is the only state in the nation without a statewide septic code that regulates septic systems after they are installed, that's how. While there are regulations on the design and installation of septic systems, you must get a health department permit to put them in, with just a few exceptions. There is no regulation to make sure they are properly maintained and in working order after installation. A few communities (11 at last count) have adopted local controls. Most of these are what are called point of sale or time of sale or transfer ordinances. That is, when a property is going to be sold, the septic system must first pass an inspection. While these programs do catch some systems in need of repair or replacement, if you aren't selling your property, you can ignore your system (if you even have one) forever, or at least until it fails and you have sewage backing up into your house or a stinky swampy mess on the ground surface above your drain field. Then a several thousand-dollar repair bill is in your future. Maintenance, regular pumping of the tank and care in what you put into the system works and can save a lot of money later. But how do we get everyone to do this? How can we find the systems that need attention? By requiring all septic systems to have regular inspections and repair those that need it.

Not surprisingly, environmental interests in Michigan have been trying to address this problem for years but it has not been easy. Requiring regular inspections and repairs of over a million septic systems is an enormous task. There aren't money or people to take it on. Realtors do not like the point-of-sale approach as it make them the "septic police" and can interfere with sales. Most local governments and health departments look at the daunting cost and level of local regulation necessary to fix this problem with apprehension. Bills have been introduced in the Legislature several times over the last decade to create a statewide approach with no success. However, there is hope on the horizon.

With the change in majority leadership of our legislature last fall, there may just be the critical mass we need to pass badly needed legislation. The band is back together again with a lot of members: the Michigan Environmental Council, FLOW (For Love of Water), the League of Conservation Voters, The Sierra Club, Tip of the Mitt Watershed Council, The Watershed Center –Grand Traverse Bay and the Michigan Resource Stewards are all working together with friendly legislators, relator groups and local health departments to try to craft bills that can pass. The most difficult part of course is crafting a way to fund it. There is a \$35 million low interest loan program that was enacted last year to help homeowners who can't afford repairs to pay for them. This program should hit the ground this spring. But funding a statewide inspection program will take a lot more money. We are working on it. So, if we are lucky, by the next retirees' newsletter we can report that the State in the nation identified with the most water has taken these vitally important steps to protect them for the future.