City of Whitefish
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STUMPTOWN Scoop
City of Whitefish
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SEPTIC SYSTEMS

A key component to healthy communities, dating back to Roman society, is the treatment of household wastewater. Nationwide, septic systems serve 1 in 6 households. Because of the more rural setting in Montana, roughly one half of the households have a septic system. Septic systems can offer an effective on-site wastewater treatment solution, but like all infrastructure, they have a finite life expectancy.

Typically, septic systems last for 25 to 30 years when the structure fails, or the drainfield soils lose their capacity to treat effluent. When this happens, human pathogens and nutrients such as phosphorus and nitrogen may leak into surface water or groundwater putting human health and aquatic life at risk.

Suspected septic leachate contamination in Whitefish Lake was reported in a study conducted by the Flathead Lake Biological Station in the mid-1980s. In 2012. the Whitefish Lake Institute (WLI) published a study that confirmed the presence of septic contaminants at several shoreline locations. The issue has existed for over 30 years, and as more septic systems age and fail, our clean drinking water is at risk.

In response to this ongoing threat to water quality, the Flathead Basin Commission (FBC) recently undertook an effort using a Geographic Information Systems (GIS) model to assess the density and age of Flathead County septic systems using the septic permit database. The model overlays physical risk factors such as depth to groundwater, soil suitability, slope, and distance to surface water.

Preliminary data from the FBC model shows roughly half of the permitted septic systems in the basin are older than 30 years. The model effort is currently working on estimate of even older non-permitted systems predating permit requirements that began in 1978. The model's preliminary data corroborates the areas of concern on Whitefish Lake identified by the 2012 WLI report.

While water quality monitoring identifies the presence of septic leachate in waterbodies it does not identify the source of the contaminants. To solve this question, WLI and FBC are partnering with Cornell University to conduct a Synthetic DNA study in 2022. Synthetic DNA tracers are benign and have a unique signature that will allow the research team to pinpoint contamination sources in the upland area.

WLI is also participating on a team funded by a National Science Foundation Smart & Connected Communities grant to explore solutions to the septic issue. The group will host a septic leachate summit in May 2022 at the Flathead Lake Biological Station. Experts from across the nation will be invited to share information and develop solution strategies.

The solution strategies are complex. Traditional engineering solutions include replacement of the septic field (if there is space on the property), upgrading to a Level II system, neighborhood or communal systems, or connection to municipal waste services. Underlying the engineered solution is the complex interplay of personal perception and opinion, cost, jurisdictions, and inconvenience.

The science is clear. This issue has not gone away and will only get worse. We as a community will need to define our stewardship legacy. Will we take the steps to tackle this complex issue, or will we kick the can down the road for future generations to address?

Mike Koopal, Executive Director
Whitefish Lake Institute

WHAT CAN I DO?

1. Pump your tank regularly. Regular pumping prevents solids from clogging the drainfield. The tank should be pumped every 3 to 5 years depending on use.
2. Conserve water. Use water-saving fixtures and conserve water in the kitchen, bath, and laundry to reduce the amount of wastewater the soil must absorb.
3. Repair or replace leaky fixtures. Leaky fixtures add excess water to the drainfield; fixing them promptly will reduce the amount of water the soil must absorb.
4. Maintain proper cover and landscape over the drainfield. Make sure the drainfield is covered with grass to prevent soil erosion. A crowned drainfield and surface swales will prevent excess surface water from entering the trench. Also, make certain that gutters, downspouts, patios, walkways, and driveways do not divert water on to the drainfield or septic tank.
5. Limit what goes into the septic tank. Things like diapers, coffee grounds, cigarette butts, kitty litter, hygiene products, cooking oil, and grease do not decompose may end up blocking the drainpipes. Solvents, cleaning fluids, paint, motor oil, gasoline, or other chemical substances kill the beneficial bacteria in the tank and soil. Please don't treat your septic tank like a dump, dispose trash in an appropriate manner.
6. Do not drive or build over any part of your septic system.
7. Have the septic pumper inspect the system components at the time of pump out. Check for signs of problems that can be corrected before a failure occurs.
8. Monitor your system. Watch for toilets, showers, tubs, or washing machines draining sluggishly, standing water around your septic tank or leach field, or an awful smell in any of these areas. It's time to get your tank pumped! Please, do not wait before it's too late!