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Planning & Development Services

Septic Smart

What Is A Septic System?

If you live in a rural area or a small community or if you have a cottage, chances are you have a septic system. Septic systems are onsite treatment units used in place of municipal sewers in rural areas. Anything that goes down the drain – every shower drip and every toilet flush – flows to the septic system. Septic systems are comprised of a tank, a network of pipes and billions of organisms that process your waste.

How Does It Work?

The most common septic system consists of a septic tank and leaching bed – all of which is hidden beneath the soil.

All household wastewater exits your home through an underground pipe that leads to the buried septic tank. The waste flows to the first compartment of the tank where the heavy solids settle and the lighter materials (fats, oils and grease) float to the top as scum. Baffles and screens keep this scum layer from escaping the tank and flowing to the leaching bed. This scum is removed when the tank is pumped during regular maintenance.

In the second compartment of the tank, finer particles settle to the bottom. Organic materials break down in the tank. On newer systems, any remaining organic material is trapped and decomposes on a screen called the effluent filter located at the outlet of the tank. As of January 2007, effluent filters became mandatory on all installations and upgrades in Ontario.

From the tank, the effluent moves to a leaching bed made up of a network of perforated polyvinyl chloride (PVC) drain pipes. Stone and a layer of unsaturated native soil or imported sand surround these pipes. The effluent flows to the leaching bed either by gravity or a pump depending on the site conditions. The leaching bed's perforated PVC drain pipes disperse the effluent, allowing the liquid to seep into the ground where bacteria and other organisms process the wastewater further. Soils below the stone in the trench bottom act as a biological, chemical, and physical filter to remove most remaining organic biological contaminants.

In Ontario, Part 8 of the *Ontario Building Code* governs nearly all rural septic systems. If you are installing, repairing, upgrading or replacing such a system, you must contact the City of Quinte West for the necessary permit and inspections.

Your Class 4 Rural Septic System

Most rural homes use a Class 4 septic system as required in the *Ontario Building Code*. A Class 4 septic system uses a septic tank along with a leaching bed or a filter bed. The same bed types can look very different from site to site as the specific design is based on flow volumes from the house, space available in the yard, topography, soil material and depth to bedrock and/or other issues related to the property such as proximity to surface water and groundwater.

What Could Be Hiding Underground?

You could have some very old technology working for you. In the past, steel tanks, cinderblock tanks or poured-in-place concrete tanks were used. Septic system technology is consistently changing and improving. Today, septic tanks are either pre-fabricated concrete or plastic.

Since the mid-1970's, septic tanks are required to have two compartments. Old tanks may only have one compartment.

Today's pipes used in leaching beds are plastic, but in the past clay tiles, asbestos pipes and non-corrode pipes were used. Today's spacing for leaching bed pipes is 1.6 metres (5.25 feet) but you may find only 0.9 metre (3 Feet) spacing in older systems.

If you find these old features, it doesn't mean your system isn't functioning properly, but it certainly indicates its age and that it may not be working to today's standards.

Septic Systems And Your Health

There are many contaminants in wastewater that can affect your health and the environment. They include bacteria, viruses, parasites and nitrate. If contaminants reach your drinking water supply, they can cause disease or other health or environmental problems.

A properly functioning septic system will remove most contaminants to acceptable levels. However, treated wastewater that percolates through the soil may contain contaminants that can enter the groundwater table. To reduce the risk to nearby ground or surface water supplies, the location of your septic system is crucial.

There are legislated minimum separation distances required between your septic system and your home and well, neighbouring homes and wells and nearby bodies of water. Respecting these distances and planning your lot accordingly will lead to a healthier, longer-lasting system.

Why Should I Maintain My Septic System?

Did you know that septic systems are the responsibility of you the homeowner? It is up to you to keep your system working properly to protect your environment, your health and your investment.

When properly designed, constructed and maintained, a septic system should provide long-term, effective treatment of your household wastewater. If you take good care of your system, you will save yourself the time, money and worries involved in replacing a failed system. Failed systems can be hazardous to your health, the environment and your pocketbook. It can degrade water supplies and reduce your property value. Below are some valuable tips to ensure the longevity of your system.

DO:	DON'T:
<ul style="list-style-type: none"> • Familiarize yourself with the location of your system • Keep the tank access lid secured to the riser at all times • Keep an as build system diagram in a safe place for reference • Keep accurate records of septic system maintenance and service calls • Test your well water at least three times a year – spring, summer and fall – for indicator bacteria • Have your tank inspected for sludge and scum buildup on a regular basis (3-5 years) and clean out when a third of the depth of your tank is full of sludge and scum • Have your effluent filter checked and cleaned every year; if you don't have an effluent filter, consider adding one • Divert surface water away from your leaching bed • Conserve water in the house to reduce the amount of wastewater that must be treated • Repair leaky plumbing fixtures • Replace inefficient toilets with low-flush models • Consider installing a lint filter on your washing machine's discharge pipe • Spread the number of loads of laundry throughout the week 	<ul style="list-style-type: none"> • Enter a tank – gases and lack of oxygen can be fatal • Put cooking oils or food waste down the drain • Flush hazardous chemicals, pharmaceuticals, cigarette butts or sanitary products • Use garbage disposal unit/garburator unless your system has been designed for it • Use special additives that are claimed to enhance the performance of your tank or system – you don't need them! • Dig without knowing the location of your leaching bed • Drive or park over your tank of leaching bed • Pave over your leaching bed • Allow livestock on the leaching bed • Plant trees or shrubs too close to the septic tank or leaching bed • Connect rain gutters, storm drains, sump pumps or allow surface water to drain into a septic system • Connect leaching bed or greywater system to agricultural field drainage • Discharge water softener backwash to the septic system unless your system has been designed for it • Drain hot tub and spa water to the septic system

ASK TO SEE THE LICENSE!

Anyone in the business of pumping and cleaning septic tanks must be licensed by the Ontario Ministry of the Environment.

Anyone who installs, repairs or services septic tanks must be licensed by the Ontario Ministry of Municipal Affairs and Housing.

What Happens When There's A Problem?

Septic systems have a lifespan of approximately 15-40 years. To maximize the lifespan of your system, follow the "Do and Don't" list.

A malfunctioning septic system is easy to see...and smell. If you suspect you have a problem with your septic system, it is important to fix the problem quickly. A malfunctioning septic system is a risk to your environment and your health. It can quickly contaminate groundwater and surface water used as drinking sources.

If you think there's a problem, start by having the septic system inspected. The tank may just need a cleaning. However, if there is a problem with the leaching bed, you will want to speak to an onsite sewage system professional for their advice. Onsite sewage system professionals include installers, professional engineers, certified engineering technologist and registered sewage system designers. A second opinion is always recommended.

If a homeowner has a malfunctioning septic system, the big question is, "Do I have to replace the whole system?" Repairs can range from cleaning a few lines to replacing entire leaching beds and removing contaminated and clogged soils. An onsite sewage system professional should be retained. Their first task will be to determine the cause of the failure.

If repairs are required to correct your septic system problem, contact us to obtain the appropriate permit before proceeding.

New Technology

Alternative technology for treating wastewater for individual homes has been around since the 1970's. Only in the late 1990s did new technologies become more readily available thereby providing more choices for homeowners.

Sometimes alternative technology may be the only option. Conventional systems sometimes do not work on small lots, waterfront properties or when replacing systems in a confined area.

Alternative technologies may be required to reduce certain contaminants (e.g., nitrate) if your property is located in a vulnerable groundwater or surface water area as identified through local source water protection studies.

The research and development of alternative technologies have made it possible to produce an effluent of the same quality or even better than some large municipal treatment plants. Homeowners should not be afraid to consider new approved technology such as Aerobic Treatment Units (ATUs) and Media Filters. Your local onsite sewage system professional can help you select the right technology for your site.

Water Conservation

Water conservation is always a good thing. When it comes to your septic system, the more a household conserves, the less water enters the septic system. Efficient water use can improve the bacterial action of the septic system and reduce the risk of failure.

- Check for leaky taps and leaking toilets. Each small drip adds up
- Replace your inefficient toilets with a low-flush, high-efficiency or a dual flush toilet

- Use faucet aerators and high efficiency showerheads to reduce water use
- Take short showers instead of baths
- Consider purchasing a high-efficiency washing machine

- Wash full loads of laundry or use the appropriate water level or load size selection
- Consider water-efficient models when replacing your dishwasher

If you have recurring potable water shortages and are building a new home, you may want to consider recycling your greywater. Greywater recycling collects wastewater from the bath, shower, dishwasher and washing machine. It is treated and reused for toilet flushing. Greywater is not to be used for drinking water or bathing. It is required to be disinfected to prevent fouling the system. A building permit is required to install a grey water system.

Other Information Sources:

- Municipal Building Department
- Ontario Ministry of Municipal Affairs and Housing
- Ontario Ministry of Agriculture, Food and Rural Affairs
- Ontario Ministry of the Environment
- Ontario Rural Wastewater Centre
- Canadian Mortgage and Housing Corporation
- Ontario Onsite Wastewater Association
- Ontario Association of Sewage Industry Services