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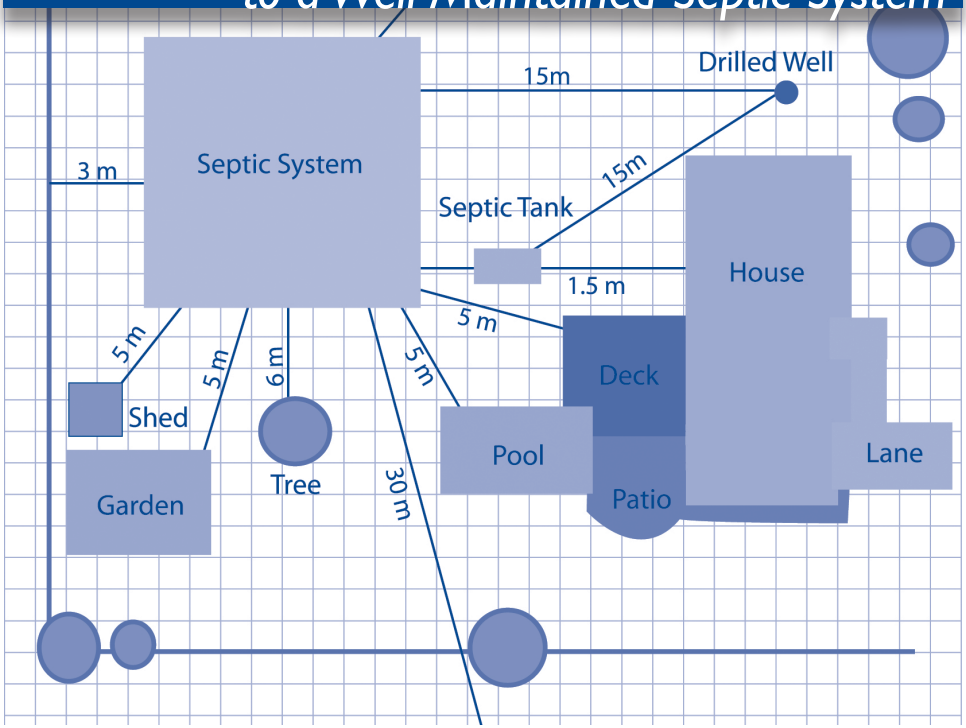
Genesee County Community Water Quality Consortium

A Genesee County Homeowner's Guide to a Well-Maintained Septic System



Not sure if you have a septic system? Here are some questions to help you find out:

- Do your neighbors have septic systems? If so, it is likely that you also have a septic system.
- Do you get a bill from your town or city agency charging for sewer services? If so, it is likely that you DO NOT have a septic system.

Protecting and improving the watersheds within and around Genesee County

Genesee County Drain Commission
Surface Water Management
4608 Beecher Road • Flint MI 48532

Phone: 810-732-1590
Fax: 810-732-1474
After Hours Emergency: 810-732-2940

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Congratulations on purchasing your new home!

The information in this booklet is designed to assist you, a septic system owner. Because your residence is connected to a septic system instead of a public sanitary system, you have the opportunity and responsibility to operate and maintain your own septic system. A properly maintained septic system positively influences the quality of our local water resources. By taking the useful, simple actions described in the following pages, small efforts at your residence can save you money and have large, lasting impacts on our lakes, rivers, and streams.

This guide will help you keep your septic system in working order. It will help you better understand how your septic system works and the steps that can be taken to keep a septic system functioning properly. Additionally, this guide provides you with the tools and resources to identify and fix a malfunctioning septic system.

Top 4 actions to ensure a septic system is properly maintained:

1. Inspect (every 3 years) and pump (every 3 to 5 years) your septic system.
2. Use water efficiently.
3. Refrain from dumping solids or hazardous household wastes down drains or into toilets.
4. Care for drainfields.

Why care about septic systems?

As a homeowner, you are responsible for maintaining your septic system. If your septic system is properly designed, built, and maintained, it can effectively treat your household wastewater, save you money, and keep our local water clean for many years. If a septic system is not properly maintained, a lot of costly damage could be done.

A malfunctioning septic system can…

- Cost thousands of dollars to replace or repair
- Make selling your home very difficult
- Lower your property value or pose legal liability
- Spread infection and disease
- Contaminate groundwater that might be a source of drinking water
- Pollute nearby lakes, rivers, and streams

Remember, a septic system is not the same as a municipal sewer system. Septic systems have a limited life expectancy that can be shortened by not monitoring and properly maintaining it.

How septic systems work.

Generally, septic systems have four main components:

Septic systems are also called:

- On-lot system
- Onsite system
- Individual sewage disposal system
- Onsite sewage disposal system
- Onsite wastewater treatment system

1. A pipe from your home

All the wastewater produced in your home exists through a pipe that leads to the septic tank.

2. A septic tank

Your septic tank is a watertight container that is buried somewhere on your property. Usually they are made of concrete, fiberglass, or polyethylene and hold your wastewater long enough to allow the different materials in your wastewater to settle or float to the top. Solids will settle to the bottom of the tank, while fats and oils will form a layer towards the top of the tank. Between these two layers is the wastewater. T-shaped outlets, holding compartments, and screens keep sludge, solids, and oils from leaving the tank and traveling to the drain field.

3. A drainfield

When wastewater exits the septic tank, it goes into your drainfield for further treatment by the soil. The partially treated water from your septic tank gets pushed farther into your drainfield with the addition of new wastewater into your septic tank.

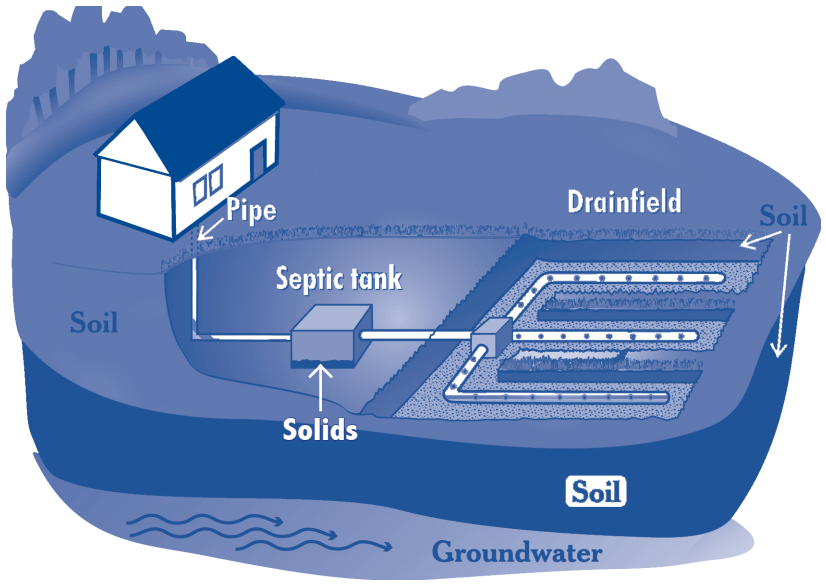
If your drainfield gets overloaded with too much liquid, from either overuse or a break in the system, it can flood, causing sewage to flow into groundwater. This creates backups in your plumbing fixtures and prevents treatment of wastewater.

4. Soil with digesting microbes

When septic tank wastewater flows into your drainfield, it percolates into the soil. High quality soil has many useful micro-organisms in it that digest harmful bacteria, viruses, and nutrients commonly found in wastewater. This process is very similar, although on a smaller scale, to the one that occurs at a municipal waste water treatment plant.

Do you know where your septic system is located?

You may want to consult with an inspector or septic pumper to help you find the location of your septic system..



In some situations, effluent from a septic tank will not be dispersed to a traditional drainfield. Alternative systems in use today include sand filters, mounds, wetlands, gravel-less drainfields, pressure dosing, and aerobic units. Servicing requirements for these systems vary and should be obtained from your local sanitarian or septic system contractor.

How to keep your septic system functioning properly.

You can keep your septic system functioning at its peak performance by following the four actions listed here.

1. Inspect and pump septic systems

Keeping up-to-date on a system's inspection and pumping schedule can help keep the system functioning longer and better.

Inspect regularly.

- Have a septic system inspected by a professional every three years. Systems with electrical float switches, pumps, and mechanical parts need to be inspected more frequently. Remember to keep track of system repairs and tank pumping with maintenance records (see page 9 of this guide).

What does an inspection entail?

- Locating the system
- Uncovering access holes
- Flushing the toilets
- Checking for signs of backup
- Measuring scum and sludge layers
- Identifying any leaks
- Inspecting mechanical components
- Pumping the tank, if necessary

Pump often.

- Pump septic tanks regularly, usually once every three to five years. If a pumper suggests repairs, do so as soon as possible but first check with the local health department to see if you need a permit.

Four factors influence the frequency that tanks should be pumped: number of people in a household, amount of wastewater produced, volume of solids in the wastewater (using a garbage disposal increases the amount of solids), and septic tank size.

Go natural.

- Stay away from additives and "starters". It is unclear if they actually help and some may harm your system and contaminate groundwater. Periodic pumping is a much better way to ensure a system functions properly.

2. Use water efficiently.

Excessive water use is one of the most common causes of septic system failure, so reducing water used for bathing, laundry, and flushing the toilet can greatly reduce the chances of system failure.

Go low flow.

- Install low-volume toilets and low-flow showerheads.
- Replace old dishwashers, toilets, and clothes washers with high-efficiency versions.
- Only run the dishwasher and clothes machine when there is a full load.

Maintain plumbing.

- Indentify and repair leaking pipes and dripping faucets to reduce water wastes.
- Check to make sure the toilet's reservoir isn't leaking into the bowl. Quickly check this by adding a few drops of food coloring to the reservoir before going to bed. Check to see if there is any trace of the food coloring in the bowl the next day.

3. Refrain from dumping household wastes down drains or into toilets.

The materials that go down drains or into toilets have a big impact on how well a septic system functions.

Avoid dumping.

- Keep from flushing non-biodegradable materials like facial tissue, diapers, tampons, plastic, cooking fats, or oils down drains or toilets. They do not decompose easily, or at all, and may cause unwanted build-up in a septic tank.
- Never dispose of chemicals by dumping them down drains. Chemicals will harm the micro-organisms in the soil of a drainfield.
- Keep the use of household chemicals and cleaners to a minimum. Consider using low cost, natural cleaning products. The products can be purchased at local grocery stores or made at home by combining one part water with one part vinegar.
- Dispose of hazardous household wastes properly. The county holds two hazardous household waste collection days-one in the fall and one in the spring.

Bypass the disposal.

- Stay away from using the garbage disposal unit. Excessive use of garbage disposals can increase the volume of solids in a septic tank, requiring more frequent pumping.
- Throw away or make compost out of vegetable wastes, coffee grounds, eggshells, and other compostable kitchen wastes.

Examples of Hazardous Household Wastes

- Batteries
- Pesticides/Herbicides
- Motor oil
- Solvents
- Oil-based paint
- Paint thinner
- Aersol cans
- Mercury
- Old prescription medicines

4. Care for the drainfield.

The drainfield is an important part of a septic system and its proper maintenance is critical for effective treatment of wastewater.

Discharge into the tank.

- Discharge all sewage waste from the house into the septic tank. Never allow solids or scum to leave the septic tank and enter the drainfield.
- Keep roof drains, sump pumps, rainwater, and other surface water drainage systems away from the drainfield. Flooding of the drainfield can slow down or stop treatment processes.

Plant grass and shallow roots.

- Landscape over the drainage field with dense grass cover and other shallow-rooted plants. Keep trees away from the drainage field. Deep roots will tear field pipes apart overtime.
- Avoid impermeable or compacted surfaces over the drainfield such as concrete, asphalt, plastic, or compacted soil. Compacted soil can damage pipes, the tank, or other components of a septic system.
- Keep the surface of the drainfield properly drained by slightly mounding soil over the drainfield and not stockpiling snow.

How to tell if a septic system does not work.

Thankfully, it is fairly easy to tell if a septic system is not working properly.

Signs of system failure include:

- Odors, surfacing sewage, wet spots, or lush vegetation on or near the drainfield
- Plumbing or septic tank backups
- Slow-draining fixtures and toilets
- Gurgling sounds in the plumbing system
- Buildup of aquatic weeds or algae in lakes or ponds adjacent to your home
- Pooling water or muddy soil around a septic system or in the basement
- Presence of nitrates or bacteria in a drinking-water well
- Septic systems also fail when partially treated wastewater comes in contact with groundwater. This type of failure can be difficult to detect and can result in pollution of nearby wells, streams, or other water bodies.

Common causes of system failure:

- Household hazardous wastes such as oil paints, solvents, and chemical cleaners dumped down drains
- Excessive use of household cleaners
- Draining a hot tub or pool into a septic tank or onto a drainfield
- Water purification systems that unnecessarily pump excess water into a septic system
- Frequent use of garbage disposals
- Improper design or installation

Expected costs for repairs and maintenance of your septic system:

- Inspecting a tank: less than $100
- Pumping: $185-$375
- Uncover the tank: $75-$200
- Pumping out a chamber: $10-$250
- Replacing a drainfield: $2,000-$10,000
- Engineering a drainfield: $10,000

If septic systems are not properly maintained, the entire system may have to be replaced, costing lots of money.

For your records: septic system layout and preventative maintenance table

Use this grid to map your septic system, showing the relative location of your septic tank and drainfield in relation to your house and water well.

Use this table to keep track of your system repairs and tank pumping. Remember to have your tank pumped every three years.

Date	Work Done	Firm Doing Work	Phone Number	Costs	Notes
03/2009	Inspection	Joe Plumber	555-5555	$75	Good job.

Helpful Resources

What to do if your system fails

Check with a septic system professional or the Environmental Health Division of the Genesee County Health Department if you suspect your septic system is failing. Remember to have your septic system inspected by a professional at least every 3 years!

Contact Information for the Genesee County Health Department:

Floyd J. McCree Courts and Human Services Center
630 S. Saginaw Street
Flint, MI 48502-1540
Phone: (810) 257-3612
Fax: (810) 257-3147

Consult your local telephone directory for a listing of professional septic pumpers, installers, inspectors, and tank manufactures.

Reporting

- Report illegal dumping of hazardous materials into storm drains, local water bodies, or drainage ditches to 911 or the local police.
- If you would like to report a flooding ditch not caused by a roadway, contact the Genesee County Drain Commission, Office of Surface Water Management at (810) 732-1590.
- If you would like to report flooding caused by a culvert under a road or flooding on a road, contact the Genesee County Road Commission at (810) 767-4920.

Household Hazardous Wastes

If you have household hazardous wastes that need to be properly disposed, look for one of the household hazardous waste collection days organized by the Genesee County Health Department and the Genesee County Michigan State University Extension.

General Information

- Genesee County Drain Commissioner's Office: http://www.gcdcwws.com
- Genesee County Health Department: http://www.gchd.us
- Genesee County Our Water Campaign: http://www.ClearGeneseeWater.org

Information for this septic system guide was gathered from the following resources and was adapted for the needs of the Genesee County *Our Water* Campaign.

- University of Minnesota Extension Service, Protecting our Waters: Understanding Shoreline BMPs. Factsheets.
- U.S. Environmental Protection Agency, A Homeowner's Guide to Septic Systems. Informational Guide, EPA-832-B-02-005, Dec 2002.
- Rouge River National Wet Weather Demonstration Project, DEMO Info: Septic Systems. Informational Handout.

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