

Maintaining Your Shoreland Septic System

What Are Shoreland BMPs?

Best Management Practices (BMPs) are actions you can take to reduce your impact on the environment. BMPs have been described for agriculture, forest management, and construction. This fact sheet describes BMPs you can adopt on your shoreland property to help protect and preserve water quality. In many cases, the best management for shorelands may be retaining the natural characteristics of your property.

Why Are Septic Systems a Problem?

In shoreland areas it is particularly important to maintain your septic system properly because soil and water conditions near shore may make the system less efficient in treating wastewater. Incomplete treatment can result in health risks for humans and water quality problems.

Potential health risks are the most serious concern related to failing septic systems. Hepatitis, dysentery, and other diseases may be spread by bacteria, viruses, and parasites in wastewater. These disease-causing organisms, called pathogens, may make nearshore water unsafe for recreation. Flies and mosquitoes that are attracted to and breed in wet areas where wastewater reaches the surface may also spread disease.

Many of the synthetic cleaning products or other chemicals used around the house can be toxic to humans, pets, and wildlife. These products may reach the ground surface or end up in the water.

Excessive nitrate levels in drinking water can result in serious health problems for infants. High nitrate levels in ground water can result from inadequately treated wastewater.

Inadequate treatment can also allow excess nutrients to reach your lake or stream, promoting algae or weed growth. Algal blooms and abundant weeds not only make the lake unpleasant for swimming and boating, but they also affect water quality for fish and wildlife habitat. As plants die, settle to the bottom, and decompose, they use up oxygen that fish need to survive.

How to Tell If There Is a Problem

THESE CONDITIONS INDICATE YOUR SEPTIC SYSTEM MAY BE FAILING

- **Sewage backup in your drains or toilets.** This may be a black liquid with a bad odor.
- **Slow toilet flushing.** Even if you use plungers or drain cleaners, drains may run slower than usual.
- **Wet areas or water seeping near drainfield.** It may or may not have an odor.
- **Excessive growth of aquatic weeds or algae in the lake near your home.** Incomplete treatment of nutrient-rich water seeping from your system promotes this growth.
- **Unpleasant odors around your house.** This may result from improper venting or a failing system.
- **Bacteria or nitrates are found in your well water.** This indicates a serious water contamination problem that

may come from your own or a neighbor's failing system.

- **Biodegradable dye flushed through the system shows up in the lake or river.**

Long-term BMPs

The only practical long-term solution may be to upgrade your septic system by redesigning and replacing part or all of it. This work must be done by a registered contractor or a business licensed to design and install individual sewage treatment systems. In many counties, a permit is required for all new construction and replacement.

When remodeling your home or cabin, be sure to expand the capability of your septic system to meet the new demands that will be placed on it. Also, be sure to preserve enough undeveloped space on your property for future expansion of the drainfield.

How to Keep Your System in Shape

Here are several BMPs you can follow to keep your septic system in good working order to protect your lake or river.

Household habits

- **Conserve water.** Excessive water use is the most common cause of septic failure, so reduce water used for bathing, laundry, and flushing the toilet.
- **Identify and repair** leaking pipes, sticking float valves in toilets, and dripping faucets to reduce water waste. A dripping faucet can waste 15-20 gallons per day.
- **Shorten shower times and choose showers over baths** to minimize wasted water. A full bath uses 50-60 gallons, while a shower uses only about 5 gallons per minute. Of course, a 20-minute shower is not a savings over a bath.
- **Install low-volume toilets and low-flow showerheads.** Typical toilets use 5-6 gallons per flush, providing nearly half the wastewater from a house. Flush toilets using 1 1/2 gallons of water are available.
- **Keep a container of drinking water in the refrigerator.** This saves having to run water until it's cold.
- **Use toilet tissue that breaks up easily when wet** to help prevent clogging. To test tissue quality, place a piece in a jar half full of water and shake. If the tissue breaks up easily, it is suitable. The color of tissue has no effect on septic system action.
- **Do not use the toilet as a wastebasket.** Don't flush facial tissue, diapers, tampons, or any kind of plastic down the drain.
- **Eliminate the use of garbage disposals.** Ground-up garbage does not decompose easily, causes rapid buildup of solids in the tank, and may move out of the tank into the drainfield, clogging distribution pipes and soil pores. If you have a disposal--don't use it. When building or remodeling--don't install one.
- **Never put coffee grounds down your drain.**
- **Dispose of household hazardous waste properly.** See fact sheet #14 for additional tips on reducing household hazardous waste.

For cleaning and laundry

- **Wash only full loads in the dishwasher.** Typical dishwashers use about 13 gallons for each wash. Newer models use 8-9 gallons.
- **Use low-phosphate dishwasher detergent.** In Minnesota, detergents may contain up to 11% phosphorus by weight; but some brands may exceed this level, so check the labels.
- **Wash only full loads of clothes and use front-loading washers and suds-savers to save water.** To avoid overloading your system, spread washing over the week instead of washing several loads on one day. A single load takes about 40 gallons.
- **Use liquid laundry detergent** because it's less likely to have fillers or carriers that may damage the septic system. Try to use the minimum amount because detergents can cause problems with the system.
- **Minimize use of household chemicals and cleaners.** Normal amounts of household detergents, bleaches, drain cleaners, toilet bowl deodorizers, and other cleaners won't harm bacterial action in the septic tank.

Maintain the septic tank

- **Discharge all sewage waste from the house into the septic tank.** Don't run wastewater from laundry or saunas directly into the drainfield as the detergent or soap scum will quickly clog soil pores and cause failure.
- **Do not add "starters" to your septic system.** Enough bacteria are available in the wastes flushed into the septic tank. Even after the tank has been pumped, enough bacteria will be provided when you use the system again.
- **Do not use additives in your system.** They are of no benefit and may harm the system. Additives that cause the accumulated sludge to increase in volume or float will result in sludge being flushed into the drainfield, plugging soil pores. Also, some additives, particularly degreasers, may be carcinogens that will flow into ground water with treated wastewater.
- **Pump the septic tank every year to remove solids and scum.** Although tanks away from lakes or rivers may not need it every year, annual pumping is excellent insurance near shorelines.
- **Remove the manhole cover when having the tank pumped** to make sure that all solids have been removed. The sludge in the tank should be mixed during pumping. A tank cannot be adequately cleaned through a 4-inch inspection pipe. Pumping through the inspection port may clog the outlet baffle with scum and grease.

Your Investment and Costs

It will cost \$250 to \$360 each time you have a septic tank pumped, but replacing the entire system and drainfield may cost from \$20,000 to \$30,000. Threats to human health and water quality increase if your septic system is not properly maintained.

If water quality in the lake deteriorates, property values are likely to decrease. In addition, if your on-site treatment system fails, you'll have the inconvenience of being unable to use household plumbing until the system is replaced.

Overall, your investment to properly maintain a septic tank and drainfield is minimal compared with the cost involved in repairing or replacing the system