

# Use and Operation

The effectiveness of a septic system in treating sewage depends on how the homeowner uses and operates the system. Water-use habits, fixtures and appliances, product selection, and septic additives and cleaners all affect how well a septic system works. The septic system operates every time wastewater enters the system.

## Water Use

The total amount of water and the pattern of water use affects how the septic system works. For complete and uniform treatment of wastes, the system needs time to work. The ideal situation would be to have wastewater enter the system as evenly as possible throughout the day and week. Every time water is used, waste-water enters the septic tank and an equal amount of water leaves the tank for the drainfield. Large volumes of water entering the system in a short period of time may agitate and re-suspend sludge and scum into the liquid contents. If this happens, suspended solids are carried into the soil treatment system, clogging soil pores and preventing adequate treatment.

Excessive water use puts an unnecessary load on the septic system. Allowing faucets to drip, fixtures to leak, and using running water to wash and rinse dishes, shave, and brush teeth are wasteful water habits. In most households, toilet flushing is the largest user of water, followed by bathing, laundry, and dishwashing.

One of the best ways to reduce the amount of water treated by the septic system is to replace old water-using appliances. If a major remodeling is planned, regulations may require upgrades to low water use appliances. For example, local government units may have adapted the new state building codes requiring low-flush toilets in new construction or when replaced by a plumber. Whether remodeling or not, consumers may choose low-flow showerheads, hand-held showers with pause control, and temperature control valves to reduce water use, save energy, and save money. The way appliances are used affects how much water passes through the septic system, as shown in the chart.

### Typical Ranges of Water Used (in gallons)

ACTION	TYPICAL USE	CONSERVATIVE USE	ULTRA-CONSERVATIVE USE
<b>Toilet-flushing</b>	6 (old standard)	1.5-3 (low-flow)	Composting toilet
<b>Tub bath</b>	30 (1/2 filled)	15 (1/4 filled)	Sponge bath
<b>Shower</b>			
10 min	50 (5 gal/min)	25 (2.5 gal/min)	3 (camper style)
3 min	15 (5 gal/min)	7.5 (2.5 gal/min)	
<b>Laundry - full load</b>			

Top loading	50-60 (older models)	40 (newer models)	
Front loading	33 (older models)	17-28 (newer models)	Laundromat
(suds-saver reuses most of the "wash fill" for the 2nd load)			

**Dishwashing**

Machine	12-15 (old-reg cycle)	6-9 (new-reg cycle)
(prerinsing before loading adds 3-5 gal.)		
Hand	16 (faucet rinse)	6 (basin rinse)

<b>Teeth-brushing</b>	2 (faucet running)	1/8 (wet brush, brief rinse)
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<b>Hand-washing</b>	2 (faucet running)	1 (basin; brief rinse)
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<b>Shaving</b>	3-5 (faucet running)	1 (basin; brief rinse)
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**Improving Septic System Performance: Room by Room**

*By controlling water use, selecting appropriate products, and making wise disposal decisions, the homeowner can improve performance of the septic system and avoid major problems!*

A typical Minnesotan uses about 110 gallons of water per day. About 60 percent of that water is used in the bathroom. Reducing water use conserves the water resources and helps the septic system.

In the course of daily living, many materials used in the home enter the waste-water system for disposal and treatment. Some are obvious and others much less obvious.

**Home Management Ideas to Improve Septic System Performance:**



**Bathroom**

- Install a new low-flow toilet. New units give a complete flush with 1 1/2 gallons per flush. Caution: displacing water with bricks or water bottles in old toilet tanks often gives less than a total flush.
- Repair leaky faucets and toilets immediately.
- Flush toilets less often. In many cases, the toilet can be used several times for liquid waste before flushing.
- Do not use "every flush" toilet bowl disinfectants that are placed in the tank or bowl.
- Do not flush facial tissues, paper towels, or personal hygiene products down the



over  
down

- Use moderate amounts of white toilet paper. Toilet paper should break up easily in water. Some dyes used for toilet paper are difficult for bacteria to break down.
- Take showers instead of tub baths. Showers use less water than tub baths (about 5 gallons per inch in tub).
- Take shorter showers.
- Install low-flow shower heads, hand held showers with pause control, and temperature balance valve controls.
- Shut off water in the shower while lathering and shampooing.
- Do not run the hot water in the shower to warm the bathroom.
- Reduce use of drain cleaners by minimizing the amount of hair that goes down the drain.
- Shut off water while shaving and brushing teeth (save up to 5 gallons per minute).
- Fill basin to wash hands instead of washing under running water.
- Reduce use of cleaners by doing more scrubbing with less cleanser.

toilet.

- Do not flush cigarette butts or unwanted prescription or the counter medications the toilet.

### Kitchen

- Install low-flow faucets.
- Repair leaky faucets.
- Keep a pitcher of drinking water in the refrigerator instead of running the tap every time to get cool water.
- Hand wash dishes in the basin instead of under running water.
- Wash only full loads in the dishwasher.
- Install low-water-use dishwasher; use liquid detergent in the dishwasher.
- Use low-phosphate (0 to 5%) dishwasher soaps.
- Use the minimum amount of soap necessary to do the job. This is often less than suggested by manufacturers.
- Do not use a garbage disposal or dispose of vegetables, meat, fat, oil, coffee grounds and other undigested food products in the septic system. (Use composting or garbage service.)
- Reduce the use of drain cleaners by minimizing the amount of grease and food particles that go down the drain
- Use minimal amounts of mild cleaners, as needed only.
- When using drinking water treatment devices, be sure there is a shutoff valve so the system doesn't run continuously when the reservoir is full. Some units may reject up to 8 gallons for every 1 gallon retained.

### Laundry



- level
- Distribute wash loads overloading the system with large volumes of water.
  - Install filter on washer to remove lint.
  - Use no-phosphate laundry detergents.
  - Use the minimum amount of detergent or bleach necessary to do the job. This is often less than suggested by manufacturers.
  - Use liquid detergents (powdered detergents add fine particles to the sludge accumulation).
  - Use highly biodegradable powdered detergents if liquid detergents are undesirable.
- Select a front-loading washing machine that uses 40% less water.
  - Use suds-saving top-loading washing machine to reduce water and detergent use.
  - Wash only full loads. Adjust load settings for small loads. evenly throughout the week to avoid

### Basement and Utility Rooms

- Recharge the water softener as infrequently as possible to reduce water use.
- Reroute the water softener recharge water outside the septic system. It does not need to be treated.
- Route chlorine-treated water from swimming pools and hot tubs outside of septic system to a ditch or separate dry well.
- Route roof drains and basement drainage tile water (sump pumps) outside of septic system and away from the drainfield.
- Dispose of all solvents, paints, antifreeze, and chemicals through local recycling and hazardous waste channels. Consult local solid waste officials for proper methods. These materials kill valuable bacteria in the system and may pass through to contaminate drinking water.
- Never let wash water from latex paint on brushes or rollers go down the drain and into the septic system.

## Septic Starters, Feeders, Cleaners and Other Additives

There is no quick fix or substitute for proper operation and regular maintenance. Do not use starters, feeders, cleaners and other additives.



**There's no such thing as a safe AND effective septic system additive.**



**Starters:** A starter is not needed to get the bacterial action going in the septic tank. There are naturally-occurring bacteria present in wastewater.

**Feeders:** It is not necessary to "feed" the system additional bacteria, yeast preparations, or other home remedies. There are millions of bacteria entering the system in normal sewage. If the bacterial activity level is

low, figure out what is killing them (for example, cleaners) and correct it. High levels of activity will return after the correction.

**Cleaners:** Additives effective in removing solids from the septic tank will probably damage the soil treatment system. Many additives suspend the solids that would normally float to the top or settle to the bottom of the tank. This allows them to be flushed into the soil treatment system, where they clog pipes and soil pores leading to partial or complete failure of the system.

**Other Additives:** Additives, particularly degreasers, may contain carcinogens (cancer-causing agents) that flow directly into the groundwater along with the treated sewage.

**Additives and cleaners are heavily promoted to homeowners through direct mail and telephone. Don't be misled!**