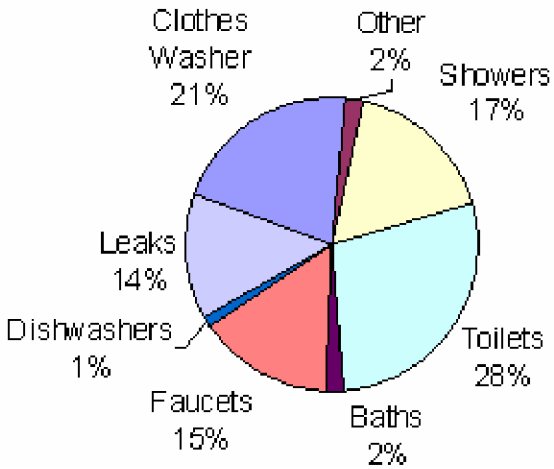
Typical Water Use (Per Person) In An American Single Family Home



(Source: AWWA Residential End Use Study, 1999)

Signs Of A Failing Septic System

1. House drains empty slowly.
2. Sewage backs up into the house.
3. Wet, smelly spots appear in the yard.
4. Your septic tank is piped to a ditch or stream.
5. Your washing machine or sink is piped to a ditch or stream.
6. When it rains, you have problems with drains.
7. When you do laundry, wet spots show up in the yard.
8. You have to pump your septic tank more than once a year.
9. The grass around the septic tank is greener than anywhere else.
10. The area around your septic tank or drainfield stays wet even when it hasn't rained recently.

Reasons That Systems Fail

Septic systems work because the ground absorbs water from the trenches. This water flows slowly through small channels and cracks between the soil particles. Naturally occurring soil bacteria clean up the waste during this process.

Gradual failure - As the system operates, bacteria in the septic tank digest most, but not all, of the solid matter. The undigested part sinks to the bottom of the tank in the form of sludge. If the sludge builds up too deep, it will flow out of the tank and into the fingers, where it can plug up the pores in the trenches and keep them from absorbing water.

Intermediate failure - Each septic system has a maximum amount of water that it can handle. If more water goes in than the system can absorb, either the system will quit working and back up into the house, or the water will find some other exit (usually to the surface of the ground). At first, this will only happen during rainy periods when the water table is high; later, the problem may become chronic. To avoid this type of failure, sources of excess water (sump pump lines, downspouts, pool drains, etc.) should not be connected to the septic system.

Rapid failure - If the ground is heavily compressed, the channels in the soil close up and water can no longer percolate into the ground. This type of failure occurs when a massive structure (swimming pool, driveway, patio, etc.) is built over the septic field, or when heavy vehicles are driven across the field.

Routine Maintenance

Most importantly, have your tank pumped out regularly. Yes, some people will tell you that they haven't pumped their tank in twenty years and their system still works fine, but you can't count on this. If the septic field fails, you will have to have another field installed, which costs thirty or forty times what a pumpout costs.

Estimated Tank Pumping Frequency in Years

Tank size (gallons)	Number of people in household		
	2	**4**	**6**
1000	6	2.5	1.5
1250	7.5	3.5	2
1500	9	4	2.5

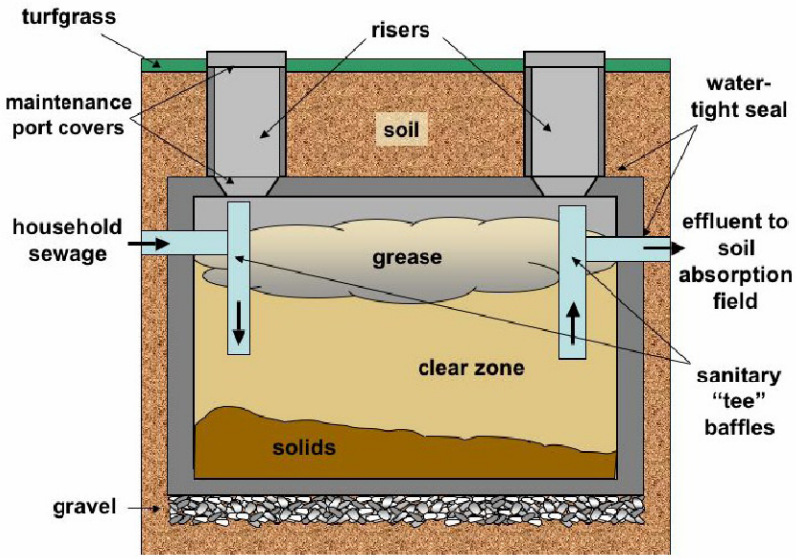
Especially if your system is small, limit the amount of water that goes into it. Use low-flow fixtures, run the washing machine and dishwasher only when they are full, and take short showers instead of baths. Water conservation is always important but particularly important during lengthy rains.

Try not to put extraneous material into the septic tank. If you have a garbage disposal, use it sparingly. Other than toilet paper, don't put paper products in the system at all. Avoid solvents, harsh cleaners, and disinfectants, which can all kill off the bacteria in the tank. The less you stress the system, the longer it will last.

How To Investigate What You Have

First, check with the Health Department. If your system is not too old, we may have a diagram of it in the file.

If there are no records of your system, start out by locating the septic tank and absorption field trenches with a soil probe.



Cross Section Of A Septic Tank

Compare the size of your system with a current system. These days, a modern system will have 167 linear feet of fingers for each bedroom in the house. (Be aware that sometimes houses have additions built onto them, but the septic system is not always changed to keep up with the larger house.) If your system is much smaller than the standard, you should devise a plan to keep from overstressing it.

The Boone County Health Department regulates all septic systems in Boone County, regardless of location. If a system does not work as designed, sewage can pond on top of the ground or drain to a creek or lake. These conditions degrade the quality of surface waters and can lead to the spread of diseases. The Health Department, therefore, strongly prefers to help homeowners keep their current system in good operating condition. We will assist with diagnosis and troubleshooting when systems have problems.

What Homeowners Should Know

Very old systems (>35 years)
Often have only a tank plus a tile which runs to a ditch. Such systems are illegal; when discovered, they have to be replaced.

Old systems (15-35 years)
These were usually installed to meet the minimum standards of the time. Compared to modern systems, old systems often have small septic tanks and absorption fields. The trenches are generally deep (three or four feet) in the ground and may not all be the same length.

Recent systems (<15 years)
If properly installed and maintained, they can last for decades. In Boone County, we usually expect systems to last about 30 years. Since it costs much less to maintain an existing system than to replace a failed one, homeowners have a strong financial incentive to keep their systems in good shape.

Troubleshooting System Failures

Common Problem 1
Water won't drain from toilets and sinks, or drains very slowly. This means that the system is not absorbing water as it should. First, check to see that the pipes leading to and from the septic tank and distribution box are clear. If these items are OK, the problem is in the fingers. It's possible that recent rains have filled up the trenches with water. If so, the system will work again when it dries out. If rain is not the problem, the trenches are probably full of sludge and have become water-tight, which will require a new absorption field.

Common Problem 2
Septic water (black and smelly) bleeds out of the fingers to the surface. The tank and pipes are probably all right, since the effluent is reaching the fingers, but it is not being absorbed by the trenches. First, try all possible water conservation measures – you may simply be overloading the system. Second, dig up and check the distribution box. It may be directing most of the water to one or two fingers, so part of the system is overloaded and the rest is underused. If these approaches don't succeed, you probably need a new absorption system.

Common Problem 3
The system won't take water and there's an alarm buzzer going off. This system has a dosing tank with a pump in it, and the alarm is telling you that the pump has failed. Replace the pump.

"This document was created in collaboration with the Eagle Creek Watershed Alliance, The Boone County Soil & Water Conservation District and the Boone County Health Department. For additional information please consult your local county health department or the Boone County Health Department at 765-483-4458."

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The Use and Care of Aging Septic Systems