

Title 5/Septic Systems

On-site wastewater disposal systems are systems that treat wastewater flows, usually under 10,000 gallons per day. On-site systems include conventional septic systems - a septic tank with a leaching field - and may include the use of innovative/alternative (I/A) systems. Over 30% of the homes in Massachusetts have on-site wastewater systems, as do small businesses and institutions that are located in un-sewered areas.

Title 5 of the State Environmental Code, [310 CMR 15.000](#), is a regulation that protects you and your community. Title 5 requires the proper siting, construction, and maintenance of all on-site wastewater disposal systems. On-site systems that are not properly located and maintained can contribute pathogens and nutrients to surface and ground waters, endangering drinking water supplies, wildlife habitat, and surface water bodies.

Title 5 General Information: Frequently Asked Questions

Who regulates septic systems?

Local Boards of Health are the primary regulatory authorities. However, MassDEP is involved in certain approvals, including many innovative/alternative technology approvals, shared systems, large systems and many variance requests. In addition, MassDEP is responsible for overseeing local implementation of Title 5 and provides local governments with training and technical assistance.

Your first contact for questions about septic systems should be your local Board of Health

When did Title 5 go into effect?

The most recent version of Title 5 ([310 CMR 15.000](#)) took effect on April 21, 2006.

What is the difference between a cesspool and a septic system?

A cesspool is a pit which acts as both a settling chamber for solids and a leaching system for liquids. The use of cesspools may overload the capacity of the soil to remove bacteria, viruses, and phosphorous, and to nitrify ammonia and organic nitrogen compounds. A conventional septic system has a tank where solids can settle and begin to degrade, a distribution box, and a soil absorption system (SAS) that further treats the effluent by removing some of the bacteria, viruses, phosphorous, and nitrogen.

Does Title 5 require every cesspool to be replaced?

No. Only those cesspools that exhibit signs of hydraulic failure, are located extremely close to private or public water supplies, or otherwise fail to protect or pose a threat to public health, safety or the environment will need to be upgraded ([310 CMR 15.303](#)).

Also, cesspools must be upgraded prior to an increase in design flow (e.g., the addition of a bedroom to a home or seats to a restaurant).

What is maximum feasible compliance?

The concept of maximum feasible compliance (MFC) is "do the best you can with what you've got." Wherever feasible, a failed system must be upgraded to full compliance with Title 5. If this is not possible, in many instances the local Board of Health is authorized to approve a Local Upgrade Approval that brings the system as close to full compliance as possible in accordance with certain minimum criteria. ([310 CMR 15.404-405](#)).

What happens if I cannot meet the minimum requirements of maximum feasible compliance in repairing a failed system?

You generally will have to apply to the local Board of Health for a variance from Title 5 requirements. Title 5 provides a number of options for situations where a variance is required, including use of an innovative/alternative technology or a shared system.

In many cases, MassDEP also must approve a variance once it has been approved by the Board of Health.

What are Nitrogen Sensitive Areas?

Areas that have been determined by MassDEP to be particularly sensitive to pollution from nitrogen in sewage. Interim Wellhead Protection Areas and Zone IIs of public water supplies are specifically identified as nitrogen sensitive areas. Title 5 also allows for the designation of nitrogen sensitive embayments based on appropriate scientific evidence. ([310 CMR 15.214](#)).

Title 5 has special requirements for repairing failed systems and for the construction of new systems in Nitrogen Sensitive Areas. Talk with your local Board of Health or your system designer for details.

What are "tight tanks" and how are they regulated?

Tight tanks are similar to septic tanks, except that they have no outlet and must be pumped out at regular intervals. Title 5 strongly discourages the use of tight tanks, but they are allowed in situations where an existing system has failed and there is no other feasible alternative. Tight tanks are not allowed for new construction or increases in design flow.

Additional Title 5 & Septic System FAQs

- [System Maintenance](#)

How does a conventional septic system work?

Conventional septic systems are the most common type of septic system (the others are innovative/alternative (I/A) systems and cesspools). A conventional system includes a septic tank, distribution box, and soil absorption system (SAS). The septic tank separates the solid and liquid wastes and the SAS provides additional treatment before distributing the wastewater to the ground. Additional details on [septic system maintenance](#) are also available.

Why are failing septic systems harmful?

Inadequately treated wastewater can transfer diseases such as dysentery, hepatitis, and typhoid fever to animals and humans. Failing systems also leak excessive nutrients and bacteria to rivers, lakes, and the ocean, destroying plant and animal habitat, closing beaches, and hurting the fishing industry.

How do I know if my system is having problems?

Some clues:

- Muddy soil or pools of wastewater around your septic tank or soil absorption system.
- Sewage smells around your system or inside your house.
- Backups when you do laundry, take showers, or flush the toilet.

Call [your local Board of Health](#) if you notice any of these symptoms. Additional details on [septic system maintenance](#) are also available.

Do I really save money by maintaining my system?

Yes. Pumping your system costs between \$150 and \$250, and an inspection could cost \$200-\$400. Replacing a system could cost up to \$40,000.

What are the most important things to do to take care of my system?

Pump your system at least every 3 years (annually if you have a garbage disposal). Conserve water. Don't dump non-biodegradables or trash down your toilet or sink. See [this list of do's and don't's](#).

How Do I as a System Owner Properly Care for my Septic System?

Conventional septic systems can function very well with minimal care. In fact, most septic tanks will only require an inspection and pumping out by a professional every three to five years if they are used properly. This does not pertain to [I/A systems](#), which need more frequent oversight.

DO...

Do have the system inspected and pumped every 3 to 5 years. If the tank fills up with an excess of solids, the wastewater will not have enough time to settle in the tank. These excess solids will then pass on to the leach field, where they will clog the drain lines and soil.

[More information on pumping](#)

Do know the location of the septic system and drain field, and keep a record of all inspections, pumpings, repairs, contract or engineering work for future references. Keep a sketch of it handy for service visits.

Do grow grass or small plants (not trees or shrubs) above the septic system to hold the drain field in place. Water conservation through creative landscaping is a great way to control excess runoff.

Do install water-conserving devices in faucets, showerheads and toilets to reduce the volume of water running into the septic system. Repair dripping faucets and leaking toilets, run washing machines and dishwashers only when full, and avoid long showers.

Do divert roof drains and surface water from driveways and hillsides away from the septic system. Keep sump pumps and house footing drains away from the system as well.

DON'T...

Do not use your toilet or sink as a trash can by dumping non-biodegradables (cigarette butts, diapers, feminine products, etc.) or grease down your sink or toilet. Non-biodegradables can clog the pipes, while grease can thicken and clog the pipes. Store cooking oils, fats, and grease in a can for disposal in the garbage.

Do not put paint thinner, polyurethane, anti-freeze, pesticides, some dyes, disinfectants, water softeners, and other strong chemicals into the system. These can cause major upsets in the septic tank by killing the biological part of your septic system and polluting the groundwater. Small amounts of standard household cleaners, drain cleansers, detergents, etc. will be diluted in the tank and should cause no damage to the system.

Do not use a garbage grinder or disposal, which feeds into the septic tank. If you do have one in the house, severely limit its use. Adding food wastes or other solids reduces your system's capacity and increases the need to pump the septic tank. If you use a grinder, the system must be pumped more often.

Do not plant trees within 30 feet of your system or park/drive over any part of the system. Tree roots will clog your pipes, and heavy vehicles may cause your drainfield to collapse.

Do not allow anyone to repair or pump your system without first checking that they are [licensed system professionals](#).

Do not take leftover hazardous chemicals to your approved hazardous waste collection center for disposal. Use bleach, disinfectants, and drain and toilet bowl cleaners sparingly and in accordance with product labels.

Do not perform excessive laundry loads with your washing machine. Doing load after load does not allow your septic tank time to adequately treat wastes and overwhelms the entire system with excess wastewater. You could therefore be flooding your drain field without allowing sufficient recovery time. You should consult your [tank professional](#) to determine the gallon capacity and number of loads per day that can safely go into the system.

Do use only septic system additives that have been allowed for usage in Massachusetts by MassDEP. Additives that are [allowed](#) for use in Massachusetts have been determined not to produce a harmful effect to the individual system or its components or to the environment at large.

Do not use chemical solvents to clean the plumbing or septic system. "Miracle" chemicals will kill microorganisms that consume harmful wastes. These products can also cause groundwater contamination.

How often should I pump?

Every 3 years, and annually if you have a garbage disposal. To find septage pumpers licensed in your community, contact [your local Board of Health](#).

Will additives help my system?

There isn't one on the market that can make a failing system pass inspection. MassDEP issues permits for septic system additives, but only to ensure that they will not harm your system or the environment. We do not evaluate the accuracy of claims manufacturers make about the effects their products will have on system performance. A complete list of [additives allowed in Massachusetts](#) is available.

What are the regulations governing the disposal of paint and paint wastes into a septic system?

Only sanitary sewage is allowed to be discharged to Title 5 septic systems. Paint and paint wastes should not be put into Title 5 systems because they can adversely affect their operation and may cause groundwater contamination.

Certain paint wastes may be hazardous and require special handling and disposal. Other paint wastes may be disposed of at local refuse disposal facilities. For additional information contact [your local Board of Health](#).

Title 5 Innovative/Alternative Technologies

For most Massachusetts homes without access to municipal sewers, conventional septic systems provide for on-site wastewater treatment and disposal. However, site limitations can make it difficult to replace a failing cesspool or septic system with a conventional septic system that will meet state standards. [Innovative/Alternative \(I/A\) on-site systems](#) have several advantages:

- They are generally better than conventional septic systems at removing solids and other pollutants from wastewater before it goes to the soil absorption system (SAS).
- The SAS following an I/A technology can be expected to have a longer life.
- I/A technology can also provide advanced treatment to reduce the wastewater's nitrogen content. For this reason, nitrogen reducing systems may be required for new construction, including additions to existing homes, near a private or public water supply well or other nitrogen-sensitive areas.

Whether your home already has an I/A system or you are thinking about installing one, this web site will help you to get acquainted with the basics: what your alternatives are, how they work, what they cost to install and maintain, what is required to stay in compliance with Title 5, and who you can turn to for additional information and assistance.

Innovative/Alternative Systems: Frequently Asked Questions

What is an innovative/alternative (I/A) Title 5 system?

An I/A system is any septic system or part of one that is not designed or constructed in a way consistent with a conventional Title 5 system. A conventional system has a septic tank, a distribution box or dosing mechanism, a soil absorption system (SAS) and a reserve area. Some examples of alternative systems are recirculating sand filters, aerobic treatment units, Wisconsin mounds, peat filters, humus/composting toilets, and intermittent sand filters.

What I/A systems are being used right now?

Recirculating sand filters and humus/composting toilets are specifically approved for general use by Title 5, subject to certain conditions listed at [310 CMR 15.202](#) (RSFs) and [310 CMR 15.289](#) (humus/composting toilets). MassDEP has issued many approvals and certifications for I/A technologies, and new technologies are under review on an ongoing basis. See [details on MassDEP's approval process](#). Also view a [list of technologies approved or under review](#).

Do I/A systems work?

I/A systems can perform as well or better than conventional systems, when they are designed, built, operated and maintained in accordance with MassDEP's approval and the manufacturer's recommendations. See [details on maintaining an I/A system](#).

I would like to install a composting toilet. Should I apply to MassDEP?

Not when your proposed use of the humus/composting toilet meets the conditions of the certification for General Use, in [310 CMR 15.289\(3\)](#). Any proposed use of a composting toilet that does not meet the conditions of Title 5 must be approved by your Board of Health and MassDEP.

No matter what use is proposed for a composting toilet, you must have a [Disposal System Construction Permit](#) from your local Board of Health before installing it.

[More information on composting toilets](#) is also available.

Can I use an I/A system for new construction if my lot does not meet Title 5 requirements for percolation rate, four feet of naturally occurring soil, or the required separation from high groundwater?

No. Although Title 5 provides flexibility in order to help property owners continue to use existing homes and businesses, new construction or increases in design flow must meet the design standards listed above. See [details on MassDEP's approval process](#) for I/A technologies.

I am building a new house and would like to use a technology that currently is not used in Massachusetts. How do I get an approval?

The technology manufacturer may apply to MassDEP for Piloting or Provisional approval, or for General Use Certification ([310 CMR 15.280 - 15.289](#)). Or, you may apply to MassDEP for approval to pilot the technology on your property. To pilot an alternative system for new construction, including an increase in design flow, you must show that the property could support a conventional system; this provision provides for a back-up in case the piloted system fails. More information on [I/A systems for repair and new construction](#) is also available.

Where can I obtain a list of technologies approved for use in Massachusetts?

See a [list of technologies approved or under review](#), and [approval letters for individual I/A technologies](#).

How does a Board of Health verify that there is a valid Operation and Maintenance (O&M) contract in place for an Innovative/Alternative (I/A) system?

The Local Board of Health can require the owner to provide a copy of a valid O&M contract.