

Basic Town Center Sewer Facts

What is Title 5?

On-site wastewater disposal systems are systems that treat wastewater flows, usually less than 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 areas not served by sewer systems.

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.

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, phosphorous. Cesspools may also affect the soil's ability 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.

When are on-site system inspections required?

In general:

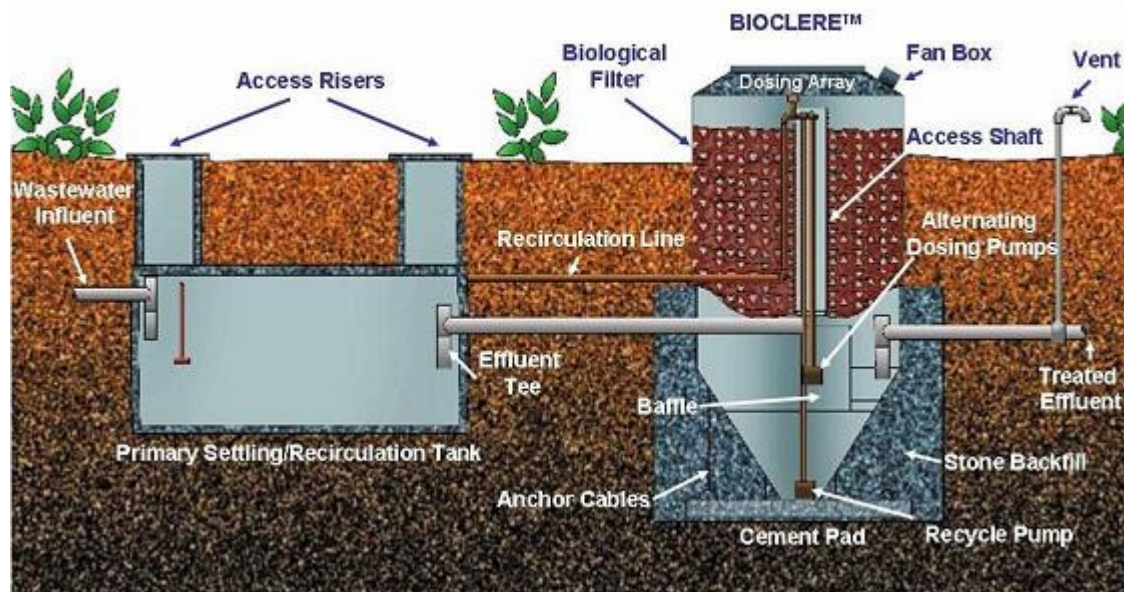
- When properties are sold, divided, or combined.
- When there is a change in use or an expansion of a facility.
- When Mass DEP or the local Board of Health requires an inspection.

What is included in a system inspection?

- General layout of the system components (location of the building sewer, septic tank or cesspool, distribution box and leaching field);
- Type of use (e.g., house, school, retail space), Title 5 design flow, and whether the facility is presently occupied;
- Analysis of the criteria specified in Title 5 that indicate system failure, and, for large systems, those which indicate threats to public health and the environment;
- Water use records from the previous two years, if available;
- A description of the septic tank, including its condition, approximate age, thickness of grease/scum layer, and other relevant information;
- A characterization of the distribution box and dosing tanks with pumps, if any; such as condition and evidence of solids carryover or backup.
- The condition of the soil absorption system including any signs of hydraulic failure.

What is the Existing Waste Water Treatment Plant?

- The existing plant is located on Mass Ave. east of the Harvard Elementary School.
- It was built when the schools were enlarged about 6 years ago.
- The overall capacity of the system is about 23,000 gallons per day. Of this about 6,000 gallons per day are currently utilized.
- The following drawing shows a basic design of the Bioclere system which is the type of system used by the Harvard Wastewater Treatment Plant (WWTP)



What is the Proposed Town Center Sewer Design?

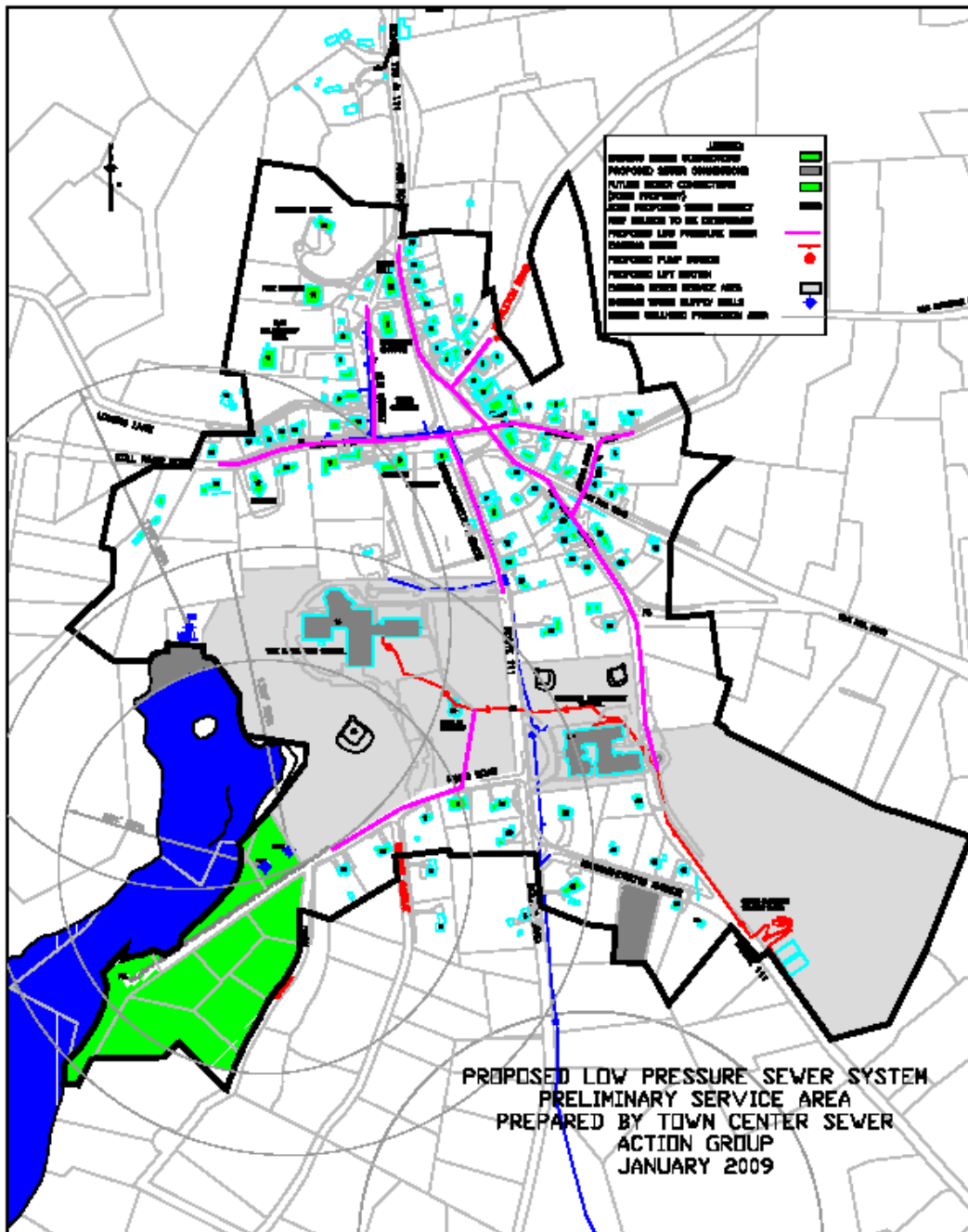
- The plan is to connect all the buildings within the Town Center Sewer District by a pressurized system of pipes to the existing WWTP located on Mass Ave. east of the Harvard Elementary School.

What is a Low Pressure Sewer System?

- As opposed to a gravity system, a pressurized system can actually be designed to run up hill.
- It becomes less expensive because the pipe size can be smaller, does not have to be as deep (as long as it is below frost level), can follow the contours of the land and can avoid underground obstacles.
- Since the system is under pressure there is much less infiltration of ground water which will decrease the amount of material directed to the WWTP for treatment.
- To pressurize the system a grinder pump is installed, maintained, and owned by each connection to the system.

What is the proposed route of Town Center Sewer Project?

The route of the entire project is broken down into five legs. It will allow the homes within a defined sewer district as well as the businesses, churches, and municipal buildings to tie into the system. The main trunk line runs from Town Hall down Mass Ave. and Fairbank St. to a lift station behind the Elementary School to be pumped up to the WWTP on Mass Ave. A branch on Still River Rd. will intersect another branch coming down Elm St. A short line will run across Pond Rd. to connect with the line from the Library.



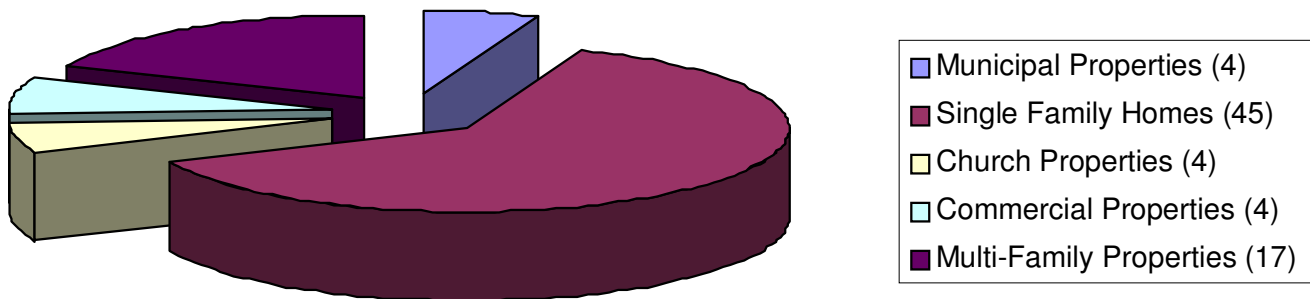
What is the total cost of Town Center Sewer?

The capital cost of the project will be about **\$1,928,640**. This would be funded by betterment charges for private properties served by the district together with the town capital budget for municipal properties served by the system..

Details – Funding

- A municipal bond in the amount of about \$1.9 M for 20 years at 2%. We are currently investigating other rates.
- About 94% of funding to come from betterments assessed to private properties that are served by the new sewer system and are improved in value
- About 6% of funding to come from taxpayers for the municipal improvements, to be offset by sharing of already-in-place operating costs that are today fully borne by taxpayers

**Harvard Town Sewer Proposal: Contributions to capital costs
for different property groups**



What is the timeline of the project?

The proposed schedule is to have a complete system in 12 to 18 months from the time of town approval.