



Town of Medway

Department of Public Works

DAVID D'AMICO
DIRECTOR

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SMOKE TESTING

What is the purpose of smoke testing?

Our public sewer system is designed to transport sewer flow (effluent) to a treatment facility. In dry weather it usually does so without issue. However, in wet weather, storm-related runoff may leak into the sewer system, resulting in an increased volume of flow the system wasn't designed to handle, which may result in Sanitary Sewer Overflows (SSOs). The purpose of smoke testing is to find potential points of inflow and infiltration (system Leaks) in the public portion of the sanitary sewer system that could lead to high flows during storms and snow melt events. Inflow & Infiltration substantially increases costs to rate payers as we are paying to treat clean water instead of just sewer flow. Not all residents will be affected by this process. Smoke testing can also help locate the following:



- Buildings that have downspout, cellar, yard or basement drains, ect.
- Points of groundwater or surface water intrusion into the sewer
- Any cross connections between sanitary sewers and storm drains
- Defective sewer connections that could allow sewer gases into a building

How does smoke testing work?

Smoke testing is the process of injecting artificially produced smoke into a blocked off pipeline segment to see where the smoke emerges. If the sewer is in good condition, then the forced smoke will emerge from manhole lids along the line and house vents on the roof. If the line has defects, the smoke will find the break and try to escape through the break. It is not unusual to see plumes of smoke issuing up from peculiar places, such as cracks in the street, or in residential yards during smoke testing. A three or four person crew will conduct the tests. Each crew member will have proper identification and use well marked vehicles.



Is the smoke harmful?

NO. The "smoke" is not true smoke, but rather a mist containing a large percentage of atmospheric moisture that is highly visible at low concentrations. It will not harm your health and will disappear rapidly without leaving an odor. The smoke is: Non-toxic, Non-staining and odorless, Harmless to humans, pets, plants, food and material goods, and will not create a fire hazard.

HIGHWAY – WATER – SEWER – FLEET – PARKS – FACILITIES – SOLID WASTE



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I am a pet owner and I will not be at home during the testing. Should I be concerned?

The smoke is not harmful to pets. As long as windows are left open, any smoke that enters the building will dissipate in a few minutes.

Will smoke testing of the sewers allow smoke to get into my home?

No, provided that your plumbing is installed and functioning properly, and provided “traps” are filled with water. Drains that are used frequently should be okay. If you are not sure, simply run water down the drain for a minute to ensure that the trap is not dry. It is important to locate dry traps as they could allow sewer gases to enter the home. Dry traps are most commonly found in basement floor drains that are used only during rare flood events or in unused fixtures. Please thoroughly check your home. If smoke gets inside of your home locate one of the smoke testing crew member and they will assist you in locating where the smoke entered your home.

What does it mean if smoke enters my house?

If smoke enters your home during the test, it may indicate there are deficiencies in the plumbing that may allow potentially dangerous sewer gas to enter.

How may the smoke enter my house?

Since plumbing fixtures in your home or business are connected to the sanitary sewer system, there is the potential for the smoke to enter if the drains are not connected properly. This happens particularly under the following circumstances:

- The vents connected to your building's sewer pipes are inadequate, defective or improperly installed
- The traps under sinks, tubs, basins, showers and other drains are dry, defective or improperly installed
- The pipes, connections or seals in the sewer system in and/or under your building are damaged, defective, have plugs missing or are improperly installed

How is a plumbing “trap” supposed to work?





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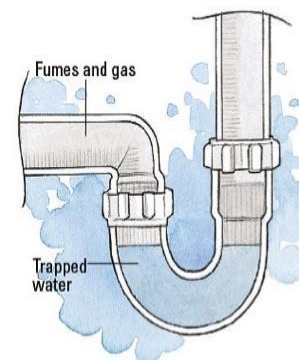
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The “gooseneck” or “snake” section of your drain pipe is the “trap.” The trap allows water to fill that section of the pipe completely. Since vapor and gas cannot travel through water



unless under pressure, this effectively “traps” the gas in the sewer portion of the pipe. The vent on your system—the portion of pipe protruding from the roof of the building—prevents the gas from becoming pressurized and allows it to escape outside the structure. These two systems function together to keep potentially harmful sewer gases from entering your structure. If there is no water in the trap, the trap is not functioning properly. We recommend dumping water into building drains and fixtures prior to testing.



What should I do if smoke gets into the house?

- Do Not Become Alarmed
- Open windows to allow ventilation and note the location of the smoke emission; smoke will clear within a few minutes
- Exit the building and notify smoke testing personnel in the area.

If the smoke is not harmful, why do you recommend evacuating the structure?

We recommend evacuating as a precautionary measure in case the smoke is due to a real fire rather than a test, and also since smoke in your house from this test indicates other sewer gases may also be entering the building.

What happens if the inspection crews find a faulty sewer or lack of water traps in a home?

If smoke is seen within a house or structure, our crews will attempt to notify the homeowners of these potential defects. Owners will be responsible for repairs to private property plumbing.

How long will the testing take?

While crews might be in your area for a few hours, each actual smoke test setup takes approximately 15 minutes to complete. Most houses will only be within the testing area for one or two tests.

Do I have to be home during testing?

No. Inspection crews will not need to enter your home unless smoke is present and you want them to help identify the defect.

How will I know if smoke enters my house if I am not home during testing?

The purpose of the smoke test is to identify sources of unauthorized water entering the public portion of the sewer system. While it is also beneficial to note deficient plumbing connections on private property, this is not the main intent of the smoke test. It is the homeowner's responsibility to maintain private plumbing connections.

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Why can't you tell me in advance exactly what date my home will be tested?

This testing cannot be conducted during rainy periods or very windy conditions, so it can sometimes be delayed. Also, other activities in the project may take less time than anticipated, so it can sometimes be sooner than expected. The schedule may also shift if more or fewer defects than expected are located and need to be documented.

Will rodents be smoked out?

No. However, the smoke may detect broken building sewers where there is a potential for rodent access.

Can the smoke testing activate the smoke alarms?

Yes, smoke alarms may be activated during smoke testing. If possible, open windows and/or doors for ventilation. **If you have any doubts about the origin of the smoke, please call 911.**

Can smoke plug the sewer?

There is no way smoke can plug the sewer. The smoke is made up of a vaporized substance.

Where does the smoke appear?

Smoke may be seen coming from roof vents, building foundations, manhole covers or yard cleanouts. Smoke coming from roof vents on the roof of homes is a normal occurrence and indicates to the crews that smoke has filled all sewers.

Contact us

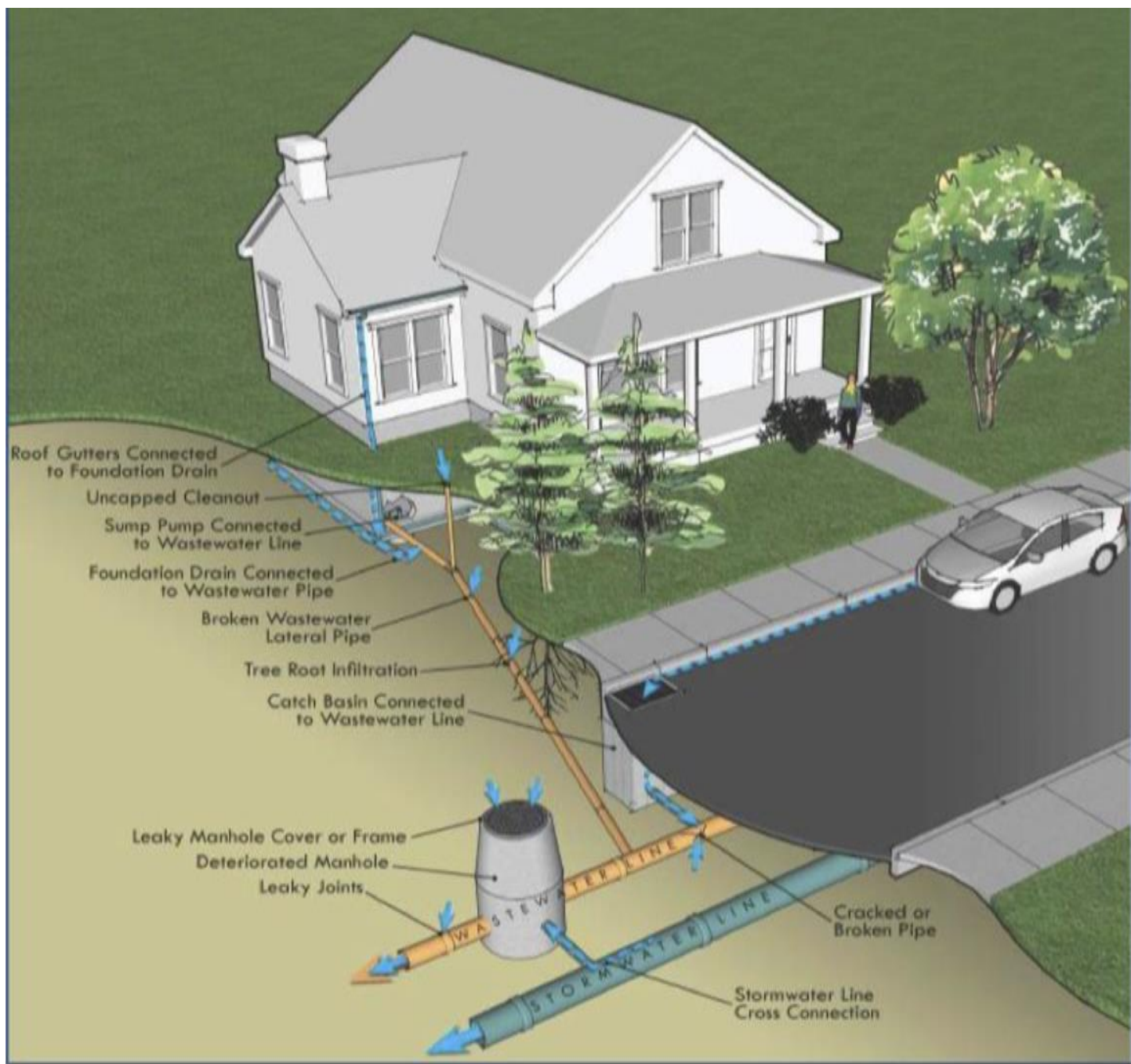
If you have any additional questions, please call the Department of Public Works at (508) 533-3275.



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