Sanitary Sewer Smoke Testing
Frequently Asked Questions

What is the purpose of smoke testing?
The purpose of smoke testing is to find potential points of inflow and infiltration in the public portion of the sanitary sewer system that could lead to high flows during storms and snow melt events. Smoke testing can also help locate the following:

- Buildings that have downspout, cellar, yard or basement drains, and sump pumps
- 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

1: Smoke Testing (photo for informational purposes only)

How does smoke testing work?
Wright-Pierce has notified the building owners by mail and will inform the local fire and police departments of where they will be conducting smoke testing each day.

During smoke testing, field crews blow air and smoke into the sanitary sewer system in the street and monitor where smoke escapes the system. The smoke under pressure will fill the main line as well as any connections and then follow the path of any leak to the ground surface, quickly revealing the source of the problem. For instance, if smoke permeates up through a yard, it indicates breaks in the sewer line. Only enough force to overcome atmospheric pressure is required, and smoke should escape from building roof vents. **If you have any doubt as to the source of the smoke in your home or yard, phone 911 immediately.**

What are the benefits of smoke testing?
Smoke testing is the most efficient and cost effective way to locate and identify where unauthorized water is entering the public portion of the sewer system. The smoke is harmless and will disappear after only a few minutes. The testing is also a cost-effective way to find areas of the sewer system that need improvement. Smoke testing will also help identify plumbing leaks in buildings. Sewer gases can cause health problems for building occupants.

Smoke testing is becoming a requirement nationwide for locating unauthorized water problems that are threatening the ability to properly treat wastewater and costing wastewater treatment facilities millions of dollars.

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 or leave a stain and will disappear rapidly without leaving an odor. Since any vapor can be an irritant, direct contact with the “smoke” may cause minor respiratory irritation in some people.

Individuals with respiratory problems such as chronic asthma, emphysema or other respiratory conditions should avoid direct exposure to the smoke. Please contact Wright-Pierce Engineers at 1-800-422-1095 to discuss your situation in further detail.

If the smoke enters your home, it may make you cough, but the smoke is

- Non-toxic
- Non-staining and odorless
- Harmless to humans, pets, plants, food and material goods
- Creates no fire hazard

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.

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:

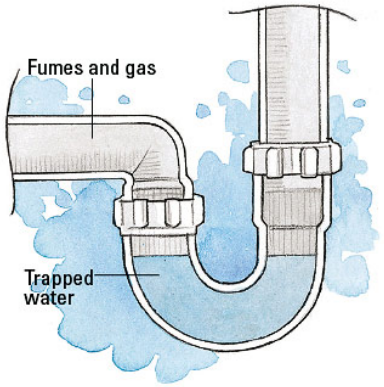
- The vents connected to your building's sewer pipes are inadequate, defective or improperly installed
- The traps under sinks, tubs, basins, showers and other drains are dry, defective or improperly installed
- The pipes, connections or seals in the wastewater drain system in and/or under your building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

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.

How is a plumbing "trap" supposed to work?
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.



2: Trap (photo for informational purposes only)

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.

What should I do to prepare for smoke testing?
When you receive notice that smoke testing will take place, you should:

- Check to see that all drain traps under basins, washing facilities and floor drains contain water; simply flush toilets and run or pour water into all drains, including unused fixtures and floor drains.
- If there is an individual in your home or business who has respiratory problems and/or mobility limitations, or if you have any additional questions, contact Wright-Pierce Engineers at 1-800-422-1095.

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. You are not required to allow entry to our crews.

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.

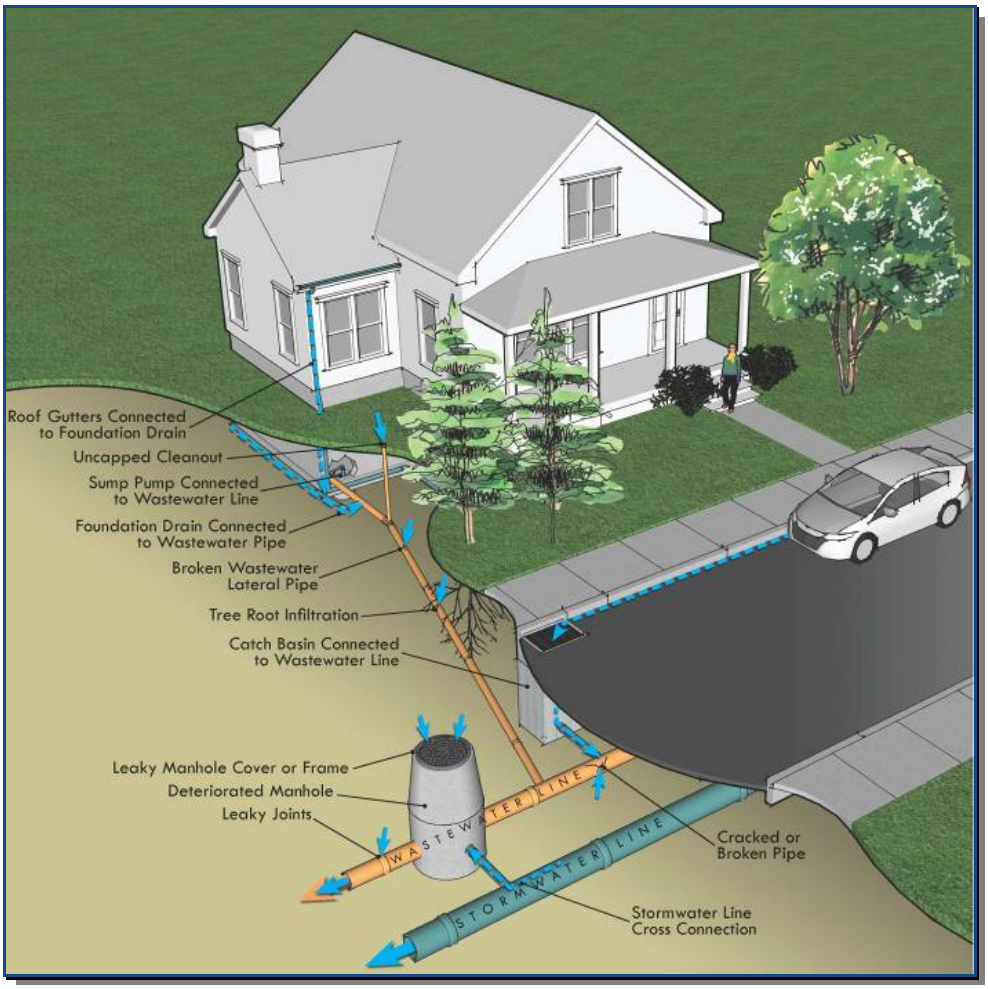
Why can't you tell me in advance exactly what date my home will be tested?
This testing cannot be conducted during rainy periods or very windy conditions, so it can sometimes be delayed. Also, other activities in the project may take less time than anticipated, so it can sometimes be sooner than expected. 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.

If you have any additional questions please call Wright-Pierce Engineers at **1-800-422-1095**.

Potential inflow/infiltration sources illustrated below. Smoke testing assists with locating underground connections and defects that are otherwise difficult to detect.