

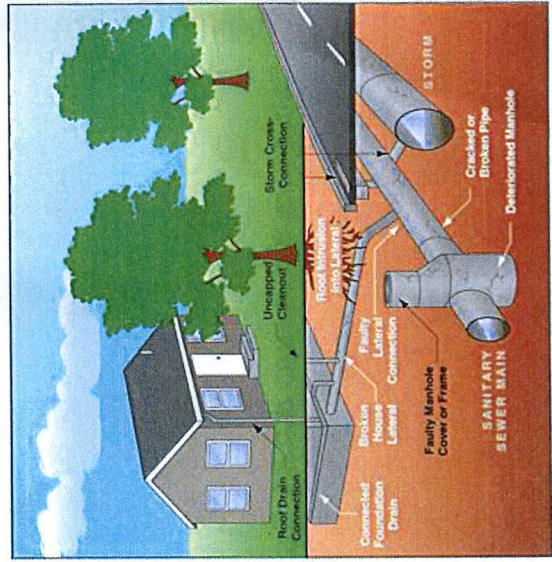
Sanitary Sewer I&I

What is I&I?

I&I is an acronym for **Inflow and Infiltration**. Inflow and infiltration are terms that are used to describe the ways that groundwater and rain water enter the sanitary sewer system.

Inflow is water that enters the sanitary sewer system through improper connections, such as downspouts, residential area drains, and groundwater sump pumps. Groundwater sump pumps are generally used to pump out wet crawl spaces or foundations.

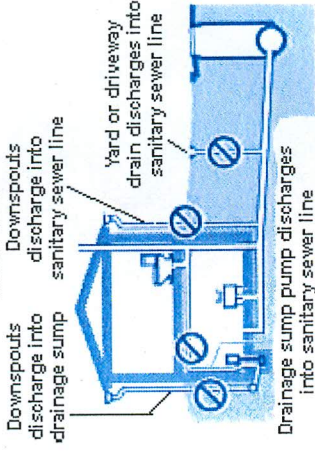
Infiltration is groundwater that enters the sanitary sewer system through leaks in the collection system. Leaks in the collection system may be through cracks in pipes, separated pipe joints, or through surface ponding that may submerge a sewer manhole or structure and leak through the top.



Key:
 — Inflow Source
 — Infiltration Source

Improper Connections

All water from rainstorms and underground seepage should be discharged onto the ground or into a drainage ditch. Some of the common improper connections are shown here.



Any connection of this type to the sanitary sewer system should be disconnected and directed to the ground or facilities designed to carry rain water.

Why is it important for everyone to remove improper connections to the sanitary sewer system?

Removing improper connections will significantly reduce the flow of clear water to the sanitary sewer system. This will reduce the probability of flooding in homes and sanitary sewer overflows to the ground due to the overloaded condition.

An 8 inch diameter sanitary sewer can handle residential wastewater flow from up to 200 homes. Eight (8) homes with a typical sump pump running at full capacity or six (6) homes with gutter downspouts connected to the sanitary sewer will overload the same 8 inch diameter line.

How can you help?

If you know that you have an improper connection to the sanitary sewer, consider having it disconnected. This will significantly reduce the chance of a sewer backup or discharge during a rain event. You may be helping not only yourself, but your neighbor, as well.

All of this type of water that enters the sewer system is termed "clear water" to distinguish it from sanitary sewage. The US Environmental Protection Agency and the Missouri Department of Natural Resources require sewer utilities to take actions to reduce or eliminate the intrusion of clear water into the sanitary sewer system.

What is a sanitary sewer?

A sanitary sewer is a pipe located in the street or an easement that is designed solely to transport wastewater from sanitary fixtures inside your house. Typical sanitary fixtures include toilets, sinks, bathtubs, showers, clothes washing machine discharges, and dishwasher discharges.

What is a storm sewer?

A storm sewer is a pipe designed to carry rain water away. Storm sewers are normally much larger than sanitary sewers because they are designed to carry much larger amounts of water generated by rain events. Surface drainage ditches and swales perform the same function as a storm sewer in many areas.

What is an improper connection to the sanitary sewer?

An improper connection permits water from sources other than sanitary fixtures to enter the sanitary system. That water should be going to the storm sewer or surface swale or ditch, or allowed to soak into the ground.

Some samples of improper connections include gutter downspouts, groundwater sump pumps, foundation drains, and driveway drains.