Why is Inflow & Infiltration (I&I) a BIG Problem?

In addition to causing sewer spills, the additional flow from I&I results in the need for larger sewers and treatment plants. This raises the sewer fees that residents and businesses must pay the sewer agencies to build, operate and maintain the sewer lines and wastewater treatment plants. Sewer systems (sewer lines/pipes and pump stations) are designed to handle sewage flows from houses and businesses plus some additional flow from I&I. Sewage flow rates used to design sewers have been developed over the years based on information obtained from water usage within the household and workplace. The exact volume of groundwater and rainwater (I&I) entering the system, however, varies with location and is virtually impossible to predict. I&I entering the system can be much higher than the system's capacity when there is too much leakage due to infiltration from deteriorated sewer pipes or significant sources of rainwater inflow. The I&I that enters the sewer system is transported to wastewater treatment plants along with the sewage. The groundwater and/or rainwater mixed with the sewage can double and even triple the design capacity of the treatment plant. Treatment plants are generally designed like sewer systems. When large volumes of I&I increase the wastewater flow, the sewer system is overwhelmed to the point where a sewer spill can occur. The extra flow from I&I simply causes the sewer system capacity to be exceeded. Sewer spills pose a public health risk due to increased probability of human contact with harmful pathogens as the sewer runs down the street to the storm drains, streams, and eventually our recreational waters. Devastating backups of sewer in homes can also occur. In addition to causing sewer spills, the high flow can also affect the ability of the treatment plant to adequately treat

the wastewater. Who is I&I Studies show it

Who is Responsible for I&I Problems?

Studies show it has been found that the greatest contribution of inflow comes from private property. Inflow connections at your home may alleviate the inconvenience of flooding in your

yard, it has significant impact to the sewer system, sewer rates, and public health. It has been estimated that approximately 40% of total I&I is contributed by the "private" side of the sewer. Individual sewer users can play a **BIG** role in minimizing sewer fees, promoting proper functioning of the sewer system (reducing spills), and protecting the environment. Your sewer agencies are spending a lot of money replacing old defective sewer lines in the streets to reduce infiltration but individual sewer users **MUST** do their part in reducing rainwater inflow.

What are Sanitary Sewer Overflows (SSOs)?

Sanitary Sewer Overflows (SSOs) are discharges of raw sewage from municipal sanitary sewer systems. SSOs can release untreated sewage into basements or out of manholes and onto streets, playgrounds and into streams before it can reach a treatment facility. SSOs are often caused by blockages in sewer lines and breaks in the sewer lines.

Why do sewers overflow?

SSOs occasionally occur in almost every sewer system, even though systems are intended to collect and contain all the sewage that flows into them. When SSOs happen frequently, it means something is wrong with the system.

Problems that can cause chronic SSOs include:

- Inflow and Infiltration (I&I)
- Sundersized Systems
- Equipment Failures

SANITARY

Sewer System





TAYLORS FIRE & SEWER DISTRICT

Address: 3335 Wade Hampton Blvd. Taylors, SC 29687

Phone/Fax/E-mail:

Phone: 864-244-5596 Fax: 864-292-4975 E-mail: samanthab@taylorsdistrict.org Website: www.taylorsdistrict.org

Have You Assessed <u>YOUR</u> Sewer Lately?



What is a Service Line?

A service line is the pipe that connects all the sinks, drains and toilets in your home or building to the sewer main, which are usually located in the public right-of-way (streets). It's the internal wastewater drainage system (plumbing) to the street sewer. Service lines are also called "service laterals", "house laterals", "sewer laterals", "building sewers", "house connection" or "service connection". The service line may begin at the outside of the building's foundation wall or some distance (such as 2 to 10 feet) from the wall. The entire length of your service line, extending from the home/building to the property line if a cleanout is at the street is the property owner's responsibility. If a cleanout is located at the property line your responsibility stops at that cleanout.



What is a Cleanout?

Service lines often have cleanouts. A cleanout is used to allow access to sewers for cleaning solids that cause stoppages, or repair broken lines. Cleanouts should be located in the service line approximately three feet from the foundation and another at the building's property line. The cleanout is usually a small pipe about 4 inches in diameter with a cap on it. A cap should be on the cleanout at all times.

Maintaining **YOUR** Service Line.

It is the Property Owner's responsibility to maintain your service line. Service lines are usually neglected by property owners until a problem arises. Proper maintenance and timely repairs can avoid backup of sewage and minimize problems. Keep your service line clean and clear of any obstruction, such as roots, grease, and debris. If your drains start to run slowly, there is a good chance you have some sort of obstruction in your service line. You can minimize or eliminate problems by being careful of what you dispose of in your drains, garbage disposals, and what you flush down the toilet. Reminder Fats, Oils, and Grease don't belong in the sewers they can clog your service line and the main sewer lines. Don't pour them down your drain. They belong in the trash. Cracked service lines can also cause problems by allowing groundwater to enter the sewer system. Service lines may be in bad condition and contributing significant Inflow & Infiltration (I&I) to the wastewater collection system. It is the property owner's responsibility to make sure I&I is not entering the wastewater collection system from service lines.



What is Inflow and Infiltration (I&I)?

Inflow (I) - Water discharged into a sewer system and service connections from such sources as, but not limited to, roof leaders, cellars, vard and area drains, foundation drains, cooling water discharges, air conditioning condensate drains, drains from springs and swampy area, around manhole covers or through holes in the covers, cross connections from storm water, catch basins, storm waters, surface runoff, street wash waters or drainage. Inflow is water that is not polluted and should not be in a wastewater collections system, but in a storm water drainage system. Inflow differs from infiltration in that it is a direct discharge into the sewer rather than a leak in the sewer itself. Infiltration (I) - The seepage of groundwater into a sewer system, including service connections. Seepage frequently occurs through defective or cracked pipes, pipe joints, connections or manhole walls.

What Can You Do to Prevent and Reduce Inflow & Infiltration?



 \Rightarrow Know where your service line is on your property.

- ⇒ Inspect your cleanout to make sure the cap is tightly closed and that the cleanout pipe has not been damaged (such as by a lawn mower). Replace missing caps so that rainwater can not get into the sewer system.
- ⇒ Disconnect outdoor patio, deck, yard, driveway, or garage drains that may be connected to the service line.
- ⇒ Reroute sump pump discharges from basement or foundation drains entering service line to outdoor lawn areas or storm drains.
- ⇒ Inspect the rain gutters on your home and make sure the downspouts are not connected to the sewer system. If the gutter downspouts are connected to the sewer line, have them disconnected. Rainwater should be redirected to rain gardens, lawns, and/or storm drains
- ⇒ Repair and/or Replace broken, leaky, cracked, damaged, or problem sections of your property's service line.
- ⇒ Maintain your service line. Keep it clean and clear of any obstructions, such as roots, grease, and debris.
- ⇒ Avoid planting trees and/or shrubs over or near your service line. Roots intrude into your service line causing leaks and damages.
- ⇒ Contact a licensed plumber to perform a periodic inspection of your home's service line for cracks, separated joints, or sags.
- ⇒ If you have a basement sump pump to pump out groundwater or rainwater leakage, be sure that it does not connect to your service line or to a sink or floor drain in your basement.