

## **Private Sewer Systems Defects and Overflows**

Most sanitary sewer systems are constructed as a network of manholes and pipes that flow from each building that generates sewage to a wastewater treatment plant. Private services, also called laterals, are pipes from the building to the sewer main. In some areas, the public system owns and maintains the “lower lateral” from the sewer main to the edge of the easement or right-of-way, and the private property owner owns and maintains the “upper lateral” the remainder of the way to the building. In other areas, the private property owner owns and maintains both the lower and upper laterals.

Finding and fixing sewer defects on private property sewer systems can prevent sewer overflows and backups that can cause health hazards, inhibit economic growth, and result in long-term environmental damage.

## **How Do Sewer System Defects Cause Overflows?**

Private sanitary sewer systems, the earliest of which were built in the mid 1800s, carry domestic wastewater away from private properties separately from stormwater. These systems have deteriorated over the years, are typically not maintained or replaced due to funding, and their ability to transport sanitary wastewater has been compromised due to population growth. As a result, these systems can experience separate sanitary sewer overflows (SSOs) both on public and private property.

SSOs are generally caused by infiltration that occurs when clean water such as groundwater enters the sanitary sewer through defects in the system or inflow from stormwater that enters the system through defects and illegal connections. SSOs can also be caused by inadequate pipe sizes when population growth exceeds the original design conditions. Dry weather SSOs can be caused by maintenance problems when debris, roots, or fats, oils, and grease block normal flow in the pipes.

## **What Are the Results of Defective Systems?**

The inability of sewer systems to transport flows caused by defects can result in inadequate service to customers, sewer backups into buildings, and sanitary sewers overflowing into waterways. Sewer overflows, whether into private residences and buildings, into parks and streets, or into waterways, pose health hazards and may violate the Federal Clean Water Act. If owners and communities ignore the deterioration of the sanitary sewer systems, the systems will continue to deteriorate, and the cost of repair will increase. Not addressing these sewer system defects may force cause economic development issues and long-term damage to the environment.

## **What Are Private System Defects?**

Common defects on private systems include:

- Missing cleanout caps;
- Broken cleanouts and cleanout caps;
- Broken service lines;
- Sump pump flows discharged to sanitary sewers; and
- Stormwater flow from downspouts, area drains, basement drains, stairwell and window well drains.

## **How Can Defects Be Located and Fixed?**

Private system defects are found using sanitary sewer evaluation survey (SSES) techniques such as smoke testing, dyed water flooding, internal television inspection (such as CCTV), or building inspections. If a property owner experiences consistent sewer backups it typically means that there are defects in their private system.

Eliminating private service defects can be as simple as replacing a cleanout cap. Other defect repairs may require an entire service lateral to be rehabilitated or replaced and may require hiring a licensed plumber. Cost of repairs can range from \$2,000 to \$20,000.

## **What Are Some Typical Programs to Eliminate Private Service Defects?**

Many agencies have developed programs to eliminate private service defects. Programs include locating the defects, educating the public, providing assistance for repair, repairing defects with either agency funds or property owner funds, and using ordinances to enforce the repair by the property owner.

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