



# SURREY

Mandatory replacement of sewer laterals

## THE SCIENCE

Wet weather sanitary sewer overflows and sewer backups are generally caused by excessive amounts of rainwater inflow and groundwater infiltration entering the sanitary sewer system. Excessive inflow can occur when roof drain leaders, foundation drains and drainage catch basins are incorrectly connected to sanitary sewers instead of storm sewers. Further, cracks and loose joints in storm sewer laterals can lead to exfiltration into the sanitary system.

A particular challenge for local governments involves confronting problems with sewer connections and laterals on private property that have the potential to cause damage that may occur elsewhere in the community. Losses resulting from excessive inflow and infiltration are frequently misidentified by the public to be exclusively the result of a failure in municipal infrastructure when in reality, they often come from problems that should be addressed by private property owners.

Inflow and infiltration in sewer systems can cause many problems. Excessive water flow can severely limit the capacity of existing sewer systems to serve expanded populations, generate sewer backups, flood basements, impose health risks, increase the operation and maintenance costs of treatment and pumping facilities, and lower groundwater levels leading to detrimental effects on water resources. In certain cases, sewer laterals may also deteriorate to the point where

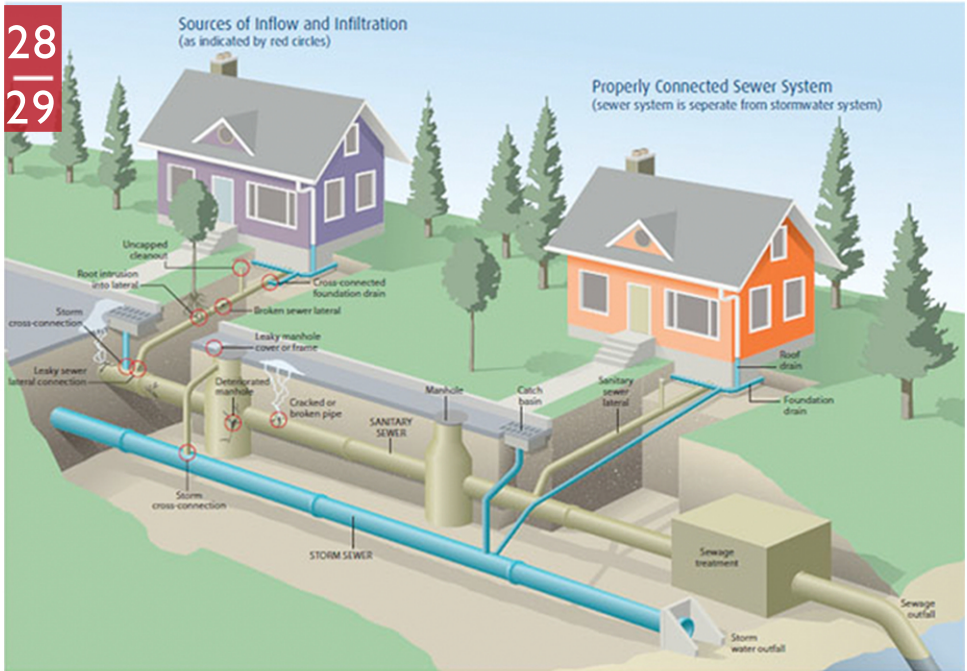
they can no longer perform their intended function for the property owner.

## THE TRIGGER

The City of Surrey is a relatively young community that has not experienced much damage to homes from sewer backup and basement flooding. Nevertheless, the City is proactive in monitoring the performance of its sanitary and stormwater management systems and has identified and taken action to address an emerging, longer-term problem with private sewer connections.

Surrey's sanitary system is separated into several catchment areas. These catchment areas are monitored through flow monitoring devices to determine the extent of inflow and infiltration for each area across the City. The severity of the inflow and infiltration is then ranked and rehabilitation work is assigned accordingly.

Over the years, local authorities in Surrey have come to learn that 30 to 70 percent of inflow and infiltration originates from private laterals. Owners are responsible for repairing or replacing their sewer connection so no rainwater or groundwater enters the system, yet a significant and growing volume of rainwater has been entering the sanitary sewer system through private connections. The City of Surrey took early action to confront this problem with a by-law to ensure better maintenance of private laterals (sanitary and storm).



LAS updated November 2010

**Figure 7** : Illustration used by the City of Surrey to outline potential sources of inflow and infiltration (highlighted by the red circles) and how a properly connected sewer system should look.

(Source: City of Surrey)

## THE APPROACH

Several triggers can lead to the mandatory replacement of sewer laterals in Surrey. If the service connection or the building sanitary sewer is more than 30 years old, replacement or new service is required when a property owner submits an application for a building permit with construction value greater than \$100,000 or where a parcel of land is being redeveloped.

If a building's sanitary sewer lateral is less than 30 years old, then an application for a building permit for construction value greater than \$100,000 must include a video inspection of the service connection. This video inspection is also required when a parcel is being redeveloped. The City will review the inspection videos and determine if the connection is adequate or has excessive damage. The owner must repair or replace the connection if needed.

In addition, all no-corrode, asbestos, cement, or clay service pipes have to be replaced, regardless of their age. Also any shared service connections and building sanitary sewers have to be replaced when an application for a service connection accompanies a building permit for construction with a value greater than \$100,000 or where a parcel is being redeveloped.

Central to the approach in Surrey is the focus on properties choosing to undergo significant renovation or redevelopment. The assessment of laterals has been included in the building permit management process, and improvement in private sewer connections becomes one element of a larger renewal process. The general view is that private property owners are not aware of the health of their sewer connections, and a period when property owners choose to make a significant investment in renewing their homes is an ideal time to assess the state of their sewer laterals.

## THE OUTCOME

In Surrey, most development has occurred over the past 30 years so the City has not experienced many circumstances when sewer laterals required replacement. The mandatory sewer connection replacement program provides a mechanism to address an issue of poor sewer connections on private property that is expected to grow in importance over time. Creating the by-law was a relatively simple task and no one has challenged it since its implementation.

The City is looking to revise the mandatory sewer lateral replacement by-law. Surrey seeks to focus on property owners that choose to do significant renovations but would like to provide an exemption for property owners required to conduct major unplanned renovations. This may be the result of a catastrophic fire or other extreme event.

## A WORD FROM SURREY

When asked what advice he would give to other cities that would like to implement a similar by-law, Jeff Arason, Manager, Utilities for the City of Surrey, responded that "it is very easy to demonstrate that pipes are at the end of their service life but I think that in future years there will be more and more pressure on municipalities to replace these connections. However, I believe there needs to be some consideration for those that have unplanned replacements of their homes and that cities should be flexible in that regard." Mr. Arason also mentioned that requiring all homeowners to change their sewer laterals, which would equate to approximately 90,000 sewer laterals in Surrey, would be practically impossible, but using building permits as a way to enforce the by-law has proven to be very efficient.