HOMEOWNER ALERT

Subject: Sewer House Lateral vs. Tree Roots

Don't let tree roots ruin your weekend - maintain your sewer house lateral lines and keep things flowing.

Do you know that tree roots growing inside a sewer house lateral is generally the most expensive sewer maintenance item experienced by homeowners?

Roots from trees can clog or damage sewer house laterals when the pipes are not maintained. Homeowners should know the location of their sewer house lateral and have a 4-inch cleanout installed if one does not already exist. The replacement cost for house laterals damaged by tree roots can vary from couple hundred to couple thousands of dollars. Routine maintenance of the sewer house lateral can prevent these costly repairs.

Do you know what a sewer house lateral is?

In accordance with City of Glendora Standard Design and Specifications No. 3.01, the "house lateral" is defined as that part of the sewer piping within the street or right-of-way which extends from the property or sewer right-of-way line to a connection with main line sewer for the purpose of conveying domestic sewage. In some cases, the main line sewer may be situated in an easement or alley behind your home.

In Glendora, most sewer house laterals are made of vitrified clay pipe with bell and spigot compression joints where the straight end of one pipe section (spigot) is pushed into the flared out bell (socket) of another pipe section. Prior to the advent of synthetic rubberized sealant materials in the 1960s, bell and spigot sewer pipe joints were often sealed with oakum (asphalt saturated hemp fiber) and cement mortar. According to engineering studies, these joints were assumed to have a lifetime of 25 to 30 years, after which time deterioration of the joint sealant materials would result in leaks. Considering most of Glendora's homes were originally built in the 1940s through 1960s, it is not surprising that many sewer house laterals have leaking joints. The clay pipe itself can also sustain damage due to soil settlement.

Do you know that tree roots do not break sewer lines?

It is a common misconception that tree roots break sewer lines. There is no question that sewer problems can be traumatic and expensive for homeowners. And there is no doubt that when the plumber's snake does its work, handfuls of roots are often retrieved from the sewer house lateral before the pipe is cleared and starts flowing properly. But where did those roots come from? Why were they in the sewer? Did the tree really *cause* the sewer problem?

Tree roots require oxygen, water, and nutrients to grow. Tree roots grow best when favorable conditions of soil moisture, texture and oxygen are present. Under these conditions, most roots are found in the top 3 feet of soil, well above sewer house lateral lines. Sewer house laterals are usually a minimum of 6 feet deep at the property line (right of way), and slope upward toward your residence. Nevertheless, a few tree roots may grow deeply enough to be near a properly buried sewer line. Even so, roots cannot enter an intact sewer pipe. Tree root growth is opportunistic; i.e., roots proliferate in areas suitable for growth. Roots thrive in the warm, moist, nutrient-rich conditions that exist within the sewer line. Tree roots grow toward an increasing

water gradient and are attracted to moisture condensing around pipes that are cooler than the surrounding soil. Thus, tree roots tend to follow buried piping when encountered. The leading tip of the tree roots can detect minute differences in moisture and nutrient levels and tend to grow in the direction where these can be found. If the pipe is structurally sound and does not leak, roots will not pose a problem. However, if the pipe is defective or there are cracks or leaks, roots will exploit the compromised joint or crack and grow into the pipe. On reaching a leaking crack or joint in the clay pipe, tree roots will penetrate the smallest of openings to reach the nutrients and moisture inside the pipe. Once roots enter the defective pipe, they begin to thrive and grow rapidly. The roots will continue to grow undetected, and if not cut out, they may completely fill the pipe with multiple hair-like root masses at each point of entry. The root mass inside the pipe becomes matted with grease, tissue paper and other debris discharged from the residence, potentially blocking the flow of sewage from the lateral to the mainline in the street.

A leaking sewer pipe creates an attractive point of entry for tree roots. Once a root enters a sewer pipe, it will encounter conditions of aeration, moisture and nutrients that are so favorable that the root inevitably grows until it clogs the sewer. Tree roots increase in diameter by producing woody growth rings each year. Radial pressures exerted by the growing roots can eventually break the pipe walls and cause it to collapse. Sewer house laterals that become blocked by tree roots are usually old clay pipes and in bad condition. Structurally damaged pipes may require repair or replacement. Modern plastic sewer pipes are unlikely to suffer such root intrusion.

Do you know the first signs of tree root intrusion into the sewer house lateral?

The homeowner will notice the first signs of a slow flowing sewer house lateral line by hearing gurgling noises from the toilet bowl or observing a backup in the shower when the laundry is in the spin cycle and draining into the sewer inlet. A complete blockage may occur if no remedial action is taken to remove the roots.

Do you know that routine maintenance of your sewer house lateral can greatly reduce the possibility of a blockage or structural damage to the sewer pipe?

Periodic maintenance of your sewer house lateral can minimize root intrusion and clogs. Ignoring your sewer house lateral can lead to blockages and collapsed pipes, which may necessitate costly repairs and/or replacement of your house lateral. Like the old adage... “An ounce of prevention is worth a pound of cure.”

Do you know you are responsible to maintain your sewer house lateral?

In accordance with City of Glendora Standard Design and Specifications No. 3.01, the property owner served by the lateral shall be responsible for all repairs to the lateral and all damages caused by the root intrusion into the lateral, including but not limited to damage to public and private property. Therefore, the City of Glendora is not responsible for clogs or damages to your sewer house lateral or the cost of repairs, even if the roots in your sewer house lateral originate from a City street tree.

Do you know how to adequately maintain your sewer house lateral?

Homeowners should periodically inspect their sewer house lateral before there are symptoms of trouble, to avoid costly major repairs. A thorough video inspection of your sewer house lateral

will reveal debris blockage, root intrusion, low spots, cracked or deteriorating piping, and cracked, separated or leaking pipe joints. The depth and exact location of problem areas can be identified to keep your repair costs down. Access to the sewer house lateral can be gained through a properly installed 4-inch clean-out at the outlet of your home.

When root intrusion becomes a problem, the most common method of removing roots from sewer pipes involves the use of powered snakes (augers) with cutting blades. To ensure the best removal of the tree roots, the cutting blade needs to be the same diameter as the pipe. When plumbers run a snake through a roof vent only a small fraction of the roots are removed. Cleaning the sewer line through a roof vent or toilet waste line is an insufficient method when tree roots are the cause of the blockage.

The Public Works Department recommends cleaning the sewer line through a 4-inch clean-out directly installed into the sewer house lateral. A 4-inch clean out is necessary to get the largest cutting blade and most roots removed from inside the pipe.

Do you know there are trenchless methods to repair your damaged sewer house lateral?

A qualified plumbing contractor can offer various options for repairing your damaged sewer house lateral piping. If your sewer house lateral has collapsed, it will be necessary to excavate a trench to replace the damaged section of piping. For most other repairs, it may be feasible to repair the compromised piping by one of the trenchless methods described below.

Open trench sewer repair can be expensive and heartbreaking. Thanks to new trenchless sewer technology, this nightmare is a thing of the past. Trenchless sewer repair methods avoid the need to dig up your landscaped yard, walkways, or driveway over the path of your failing sewer house lateral. Since there is little or no digging required, trenchless sewer repair saves time, money and aggravation.

The 3 most common types of trenchless sewer replacement/repair are as follows:

Sewer Pipe Bursting - This method of trenchless sewer line replacement consists of breaking up your old pipe by a powerful cone shaped tool called a bursting head while simultaneously pulling in a new pipe behind it. The contractor will only need to dig two small access holes on each end of your sewer line. One hole will be used to feed the new pipe in and another hole at the other end to pull the bursting head through, pulling the brand new sewer pipe behind it.

Sliplining – This method consists of installing a smaller carrier pipe into your sewer house lateral to repair leaks or restore structural integrity to an existing pipeline. It is one of the oldest methods for trenchless rehabilitation of existing pipelines. The most common material used to slipline an existing pipe is high density polyethylene (HDPE), but fiberglass reinforced pipe (FRP) and polyvinyl chloride (PVC) piping are also common.

Cured-In-Place Pipe (CIPP) – This method consists of having your existing sewer pipe relined with a durable, smooth, jointless and seamless epoxy resonated liner that fills and seals cracks in your old sewer line with a smooth and durable epoxy. In most cases, sewer pipe relining can be performed with no digging at all. The pipe is accessed from your clean-out and the new "pipe within a pipe" is fed through and cured to a hard and smooth durable finish.