Municipal chemical grout program stops infiltration

PROBLEM: Ongoing infiltration into the city of Olathe, Kansas, sewer system
SOLUTION: In-house chemical grout program

Like most municipalities, Olathe, Kansas, faces the challenge of water infiltrating its sewer system through cracked pipes and leaking manholes. Treating storm water is an expense no system wants to incur.

Crews from Olathe Public Works keep leaks in check through an innovative chemical grout program that stands as a model for other municipalities.

For the last several years, Olathe has used a system of attacking leaks with the use of chemical grouts. These products are a permanent solution to stop both seeping and gushing leaks as well as to fill voids caused by water erosion or settlement.

They use a combination of three Prime Resins Prime Flex products: 900 XLV, 920and Hydro Gel SXfor most of this work.

“As a utilities group, we are constantly looking to identify our I&I problems (infiltration and inflow) by CCTV crews, manhole crews, construction crews, anybody involved in our sanitary sewer operation,” says I&I supervisor Ira Speer. “As we come across leaks, we rate them based on severity, create work orders and prioritize them in our asset management system. A follow-up visit is made to determine the method we are going to use, whether it’s entering the manhole or probe grouting.”

To keep the operation organized, the I&I group equipped a cargo trailer with the tools, supplies and grout equipment they might need. This has also enhanced efficiency.

“Everything’s in one location. If a crew calls and they find a leak, it’s just a matter of hitching that trailer, and we take off and have everything we need,” says Speer. “The equipment isn’t overly specialized and is really reliable.”

Safety was a chief consideration when Olathe set up its program, so the safe nature of the products was a factor in their selection. Also, the team opted for a pneumatic drill to drill the holes through which they inject the grout. The air-driven drill was a bigger initial investment than other options, and has paid off in the long run from a safety standpoint. “We haven’t had any injuries. It’s a good, safe practice the way we do it. The safety side of it was a big deal for us, and I’m pretty proud of that,” says Speer.

Making data-based decisions is a priority for Olathe. “Our data collection and condition assessment is a major effort right now. With accurate data we can consider, all things being equal, what our priority should be versus just fixing everything,” notes Speer. The City of Olathe believes that chemical grout is a good business decision.**“Using grout isn’t a hard decision. It is very cost effective. It is an easy tool to use and it works.”**

The portability of the equipment has added to their success as well. Some manholes are difficult to access, but all they need is an air hose, the drill, their pump, grout and confined space equipment.

“We haven’t found a spot we couldn’t grout yet,” says Speer.

Another bonus is the low impact of the work. Repairs can be made quickly, leaks are sealed in minutes rather than hours, and where traffic is involved, with much less public inconvenience. Typically, repairs can be made without a full street closure.

The grout crew stands ready to help other city departments as well. They helped seal leaks in a concrete dam spillway, prolonging the life of the structure until replacement is scheduled.

In addition, they used another Prime Resins chemical grout in late summer 2014 to fill voids under 12 sections of sidewalk that settled after a big project. To avoid complete replacement, including the new grass, they injected **Prime Flex 985 LX20**under the

sidewalk to stabilize the soil and prevent runoff from undermining the sidewalks.

Other municipalities could save a lot of money, efficiently and safely, in the long run if they adopted a chemical grout program similar to Olathe's approach. Their ability to permanently stop manhole leaks quickly, safely, efficiently and cost-effectively saves the city from unnecessarily treating storm water and potentially avoiding more disruptive repairs down the road.