



## City of Arlington Uses Pre-Chlorinated Pipe Bursting Method To Replace Aging Water Mains

*By Susan Schrock, City of Arlington Office of Communications*

A neighborhood water main replacement project typically means weeks of noisy construction equipment, torn up streets and intermittent water shut offs for affected residents.

But that may be a thing of the past for Arlington neighborhoods thanks to an alternative water main replacement technique known as pre-chlorinated pipe bursting that is being explored by the city.

Last fall, the City Council approved a nearly \$1.2 million contract with Murphy Pipeline Contractors, Inc., to replace 10,200 linear feet of water main along seven streets in an East Arlington neighborhood near B.C. Barnes Park.

“This area experiences a high number of water main breaks,” said Jessie Allen, Senior Engineer of Operations for the Water Utilities Department. “The customers have experienced multiple unplanned water service disruptions due to the repairs.”

Since the project launched in January, the contractor has been replacing decades-old water mains with a high-density polyethylene (HDPE) pipe that is flexible and non-corrosive. Not only is the plastic pipe designed to last longer and be less prone to breaking, the technique being used to lay the pipe is quicker, less disruptive to residents and more eco-friendly

Pre-chlorinated pipe bursting is one method to replace underground pipe without digging a trench down the road. Eighty five percent of the work occurs underground. This technique allows hundreds of feet of jointless pipe to be installed with minimal excavation, which means less damage to existing landscaping and roadway surfaces and shorter construction schedules.

“This eliminates some additional costs and allows us to replace more lines,” Water Utilities Director Buzz Pishkur said. “More importantly, residents don’t even notice it. We can replace an entire water line while people are at work.”

The pipe bursting method is used by a growing number of communities across the country to replace sanitary sewer and water mains without surface excavation. Murphy Pipeline has replaced water mains using the pre-chlorinated pipe bursting method in places such as Austin, Round Rock and even Arlington National Cemetery in Virginia.

### How it works

Traditional water main construction methods require an open trench to be dug parallel to the old pipe being replaced. With the pipe bursting method, pits are dug at both ends of the pipe section being replaced and at each spot where a home or business water service line connects to the main.

Then the pipe replacement begins.

After 24-hour notification, water service for residents along the main is shut off early in the morning. Linked metal rods are fed through the entire length of the old pipe. Those rods are attached to a large, cone-shaped tool known as a bursting head. As the rods are pulled by powerful machinery, the bursting head slowly and steadily moves forward, causing the existing pipe to fracture and fall away into the surrounding soil. Hundreds of feet of new HDPE pipe, which has been pre-sterilized and pressure tested before installation, is pulled into place behind the bursting head as it moves forward in the space of the existing pipe.

After the existing main is replaced and the homes and businesses are connected to the new main, all holes are filled in and restored back to pre-existing conditions. The process leaves far less damage than the open trench process, which requires long strips of temporary asphalt road patch until the street is rebuilt.

Residents usually have their water restored by late afternoon.

“Customers leave for work and when they return home they have a brand new water main,” Allen said. “This is an efficient way to replace the water main with minimal disruption in high-frequency break areas.”

The method is also more environmentally friendly than traditional construction methods. Less heavy machinery is required, meaning considerably less greenhouse gas emissions.

After work is completed in the east Arlington neighborhood, the Water Utilities Department will evaluate whether to begin using the pipe bursting technique in future water main replacement projects.

The HDPE pipe, designed to last 100-plus years, is expected to reduce maintenance and repair costs for Arlington. Because of shifting soil and aging infrastructure, Water Utilities responded to more than 450 water main breaks last year.



The pre-chlorinated pipe bursting method means the City of Arlington doesn't have to dig an open trench down a street to replace an old water main. That's because 85 percent of the work is done underground.