

CASE STUDY

RESTRAINED-JOINT PVC PIPE PROVIDES SEWER MAIN REPLACEMENT SOLUTION FOR CENTRAL TEXAS TOWN

Municipalities of all sizes continue to look for practical, efficient ways to update their aging wastewater collection systems. In the central Texas town of Brownwood, many of its gravity-fed sewer mains had become severely cracked over the years by heavy clay soil that expands and contracts according to moisture conditions. Tree roots infiltrated these cracks, filling sewer mains and creating back-ups, overflows and crumbling pipe bells. These conditions, combined with population growth on the outskirts of the town's original infrastructure, led city officials to consider a progressive replacement of several miles of pipe using the most efficient, budget-conscious means possible.

CHALLENGE

Excavations for sewer main replacement projects leave behind a trail of damage to roadways, trees, landscaping and other community features. Residents become frustrated with a project's impact on their neighborhoods while business owners, particularly those who rely on drive-by traffic, struggle with loss of revenues caused by traffic diverted from an open-cut job.

APPLICATION

The City of Brownwood turned to static pipe bursting to replace its clay sewer mains with restrained-joint PVC pipe. The city rented a TT Technologies® Grundoburst® 800 G static pipe bursting system with 100,000 pounds of thrust and 200,000 pounds of pullback power.



Pipe bursting has proven to be more cost-effective than open-trench installation under asphalt or landscaped areas at any depth. The process also allows contractors to reduce their carbon footprint since it requires less excavation and disruption of landscaping requiring fewer loads of dirt and rock trucked to dump sites.

When crews in Brownwood began pipe-bursting operations, the maintenance staff used a mix of ten-inch HDPE pipe and 8- and 10-inch CertaFlo® PVC Gravity Sewer Pipe from Westlake Pipe & Fittings to compare the two materials. Crewmembers overwhelmingly preferred the restrained-joint PVC pipe due to its ease of installation and its ability to be assembled during pullback instead of before the pull.

"With HDPE, it takes three people about eight hours to fuse the pipe followed by a cool-down period," said David Harris, director of utilities for the City of Brownwood. "With restrained-joint PVC, we can actually put the pipe together as it's being pulled into the ground and it only takes about 45 minutes to get all the rods in. We don't have to assemble the pipe the day before or show up a few hours early to do it."

Application:
Water & Force Main
Sewer

Project Type:
Static Pipe Bursting

Owner:
City of Brownwood

Product Used:
Certa-Flo® PVC Sewer
Pipe

SOLUTION

With static pipe bursting, City of Brownwood crews replaced the six-inch clay mains with six-inch PVC while increasing the size of the main by two pipe sizes. In a five-year span, a 10-person crew replaced six-inch clay with both 8- and 10-inch pipe. By increasing the size of the sewer main lines, crews were able to increase capacity and grade, thereby addressing two of the primary causes of the city's sewer overflows.

"In every scenario, pipe bursting is less expensive and far less disruptive to our customers than open cut," Harris says. "We're able to burst under roads, flower gardens, fences, trees and other important landscaping, and people really appreciate that. It really shocks people when we finish and we haven't even been there that long. They're always asking how we could replace the pipe without leaving a hole in the street."