

Trenchless TECHNOLOGY™

AUGUST 2004
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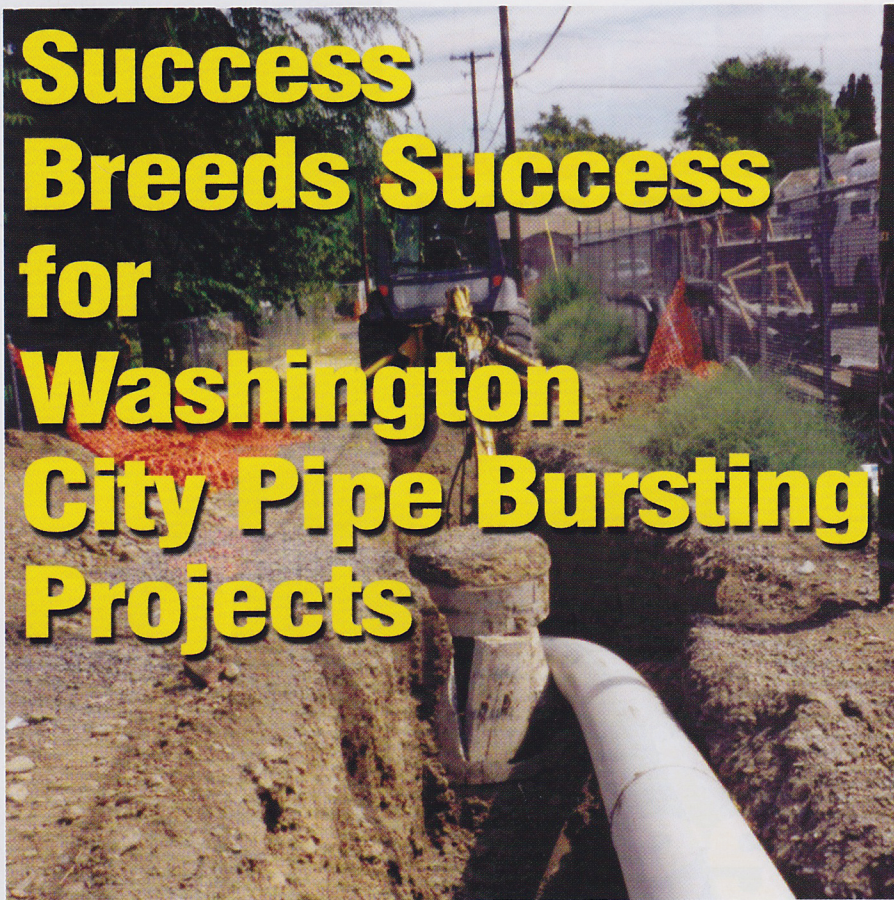
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Success Breeds Success for Washington City Pipe Bursting Projects



While most trenchless methods have grown well into maturity, contractors still have something to prove every time a municipality opts for the more cost-effective and less destructive option. However, as more municipalities weigh the pros and cons of each method, more examples become available to help show the continuing change in philosophies about what works, what doesn't and what is the best bang for their buck.

The City of Toppenish, Wash., for example, began to consider its options back in fall 2001, when it put out a bid a job to replace 10,000 ft of sewer main as part of a multi-phase, multi-year rehabilitation program.

"With the first phase we tried to look at where the City's funds would best fit with what needed to be accomplished," explained Larry Julius, P.E., project manager of the City's consulting engineers, Gray & Osborne Inc. "We opened the bidding to either open-cut and cover or a trenchless method — contractors had the option to bid on either."

The first phase of the project was awarded to A.F. Cannone & Son Excavation & Paving, Walla Walla,

Wash., which subcontracted TTS Northwest Co. Inc., Bellevue, Wash., to utilize pipe bursting on a significant portion of the project. The trenchless design ended up saving the City of Toppenish about \$250,000 — about 25 percent of the original estimate.

Once the project was completed on schedule and without a hitch, the

City was evidently pleased with the success and subsequent cost-savings. So much so, officials revamped the second and third phases, combining the two into a new contract that was notably different than the one drafted a year before.

"The success of the first phase changed the City's philosophy that pipe bursting was the best way to go on the majority of the project," said Jerry Currey, president of TTS Northwest. "The owners and the engineers were able to see the cost-savings, the efficiency of it and the lack of disruption from the technology to the general public. This created the atmosphere to complete the other phases with pipe bursting over open-cut."

When the City opened bidding on the second phase in February 2003, bids were limited to pipe bursting as



Of the entire 29,000 ft to be replaced in Phase 2 of the project, 22,000 ft was installed using pipe bursting.

the primary method. The project involved the replacement of approximately 29,000 ft of vitrified clay and concrete sewer lines ranging from 8 to 21 in. in diameter. Of the entire scope of the project, 22,000 ft was to be installed through pipe bursting, and only the balance by open-cut.

The second phase of the project was awarded to THG Construction Co., Hermiston, Ore., which also sub-contracted with TTS Northwest. THG and TTS Northwest came in as the low-bidder at \$1.6 million. Using TTS 100 and 200 pipe bursting systems, the six-man TTS crew began working in July 2003 through alleys since all the lines ran through residential and commercial areas. Working 3 ½ days a week, TTS was able to install an average of 1,000 ft of pipe per day.

The crew performed a total of 75 pulls, which ranged in length from 200 to 750 ft, achieving a rate of up to five in one day. Keeping up the rapid pace, 22,000 ft of new HDPE pipe was laid in the ground after only six weeks. In addition to the new main, 735 side service hook-ups were installed and 102 manholes replaced. All pipe fusing and fitting of side-service saddles was also done as required.

Cooperative ground conditions certainly played an important role in the rate of construction — consisting of clay conditions to gravelly soil, with some sandy areas and other variations — but Currey said what really helped was the sense of urgency that kept cost down in the first place.

“There may have been some varying soil conditions throughout the project, but the main reason [construction] went so fast was we went in there with a very reasonable price and the key was to get in there, get it done and get out,” Currey explained. “A competitive atmosphere helps owners and the engineers save money, so when we give a competitive price, the key is that we’re going to be able to do it in a certain amount of time. We’re inexpensive enough to where if we don’t, it can cost us money. That can be a very good incentive to get in there and do the job the way you planned.”

One of the main keys to planning the job came with the implementation of camera inspection, which city officials had rarely utilized in the past. The provision for camera work was added for Phase I in 2001, but



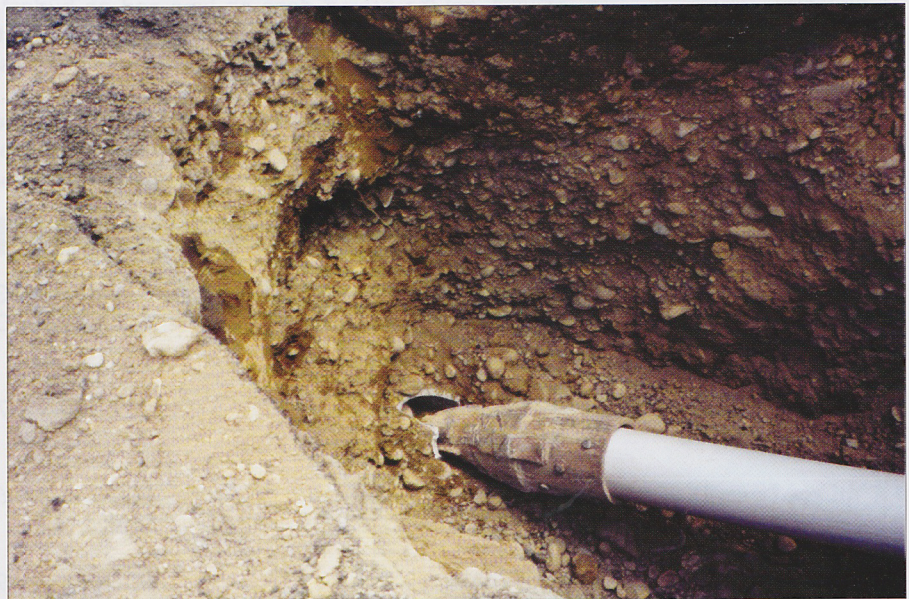
The six-man TTS Northwest crew began working in July 2003 through alleys since all the lines ran through residential and commercial areas.

only as a component of the actual construction process. After seeing the benefits, however, the City determined that it needed to be done during design for Phase II.

Not only did this allow designers to locate specific problems, but since the City had very few records on the sewer system, it also proved critical in ascertaining where side services were located. This gave the second phase less unknowns, less risk, and gave officials the opportunity to get more competitive prices. Which as it turned out, relieved a considerable financial strain that would surely have been felt by all 9,000 people in Toppenish.

“To pay for the [rehabilitation program], the City took out three low-interest loans through a public works trust fund,” Julius said. “Because of the low cost associated with the pipe bursting — which was appreciably lower than the open cut — the City now only needs two loans for all the work that it used to need all three. The difference in cost will provide the additional funds for other projects that need to be done throughout the city.”

Nick Zubko is assistant editor of *Trenchless Technology*.



Successful pipe bursting during the first phase of the project led to more extensive pipe bursting in the final two phases.