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# Bypass surgery in the heart of the city

## QGC team is making pipeline replacement shorter and simpler

Replacing miles of high-pressure natural gas pipeline in populated areas isn't something that happens effortlessly. It's a long, difficult, complicated and expensive process.

Or, at least, it has been. Lately, a team of Questar Gas employees may have found

pipe on State Street between 3300 South in Salt Lake City and the Utah County line in 2007, and 20 miles of smaller-diameter pipe with 24-inch-diameter pipe along 3300 South/3500 South between 2700 East in Millcreek and 9180 West in Magna this year.

"We do heart-bypass surgery, because we have to keep the patient alive," Doty says. In other words, customers must continue receiving

accomplish the construction work only during the warm months. Total time: two years, maybe more.

The old approach of bidding, paperwork, etc., allowed for only about four months of construction each year. So members of the team looked for ways to speed up the process: shorter on preliminary processes, and longer on the construction process.

In 2006, Doty got the okay from Randy Zobell, the since-retired manager of engineering and project management, to handpick a small group of people to manage the project, dealing with everything and everyone involved — contractors, customers, government entities, etc. — to bring a level of continuity that hadn't been there before, from start to finish. (For example, he needed someone who knew government operations, who could secure and manage permits from multiple agencies.)

The results have been impressive. Starting with the Feeder Line 12 project on State Street in 2007, explains Keith Johnson, director of special projects for Questar Gas, the company undertook a simplified design process, deciding to select a contractor that could work with Questar Gas over a multi-year timeline that would involve multiple projects. And they were serious: Potential contractors were interviewed in November 2006, NPL was selected in December and crews were "in the ground" in January 2007.

Meanwhile, the team began looking forward to the next project: replacing Feeder

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Crews prepare to pull a string of new pipe through a bore under busy 3300 South Street in Salt Lake City. Questar's contractor, Northern Pipeline, used axles and wheels instead of stationary skids to support the pipe. This innovation makes the pipe easier to move and protects the weld joints by not pulling them across the rollers on traditional stationary skids.

the key through a doorway marked "shorter and simpler."

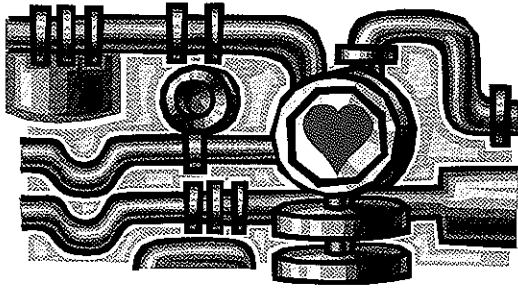
Looking back over the team's work the past two years, Tony Doty, project manager, says they're onto something: a new way of replacing feeder-line pipe. The team, comprising employees from Questar Gas and its contractor — Phoenix-based Northern Pipeline Company (NPL) — replaced 17 miles of smaller-diameter pipe with 12-inch-diameter feeder-line

natural gas, uninterrupted, while Questar Gas employees and contractors are replacing the old pipe with the new. To continue that analogy, it makes sense to perform the surgery as quickly and efficiently as possible.

According to Doty, a pipeline replacement project like 3300 South/3500 South would typically take about 18 months before a contractor was even in place. After that, they would attempt to

Lines 4, 5 and 11 on 3300 South/3500 South Street. So, as the State Street project was winding down, work on the 3300 South/3500 South project was ramping up.

The fact is, says Kim Blair, manager of engineering and project management, this group really had three projects going at once: While they were finishing up State Street, they were under way



on 3300 South/3500 South, and preparing — securing permits, assembling materials, completing engineering — for yet another pipeline-replacement project (Feeder Line 19) in Davis and Weber counties.

Adds Blair, "It's impressive that they've been able to accomplish this work on two of the busiest roadways in the Salt Lake Valley."

Doty says the new methodology included things that may now seem obvious, like allowing NPL every opportunity for input on the projects, and to provide, for example, its own traffic-control, which avoided typical communication headaches and delays between subcontractors.

This is "truly partnering with the contractor," he explains. "Construction meetings weren't adversarial. The tough questions were asked, but in a cooperative environment. There was a lot of open-mindedness among members of the team."

Another change was to meticulously coordinate the public-notification effort:

- They held neighborhood meetings.
- They developed a public-information Web site.
- They mailed advance project notices to residents and businesses on and near the pipeline right-of-way.
- They canvassed every residence and business along the route.
- They e-mailed weekly project updates to residents, business owners and state and municipal government employees, notifying them of progress, changes, etc.
- NPL made sure there was a seven-day

advance contact with everyone along the route before construction began at their location.

- The team didn't sugarcoat the impact the project would have on businesses and homeowners.

"Traffic delays and other temporary inconveniences were unavoidable," Johnson says, "but once the public understood the project, they were much more accepting. Having a customer-contact person on the team allowed them an opportunity to have their concerns addressed and problems resolved as quickly as possible."

Ron Jibson, Questar Gas president and CEO, says, "If someone had told me two years ago we could do these projects with as few customer complaints as we've received, I wouldn't have believed it."

Another example of innovation by the team was the use of pre-fabricated valve assemblies, all conforming to a standard design, that could be installed in hours instead of the days normally required

by individually designed valves.

"If we had managed this project the way we did in the past, we would not have seen nearly as much progress or the savings that we see today," Johnson says. "It's a real pat on the back to Questar Gas for trying something new. Basically, we've changed the culture — the paradigm — for the way the company does pipeline-replacement construction."

But the team isn't content that they've found all the efficiencies available to them. They believe they can refine this process further, streamlining everything a little more on the next project. ■

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