

# A SYSTEMATIC CHANGE IN APPROACH

Durango builds a proactive maintenance program and uses trenchless rehabilitation to keep its customers happy

By Erik Gunn

**T**he Colorado city of Durango is famed for year-round recreation and a popular tourist train. But when it comes to upgrading municipal infrastructure, both of those assets pose major challenges.

Durango has risen to the occasion, though. As the city embarked on a comprehensive rehabilitation of its systems five years ago, it also moved from reactive maintenance to a preventive approach.

"It's paid big dividends," says Steve Salka, Durango's utilities director. "Our maintenance costs have been cut in half. Our operational costs have been cut 25 percent."

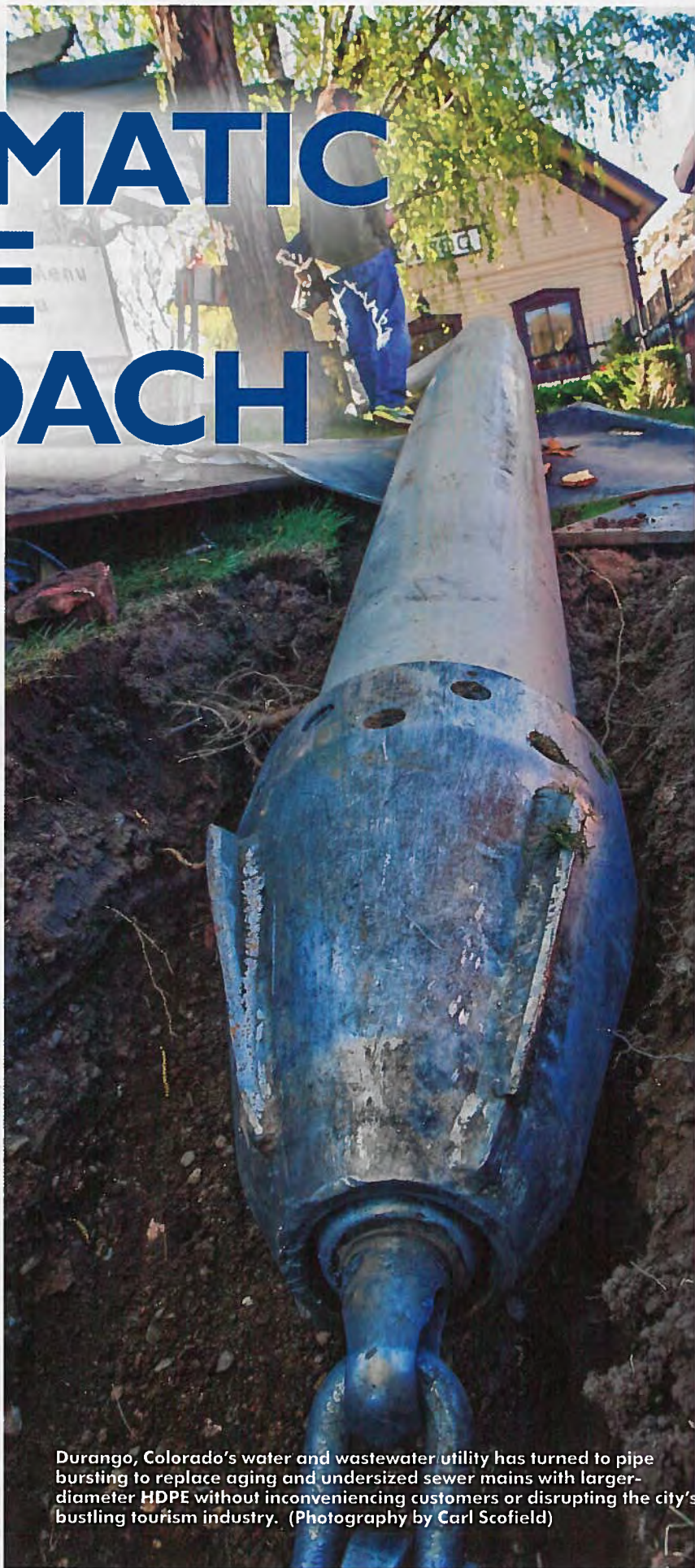
Nestled in the southwest corner of Colorado amid the Rocky Mountains' San Juan and La Plata ranges, Durango has a population of about 18,000 that nearly doubles in the summer thanks to tourist traffic. But that can be deceptive: While those months may be the peak season, the tourist trade is busy year-round.

"What's unique about the city is we have visitors here winter and summer," says Salka. "In the wintertime they're here skiing. In the summertime they're here hiking and biking and rafting."

The dependence on tourism was among the special challenges that Durango faced when it launched its sewer system overhaul five years ago. No city wants to tear up streets or shake up residents' lives when undertaking such a major rehabilitation project, of course. But for Durango, where some streets are more than a century old and tourist dollars power the local economy, the stakes were especially high.

"We have to learn how to do it smarter instead of harder, and be able to keep our community's businesses up and operational," Salka says. "The worst thing we can do is work on a sewer line that can disrupt traffic. We have to learn how to use technology to our advantage."

*(continued)*



Durango, Colorado's water and wastewater utility has turned to pipe bursting to replace aging and undersized sewer mains with larger-diameter HDPE without inconveniencing customers or disrupting the city's bustling tourism industry. (Photography by Carl Scofield)

## Mining town

Founded in 1880 as a mining town, Durango installed its first sewer lines in the early 20th century just to carry away raw effluent. Some lines in operation today go back as far as the 1920s and '30s, Salka says.

Actual treatment of the sewage came decades later. The hodgepodge of lines extended over the decades was corralled into an actual sewer system in the 1950s. The city's current treatment plant wasn't built until the early 1980s.

The earliest lines were made out of clay, with other stretches constructed of Orangeburg pipe. Those oldest lines — the Orangeburg especially — have been failing with predictable frequency in recent years, Salka says.

Salka joined the utilities department, which is responsible for both water and sewer service, in 2012 after a 25-year career in the Navy. His objective was to help fix what local officials had come to see as an increasingly problem-ridden system. There was no systematic cleaning procedure or any equipment maintenance routine, for example.

He made it his first goal "to show them how to kind of rebuild this town so it was sustainable and to take care of our infrastructure," he says.

Almost immediately it became clear that what lay ahead was a costly proposition. The city "hadn't

raised water and sewer rates in over 30 years," he says. "We had to tell the public the truth. We had to raise these rates to take care of the infrastructure. Once we told everybody the truth, everybody was behind us."

## New routines

Part of that investment was in new equipment, but part of it was also for new personnel. The utilities workforce grew to allow for routine maintenance and cleaning, as well as to build a workforce with the skills and numbers needed for the repairs that lay ahead.

"The city is addressing every water and sewer issue aggressively," he says. "We are educating our community" — both homeowners and business operators.

Durango had purchased its first sewer camera in 2011, the year before Salka arrived. After a first round of inspection, cleaning and repairs, the city was able to institute a regular inspection, cleaning and preventive maintenance program that covers the entire system every year.

The first inspections and repair jobs uncovered just how bad things were. "We had sewer lines that had no bottoms in them — we had mini-leachfields out there," Salka says. The fats, oils and grease problem — not surprising in any tour-

ist-driven economy that supports a thriving restaurant industry — showed itself, too.

As the inspection and cleaning routines took hold, Durango logged the findings into its Lu asset management software package, then became a prioritized program to replace the sewer lines throughout the city. "We started taking care of all the worst problems first."

The need for minimal disruption led Durango to choose pipe bursting as

(continued)

## PROFILE:

### Durango, Colorado, Water and Wastewater Utilities

#### POPULATION SERVED:

Winter — 18,000; summer — 34,600-plus

#### SERVICE AREA:

City of Durango, Colorado

#### TREATMENT CAPACITY:

3,000 mgd, average daily flows  
2,600 — 3,000 mgd

#### NUMBER OF EMPLOYEES (WATER AND SEWER BOTH):

35

#### INFRASTRUCTURE:

156 miles of sewer mains;  
18 lift stations; 2,448 manholes

#### ANNUAL OPERATING BUDGET:

Water \$7,442,385; sewer \$8,459,406

#### WEBSITE:

[www.durangogov.org](http://www.durangogov.org)

**Eduardo Santiesteban adjusts the air pressure to 125 psi to drive the HammerHead pneumatic pipe bursting machine while installing new 10-inch HDPE through the existing 8-inch main running under the Durango & Silverton narrow-gauge railroad, a major tourist attraction.**



"We had to tell the public the truth. We had to raise these rates to take care of the infrastructure. Once we told everybody the truth, everybody was behind us."

— Steve Salka



The Durango water department crew works on a leaking commercial water hookup.

**“With pipe bursting we’re able to replace the line, upgrade the line and still keep the sewer lines open and operational. For the customer it had no effect. In some cases they didn’t even know we were doing it.”**

– Steve Salka

its go-to solution for line replacement. “Pipe bursting became a very easy way, and also a way to save 25 percent over the cost of digging a trench,” Salka says.

The pipe bursting technique’s ability to accommodate all the upsizing that the rehab program has required — the city’s replacing 8-inch lines with 10-inch, and 10-inch lines with 12-inch, for example — was an extra benefit. But minimal surface disruption was another key advantage.

“With pipe bursting we’re able to replace the line, upgrade the line and still keep the sewer lines open and operational,” he says. “For our customers, it had no effect. In some cases they didn’t even know we were doing it.”

That’s not for lack of communication. Durango has consistently sought to spread the word of the project. But for the city’s hospitality industry, the repairs were simply business as usual.

“The hotels were still in operation, they were still doing their laundry, the people staying in them were still renting the rooms and had no idea that we were working on their sewer lines. One of the worst things you could do is say, ‘Mr. Hotel owner, you can’t rent rooms for the next two weeks because we’re working on your sewer line.’ That just doesn’t cut it.”

### Railroad crossing

Durango also uses CIPP lining for some projects. But pipe bursting really proved its worth when the city’s rehab work ran into one of the city’s star attractions.

(continues)

## CROSS-TRAINING AND DOUBLE-CHECKING

The Durango sewer and water utilities department employs a total of 34 people, including seven assigned to the city’s sewer treatment plant, six to the water plant, and 17 who are cross-trained to do all maintenance on both the water distribution and the sewer collections systems.

The department’s management staff is cross-trained as well, but in a slightly different way, Utilities Director Steve Salka explains.

Superintendents and chief operators conduct spot checks on their personnel, but it doesn’t stop there.

“Sometimes I’ll swap it around so the wastewater plant superintendent will do a spot check on the water plant and the water plant superintendent will do a spot check on the sewer collections and distributions,” Salka says. “You learn more as a management person by talking to your people and doing those spot checks — getting out there in the field and listening to them — than you do sitting behind your desk.”

It’s an approach that carried over from his days in the U.S. Navy. “When I was in the military they had this saying, ‘Expect what you inspect,’” Salka says. “If you don’t get out, don’t expect it to be done right. Until you get out there, you’ll never know.”



The Durango Utilities team includes (from left) Patrick Farrell, Corey Griffis, Director Steve Salka, Bobby Martinez, Jason Strain and Jarrod Biggs front of one of the utility's Vactor 2100 Plus trucks.

The narrow-gauge Durango & Silverton tourist railroad has been called "one of the most spectacular narrow-gauge steam train rides in America" by the train magazine *Tourist Trains Guidebook*. It's one of the crown jewels of the city's tourism industry.

In March 2017, the city replaced a stretch of 8-inch sewer line running under the railroad track with 10-inch main. Open-trench work would have required tearing up the tracks entirely. The railroad has employees who do track repairs, but to have to re-lay such an extensive portion of the line simply to accommodate the sewer repair would have shut down train trips, potentially for days.

That wasn't all. Next door to the historic station where the work was to be done is a stand of trees that, like the depot, dates back more than a century. Digging a trench there would have required felling many of them.

With the pipe bursting equipment, Durango crews simply had to weave the pipe underground through the area: no trees felled, no tracks torn up, no train rides canceled.

"We pulled 256 feet of pipe and installed it in the ground in an hour and half," Salka says. "Now tell me where you could do that just digging a trench. It didn't disrupt any of their operations."

That even caught the attention of one of the

nearby TV stations, which broadcast a short news story on the job.

### Upgrades and education

Durango's new, aggressive approach to sewer cleaning, inspection and repairs has been accompanied by a concerted effort to inform the public and business owners about the nature of the problems in the system. As a result, it has gotten widespread support for its increased budget and expanded practices.

Cleaning and camera inspections are now conducted annually, covering on average 3 miles of line a week. The city now has a fleet of three Vactor trucks (two Model M2106V units, one 2012 and one 2014, both built in Freightliner platforms, and an older 2008 Model L8500 on a Sterling platform); each truck has jetter/rodder units on the front. It's also taking delivery on a \$74,000 ROVER X sewer camera (Envirosight), which will be paired with the same 2013 GMC R.S. Technical TrackStar operation vehicle that the city's now-retired camera used.

This summer, Durango began work on a \$64 million dollar treatment plant upgrade with widespread support.

At some point the entire system will be replaced with new pipe, and Salka is determined

to make as light a footprint as possible. "Disrupting an entire community one block at a time creates a lot of disgruntled customers."

**"Disrupting an entire community one block at a time creates a lot of disgruntled customers."**

— Steve Salka

It'll take a while, but the goal, Salka says, is to simply keep the repairs going step by step.

"There's a lot of work that has to be done in the city." ♦

### FEATURED PRODUCTS FROM:

**Envirosight**  
866/936-8476  
www.envirosight.com  
(See ad page 2)

**HammerHead Trenchless**  
800/331-6653  
www.hammerheadmole.com

**Lucity, Inc.**  
800/492-2468  
www.lucity.com

**R.S. Technical Services Inc.**  
800/767-1974  
www.rstechserv.co  
(See ad page 31)

**Vactor Manufacturing**  
800/627-3171  
www.vactor.com  
(See ad page 3)