

By Dina Foster

MANAGING MERGERS

Pea Ridge Public Service District (PSD) in West Virginia has acquired a series of small utilities in recent years and has added more than 1,500 customers to its roster. PSD staff members recently began accurate infrastructure mapping while staying ahead of the curve of CMOM and U.S. Environmental Protection Agency regulations with one smart purchase: a compact crawler. Mark Dotson, the PSD's collection system crew chief, said pipeline diagnostics and maintenance were becoming a nightmare with a sewer system dating back to 1964.

A West Virginia PSD plots unknown territory with compact crawler



"There was a series of individually packaged systems and lots of unknown territory," Dotson said. "Being able to map the entire infrastructure is helping to increase response times to emergencies, allow better rehab/replacement efficiencies and better use human and robotic resources."

Teams led by Bryan Chapman, chief operator and field supervisor, were exploring where no one has gone before—or at least since 1964—using the new crawler from EnviroSight.

"We discovered 200 manholes thus far that we didn't know about," Chapman said. "And, the ability of being able to pinpoint and diagnose a section of sagging or collapsing pipe and deploy a jetter truck or order rehab/replacement has made an amazing difference."

Pea Ridge PSD has mostly a concrete and clay pipe system, and clay can be subject to root infiltration and sagging. In some districts, there were no manholes, just cleanouts where homeowners got together and built their own sewer system.

"We have the crawler out four days a week and

now our district neighbors are asking for help," Chapman said. "We have ordered the abrasive wheels for the crawler because of all the grease we're finding."

According to Dotson, the crawler is the crew's greatest asset in the goal of mapping the entire PSD infrastructure. The department has seen resource allocation and response time greatly increase. Crew members often were called out in the middle of the night. One night, for example, a pumper truck pumped out a line all night and the next day, with two employees rotating in shifts. The source of the problem was unknown, so a contractor called Pipe Eye located the manhole by using a crawler. "That was our lightbulb moment," Chapman said. "This situation led us to the decision to purchase a crawler."

Dotson and Chapman saw the compact crawler at the Charleston Expo. "We knew we needed a compact, tough and agile crawler that could make 90-degree turns," Chapman said. "We purchased the crawler through A&H Equipment after seeing four manufacturer demos. Many of our manholes have the old blocks with a bottom clay tile, so with a larger crawler we couldn't even set them in. For our pipeline sizes and situations, the ROVVER 125 met all of our needs."

Subsurface Discoveries & Benefits

Once the PSD started using the crawler, Chapman and his team found manholes in places one would never imagine. "So far, we have completed mapping 18 of our 43 lift stations," he said. The discovery of the 200 uncharted manholes has required extensive rehab. "They've been abandoned for decades, so many of the lines are sagging or in danger of collapse."

Now, Chapman plans to use the crawler for the rehab effort of pipe bursting and pipe relining. "Some of the manholes in one district we took over had no metal lids, so we couldn't even use a metal detector," he said. In addition, 500 ft of manhole might have two or three cleanouts.

"We'd find eight manholes on one block. It's also easier to look into our lift stations, which go down 50 ft deep. We will drop down the camera on the cable to find the problem," Chapman said.

Pea Ridge PSD engineers report that they are also pleased with the ease of the Wincan Software, integrating it with GIS mapping and easy storage. "The amount of time and labor saved is almost



The PSD has realized staff allocation and cost savings, among other benefits, as a result of its new compact crawler.



astronomical—I cannot even put a number to it,” Dotson said. “Think about days of pumping, several employees being pulled out and the attempt to use paper maps, which are often wrong. This has really freed up our staff and allowed us to actually refurbish the system.”

Rehab & Emergency Prevention

The next big project with the crawler is rehab. “Now that we’ve found them, we need to fix them—for example, do some pipe bursting and pipe relining,” Chapman explained. “We know exactly where the taps and laterals come in and where the homeowner lines are located, so we can tell the rehab contractor. That saves us quite a bit of money since they don’t have to do the investigating and we can deploy them exactly where they need to be.”

Chapman credits the purchase of the crawler with greatly reducing emergencies because the PSD can now do preventative inspections. “We can find a line that is about to collapse before it becomes a 2 a.m. emergency,” he said. “Then we can repair it on our schedule.” And that, according to Dotson and Chapman, is priceless. [www](#)

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