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BRINGING NEW TECHNOLOGY IN HOUSE

St. Paul Regional Water Services is taking an active role in waterline replacement projects

PAGE 10

GRAEME CHAPLE
Assistant Distribution Manager
St. Paul Regional Water Services

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LOCATION AND LEAK DETECTION



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Luke Laggis

IT'S NOT ABOUT THE SIZE OF YOUR UTILITY

Water and wastewater utilities big and small have the power to better their communities

Luke Laggis

We've covered stories on a lot of big cities in my 13 years as editor of *MSW* - Los Angeles, Houston, Chicago, Miami and many more. But sometimes the stories of small towns and rural communities speak equally as well to what this magazine strives to represent: innovative, proactive utilities operating above the status quo to better their systems and communities.

That's in no way to say those big-city utilities I mentioned aren't doing extremely impressive things. They are. But it's sometimes easier to identify with little utilities where just a few people are doing everything.

When it comes to small towns and small utilities, we haven't covered one smaller than LeRoy, Saskatchewan. Our profile of the town of LeRoy in this issue represents a remarkably forward-thinking approach from a tiny utility with a relatively small budget.

The town is building its future around water. Town foreman Kirt Holowachuk is a fixture at town council meetings, advocating for improvements to sewer and water infrastructure that he believes will add value to the community and promote economic growth.

With the current assistance of only one full-time employee, his department's responsibilities include sewer and water infrastructure, road maintenance, urban forestry and operating the town's ice rink in winter. But they're not thinking small.

To support a gradual population increase, Holowachuk first prioritized improvements to the wastewater system, focusing on upgrades to handle greater capacity. He next turned his attention to water supply and a slate of improvement projects that included developing a second 475-foot well with its own distribution pump. The well systems can run independently of each other and serve the town during emergencies and routine maintenance.

Now, the town is poised to accommodate economic and population growth expected with the nearby construction of a large potash mine.

The successes of this tiny utility are impressive, but so is the approach St. Paul (Minnesota) Regional Water Services has taken in upgrading its water distribution infrastructure. Like the crew in LeRoy, St. Paul has a do-it-yourself ethos and has developed a successful in-house pipe bursting crew to repair and replace aging water lines.

Four years ago, the utility weighed the cost of contracting out pipe bursting work against the option of doing the work with in-house crews. Since then, the Minnesota utility has found that going it alone indeed is cost-effective in many cases and a better utilization of agency manpower.

Crews are now methodically pulling in new water main to replace old. Three replacement crews work through each summer construction season, with one of them specifically assigned to bursting work. Bringing the work in-house has helped the utility get the most out of its construction budget and the crews.

These utilities couldn't be farther apart in terms of size and scope, but they're both great examples of how to make the most of available resources while promoting system and community integrity.

Big or small, your utilities all serve the same mission. And you all have lessons to share.

Enjoy this month's issue. ✦

Comments on this column or about any article in this publication may be directed to editor Luke Laggis, 800-257-7222; editor@mswmag.com.

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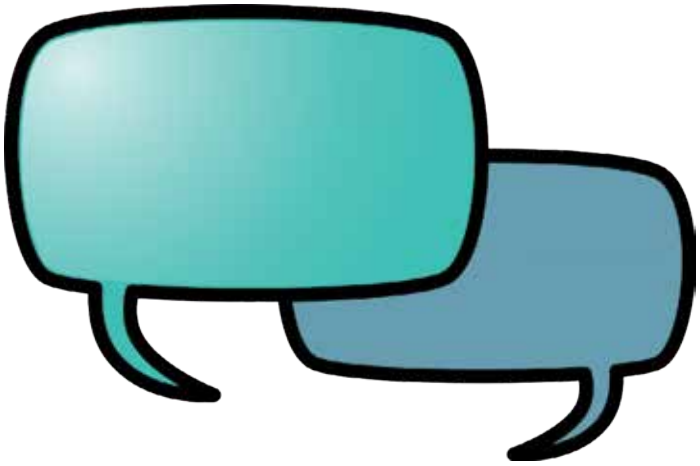
COLLEGE COLLABORATION

Intro to Wastewater

Louisville Metropolitan Sewer District and the University of Louisville recently collaborated on a Cornerstone program to introduce students to the basics of wastewater infrastructure. Read more about the program in this online exclusive article. **mswmag.com/featured**



WE NEED TO TALK

Leading the Biosolids Conversation

A recent article in the New York Times raises the specter that biosolids contain the "forever chemicals" known as PFAS, referring to biosolids as "sewage fertilizer." Industry leaders respond by calling it a low blow against clean-water utilities. **mswmag.com/featured**

OVERHEARD ONLINE

"Whether it's a natural disaster or an unexpected crisis, having a solid plan in place will give you the confidence to handle the situation and keep things under control."

—10 Tips for Creating a Disaster Preparedness Plan
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STOCKHOLM JUNIOR WATER PRIZE

UK PFAS Project Wins

Christopher Whitfeld and Wenqi (Jonathan) Zhao from the United Kingdom recently received the prestigious Stockholm Junior Water Prize 2024 for their work on PFAS pollution in the Thames Basin. HRH Crown Princess Victoria of Sweden presented the winners with their award during a ceremony at World Water Week in Stockholm. **mswmag.com/featured**

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BRINGING NEW TECHNOLOGY IN HOUSE

St. Paul Regional Water Services is taking an active role in waterline replacement projects

By Giles Lambertson

Municipal sewer and water agencies usually rely on contractors to repair infrastructure or undertake new construction projects. St. Paul Regional Water Services executives concluded there might be a better way to get the work done.

Four years ago, the utility weighed the cost of contracting out pipe bursting work against the option of doing the work with in-house crews. Since then, the Minnesota utility has found that going it alone is indeed cost-effective in many cases and a better utilization of agency resources.

"We had a contractor do our pipe bursting for eight or nine years," says Graeme Chaple (rhymes with maple), who is an assistant division manager at the utility. "Then we began to consider the challenge of always having to coordinate our crews with the schedule of a busy contractor. We decided to do a trial run of pipe bursting on our own."

The regional water services agency learned that doing the work in-house indeed was doable under the right circumstances. "There was a learning curve. You have to get your staff trained and up to speed and learn which crews are better at it than others. But we learned it is cost-effective."

One argument for the initiative is that utility crews already were highly involved in the pipe bursting work even when a contractor was operating the bursting machine and dragging in the new pipe. Maintenance crews would excavate the street openings at either end of the pipe being worked on, be on hand as the bursting was happening, and then reconnect the pipe and close up the openings.

The utility rented pipe bursting equipment for a year from TT Technologies, the Illinois manufacturer that has been making trenchless tools for 45 years. St. Paul Regional Water Services also purchased HDPE pipe-fusing equipment from a local vendor and provided staff training.

A short segment of water main on a dead-end street was selected for the first attempt by the utility crews. "It was a street off the beaten path. We knew if we had an issue, we could easily dig up the pipe and deal with it. It was a good place to cut our teeth." It was a success.

Recordkeeping

Upgrading the water main system is an ongoing project.

"Our distribution system has about 1,200 miles of main. The oldest segments are 130 years old," says Todd Blomstrom, the water system's assistant general manager. "We're currently replacing 7 miles of main a year and soon will be increasing that to 12 miles a year."

Water Services worker Andrew Ruiz operates the Grundoburst pipe bursting equipment from above the pit. The high vantage point allows him to spot any movement or shifting of the equipment as the pull progresses.

PHOTOGRAPHY BY BRAD STAUFFER

> "When a break does occur, it's immediately identified and fixed."
>
> **Graeme Chaple**

PROFILE:
St. Paul (Minn.) Regional Water Services

SERVICE AREA:
St. Paul and 13 other adjacent cities and towns

DEPARTMENT EMPLOYEES:
250

CUSTOMERS:
446,000

CONNECTIONS:
95,000 service lines

MILES OF WATER MAIN:
1,200 miles

HYDRANTS:
10,000

AVERAGE DEMAND:
39 mgd

TREATMENT PLANT CAPACITY:
121 mgd

WEBSITE:
stpaul.gov/departments/saint-paul-regional-water-services

SPRWS assistant distribution division manager Graeme Chaple on site in the Highland Park neighborhood of St. Paul during a water main replacement project.

"It is critical to make sure we are very accurate in our records of what infrastructure is in the ground."

Graeme Chaple

The goal is to try to get to a 100-year cycle with the infrastructure, according to Chaple. That is, the utility wants to have pipe in the ground that is no older than a hundred years. So, the work steadily moves forward. In June, 10 anticipated pipe maintenance projects were listed on the utility's website and many of them involved pipe bursting.

The system's in-ground waterlines range from 4 inches to 42 inches in diameter, with most being 6 inches to 8 inches. To upgrade the system, some of the 6-inch pipe being burst apart will have an 8-inch line pulled in instead. All of the burst pipe is cast iron.

Chaple says the biggest hiccup his crews experienced in their bursting was when they encountered a segment of water main that wasn't cast iron. "It was about a 40-foot section of ductile iron; bursting didn't work real well," he recalls. "So, we burst the cast iron on either end and then opened a trench and replaced the 40 feet."

Among the lessons learned in that episode was the importance of record-

CHOOSING THE RIGHT METHOD

When a water main deteriorates or out-and-out implodes, restoring integrity to the line is Job One. The method of restoration varies.

The time-tested way to fix a broken pipe is to dig up the piece of infrastructure and wholly replace it. This open-trench repair work still is utilized by St. Paul Regional Water Services, but not nearly as often as years ago.

"We have four methods of pipe repair, other than open trench work," says Todd Blomstrom, assistant general manager of the Minnesota utility. "Pipe bursting, in-place lining of pipe, directional drilling and cement mortar lining of older pipe lacking the mortar. For each of those four methods, there are advantages and disadvantages."

Determining the suitability of a repair method involves evaluating such factors as the condition of the work site and pipe and the density of services along the route of the pipe. In both directional drilling and pipe bursting, utility crews traditionally dug the working pits at either end of the project and restored the pit area at the end of the project. In the case of bursting, the utility now does it all.

"St Paul Regional Water Services traditionally performs about 40% of the water main replacement work in-house with our field crews, so taking the whole pipe bursting work in-house was a natural progression," says Blomstrom. "It has been very economical for us and less disruptive for residents."

The regional water utility does some water main repair work in partnership with city, county and state governments when waterlines run along the path of street or road projects. "We partner with those agencies, but a fair amount of repair work is done outside street or road projects."

The work not done in conjunction with transportation projects usually has residents wondering what's going on. Graeme Chaple, who is assistant division manager at the utility, cites the reaction of property owners along a stretch of street where a pipe bursting project recently was completed.

"The area had a cluster of water main breaks a year and a half ago, four breaks in a six-week period. So, when the residents asked, we told them we were replacing all those mains. They responded, "Oh! Oh, yes. I remember those problems."


New 8-inch HDPE pipe attached to the bursting head will replace a cast iron main buried 7 feet deep.

St. Paul Regional Water Services staff that are most directly involved in replacing water mains include (from left) Andrew Ruiz, Samuel Caliguire, Dylon Jotblad, Mike Bailey, Ray St. Germain, Matt Schmidt, Adan Moreno-Paramo, Spencer Mead, assistant distribution division manager Graeme Chaple, Yesy Carbajal, Greg Sorenson, Joe Moy, Jake Moy, John Kirk and Dustin Schluessler.

keeping. "It is critical to make sure we are very accurate in our records of what infrastructure is in the ground."

Mastering the process

The schedule for a bursting project starts in the fall for work beginning the next spring — this being Minnesota, cold weather limits the work season. About a month before ground is broken, letters are sent out to property owners along the length of pipe to be burst. Crews are selected and mobilized, the pipe is delivered and fused for dragging into place. Then pits at the ends of the selected pipe are excavated and two to three weeks of pipe replacement activity ensues.

Chaple says the biggest issue for the system's bursting team is the sanitary sewer lines that intersect with the line being replaced. Because water pipes are usually buried 7 to 8 feet deep to avoid freeze issues, they often are laid within close proximity of sewer lines. Consequently, the pipe bursting sometimes results in nearby sewer lines being broken, too.

"They are clay pipe and if the bursting comes within about 12 inches, the clay breaks," Chaple says. In summer 2024, a 415-foot bursting of pipe on Carter Avenue encountered five sanitary sewer lines. Two of them were broken. Because the problem was foreseen, the broken pipe was fixed before nightfall.

"We anticipate that we will break some of them," Chaple says matter-of-factly, "so we have an excavator and a Vactor hydroexcavator positioned for repair work. A televising contractor is on hand and sending a camera up the sewer services line while the bursting is going on. When a break does occur, it's immediately identified and fixed. The sewer pipe is excavated, a PVC replacement is fitted into place, and we move on."

In this way St. Paul Regional Water Services is methodically pulling in new water main to replace old. Three replacement crews work through each summer construction season, with one of them specifically assigned to bursting work, though the crews are cross-trained to sub for one another as needed.

"It is kind of fun watching a new crew doing bursting," says Chaple. Some crew members had reservations about bursting instead of open-trench replacement, but have come to enjoy the work. The utility continues to rent equipment from TT Technologies and to receive technical training as needed. All crew members are certified in fusing the pipe.

> **"We're currently replacing 7 miles of main a year and soon will be increasing that to 12 miles a year."**
>
> **Todd Blomstrom**

"Our staff members have been wonderful," Blomstrom says. The assistant general manager describes the crews as engaged, doing a good job, very positive about the new technology and committed to mastering it.

Maximizing resources

Not every failing water main in the St. Paul system is a good candidate for bursting, Chaple says, because of the density of services along the route. "The older part of St. Paul is built on 40-foot lots. So, attaching all those lines, you have so many service cuts, you might as well have opencut the whole street. Bursting works really nicely on streets with larger lots or where all the properties are on one side of the street or in the suburbs where there are really big lots."

The utility plans on completing a mile and a half of pipe bursting each working season. That is a level that fits the utility's budget and crew size. "Six hundred feet or something wouldn't justify the training and renting of equipment," Chaple says. "But since we have dedicated one crew to it the entire construction season, May through November, we know we are going to get that mile and a half."

Chaple credits utility leadership with the decision to bring pipe bursting in-house, thereby getting the most out of the construction budget and the crews. "Our management has been pretty good about promoting the idea of, 'Let's try something new.' It might fail but at least we get to try new technologies and see if we like or don't like them." ✦

REMOVING LEAD LINES

St. Paul Regional Water Services is dedicated to ridding itself of lead water pipes. It's a big undertaking.

Numerous dangerous health issues are associated with consumption of water that passes through pipe fabricated of lead, issues that weren't apparent when lead pipe was in widespread use. It was a common type of conduit in St. Paul and other Minnesota communities until about 1930 when plumbing codes banned it, though it was utilized again during World War II when copper was in short supply.

The state of Minnesota has prioritized replacing lead pipe in the state's communities. Minneapolis and Duluth upgraded their efforts this year, but the St. Paul water system has been working at it for several years. In 2023, it implemented a 10-year plan to eliminate all lead pipe.

"Our service area contains 25,000 lead service lines we are committed to replacing," says Todd Blomstrom, assistant general manager of the utility. "Our distribution field crews have become very skilled and efficient in replacing lead service lines."

The work is moving ahead. According to Graeme Chaple, an assistant division manager, the utility "removed just over 850 lead lines in 2023 using field crews and a contractor. In 2024, we have planned for the removal of 500 lines by in-house crews and another 700 by a contractor."

While current funding allows removal of perhaps 1,500 lines a year, the agency has secured additional funds that would bump up removal to about 3,500 a year for the next two years.

NONINVASIVE PIPE DATA COLLECTION

Juneau benefits from pipe condition assessment licensing solution for water utilities

By Jay Shah

City of Juneau engineering associate Nick Druyvestein lowers an ePulse sensor onto a mainline valve.

The Alaska city and borough of Juneau produces and distributes 1.2 billion gallons of water annually by drawing from separate and redundant ground- and surface water sources. Around 50 pump stations deliver potable water via a network of over 180 miles of pipe, directing into a series of reservoirs that in turn feed thousands of hydrants and terminal water distribution connections.

Most of the water for downtown, in the hospital area, and on Douglas Island comes from the Last Chance Basin Aquifer. All areas north of the hospital primarily receive surface water out of the Salmon Creek Water Filtration Plant.

The city's public drinking water system is one of over 153,000 similar public systems that provide potable water across the U.S. Approximately every two minutes, a pipe breaks in the U.S. amounting to around 2.1 trillion gallons of water lost every year. Since most of the nation's infrastructure was built between the 1890s and 1940s, it's not that surprising. The city of Juneau has one to two pipe breaks per year, at a repair cost of $200 to $1,000 per foot.

The city is undergoing a replacement program of its water mains to maintain reliable and consistent service to its customers. "Pipe replacement decisions are made based on a comprehensive look at break history, age, location and ePulse results," says city of Juneau Project Manager Abner Miller.

The city chose to license ePulse, an acoustic velocity testing technology by Echologics, to noninvasively provide critical condition assessment information and simultaneously check for leaks using its own utility staff to collect field data. This was initiated to improve capital budget spending and reduce the replacement of water mains in good condition, as well as establish a baseline understanding of pipe condition.

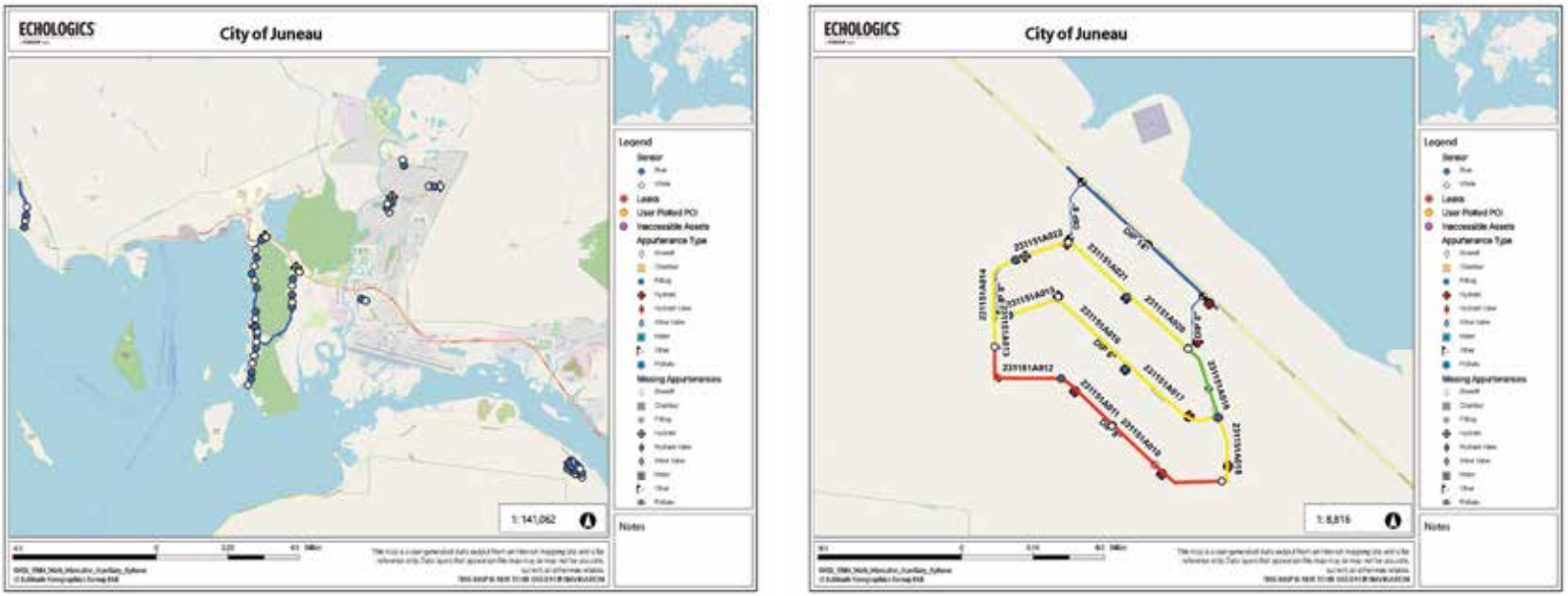
"We first used ePulse in 2022 and found the results to be very good," Miller says. "It is a noninvasive, nondestructive method of data collection for pipes in the ground and there is no need to stop the water service or alter traffic."

In 2022 the city tested over a mile of water distribution pipe in the South Douglas area. Historically, Douglas Island experiences a higher water table and significant runoff from the mountains that accelerates the corrosion of the ductile iron water pipes. The entire area's water network was prioritized by the water department to be replaced with HDPE within the next five years.

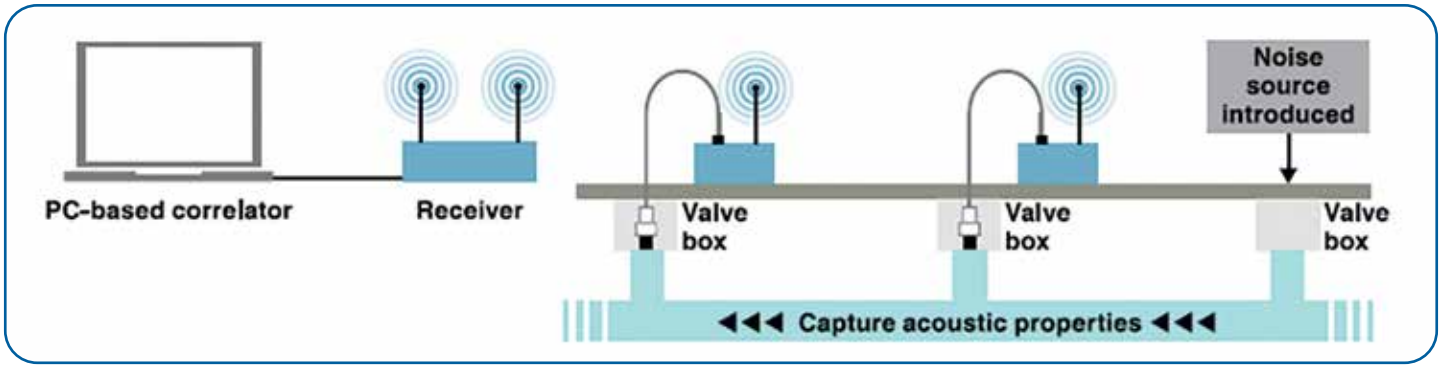
"It's only practical for us to replace approximately 1,500 feet of water pipe per year, so the goal was to identify the particularly bad segments so we could prioritize projects to replace those segments accordingly," says Nick Druyvestein, engineering associate at the city of Juneau.

Acoustic velocity testing

The city adopted AV testing of its water mains as a first-level diagnostic approach of its network. To collect



Juneau overview maps show blue and white dots where ePulse sensors are deployed (left) and a color coding of pipes in a separate area to be assessed.



Acoustic velocity testing provides noninvasive critical condition assessment information while simultaneously monitoring for leaks.

the required data in the field, city staff attached acoustic sensors to existing appurtenances such as valves or hydrant isolation valves. An acoustic wave is induced in the pipe externally by gently tapping on a fire hydrant. The velocity of the acoustic wave is measured as it travels through the pipe segment.

The acoustic velocity is calculated based on the sensor spacing and time delay between the measured acoustic signals. The average structural wall thickness of the pipe segment is calculated from a theoretical model of its relationship with the acoustic velocity, the pipe diameter, Young's modulus of the pipe wall and the bulk modulus of water. Average wall thickness results are most suitable to evaluate the remaining service life of water pipes for long-term planning of replacement needs.

GIS mapping

The city started GIS mapping about 10 years ago, primarily for fire/public safety purposes. As part of the condition assessment, the city needed to refine its GIS of the water system and develop maps to visually display the assessment results.

"We started to ramp up the GIS utility work in 2023 with the intent to build out our water system in GIS as we collected data for ePulse," Druyvestein says.

Implementation

As Juneau is somewhat remote, the utility chose to reduce the costs of bringing in field crews to survey pipe, and instead had staff undergo a three-week training program on how to effectively use the technology. This included classroom training and real-life field data collection on the city's water network. The license of this technology allowed the city to collect field data on its own schedule and then send the data to Mueller for analysis. The city of Juneau is the first utility to license this technology to enable its own staff to collect the acoustic data in the field.

The pipe segments that were marked for condition assessment were varying lengths and sizes, ranging from 6- to 18-inch ductile iron pipe. Since the adoption of this technology, the city has conducted two condition assessment projects totaling about 6 miles of water main or 3% of its network.

ePulse provides a report on the mean hoop thickness of each pipe segment, so that the city can prioritize where it will start replacement. The city plans to continue testing about 5 to 10 miles of pipe every year in order to complete the assessment of 100 miles of ductile iron pipe. Data obtained through this condition assessment program will guide capital budgets and reduce risk by helping prioritize pipe replacement in areas with a higher level of pipe wall degradation. ✦

"Pipe replacement decisions are made based on a comprehensive look at break history, age, location and ePulse results."

Abner Miller

Jay Shah is a senior manager of project management for Mueller Water Products, with 13 years of experience delivering condition assessment projects for utilities globally.

MUNICIPAL INNOVATIONS '24

Water and wastewater utilities are always on the lookout for ways to boost efficiency and reduce costs. Municipal Innovations is a special section dedicated to companies providing solutions to the problems your utilities face everyday.

GapVax Offers Quality-Built, Dependable G7 Trailer Jetter

"Designed by the operator, for the operator" is the mindset behind all GapVax products. This was the same approach used when engineering the GapVax G7 trailer jetter.

Commonly used, quality parts were incorporated so customers will have the same dependability they've come to know and trust. The G7's user-friendly design along with proven components are a customer favorite, according to the manufacturer.

A simplistic design, quality components and high-efficiency engine all come together to give you a great jetter option. The GapVax G7 trailer jetter is NATM certified. The water tank is made of polyethylene plastic and offers a 500- or 700-gallon option. Water system options include 20 gpm at 2,000 psi; 30 gpm at 3,000 psi; and 40 gpm at 2,500 psi. The jetter hose reel includes a hydraulically powered direct-drive gearbox with heavy-duty swivel, 180-degree rotation, footage counter, and 800-feet by 3/4-inch capacity hose reel.

"The GapVax Dual Reel trailer and the G7 Viper system were introduced at the 2024 WWETT Show and have been a huge hit among our customers," says a company spokesperson.

GapVax Inc. evolved from its sister company, GAP Pollution & Environmental Control Inc., was founded after the 1977 Johnstown Flood. Gary A. Poborsky saw a need to help with the flood cleanup around the city and he got to work with a used vacuum truck. From that point forward Poborsky's business kept growing. Learning from the service company and operators what was needed to get the job done, Poborsky set out to build his own equipment, thus creating GapVax Inc. GapVax began custom building industrial and municipal vacuum equipment in 1989 and has continued to grow and become a leading manufacturer in the industry.

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Vaughan Co. Ensures Fast Lead Times for Reliable Pumps

When the going gets tough, you can turn to the Vaughan Chopper Pump, which can handle everything from scum to food processing to silt ponds, according to the manufacturer.

This centrifugal pump has the unique ability to chop all incoming solids prior to pumping. Not only does this protect the pump from clogging, but it also benefits downstream components, processes and the environment. All wear components are cast steel and heat treated for maximum impact and wear resistance. These heavy-duty patented components are engineered together to create the ultimate pump for handling severe solids.

VAUGHAN ROTAMIX SYSTEM

The Vaughan Rotamix System is a cost-effective means of mechanical hydraulic mixing for sludge tanks, digesters and other high-volume applications.

Combining high-velocity mixing nozzles and the Vaughan Chopper Pump, the Rotamix creates a multizone mixing pattern while simultaneously chopping all accumulated solids. This produces an easy-to-pump, homogeneous mix that eliminates floating mats or solids settled at the bottom of your tank.

With guaranteed performance and a 10-year full nozzle warranty, the Rotamix System aims to keep your operations running smoothly.

VAUGHAN CONDITIONING PUMP

The Vaughan Conditioning Pump is here to save you from costly cleanout cycles and maintenance. This submersible chopper pump is mounted on a portable stand and fitted with a high-velocity mixing nozzle. The Conditioning Pump recirculates the contents of the wet well, chopping and mixing to produce a homogeneous mixture that is more easily pumped out. As the pump is mounted on a portable stand, it can easily be used in multiple applications at a single job site, facility or municipality.

From reducing vacuum truck visits to removing floating grease and debris in your lift station, the Vaughan Conditioning Pump is your portable solution for next-level sludge and grit mixing.

Vactor Debuts 27-inch Vacuum for 2100i Combination Sewer Cleaner

Vactor recently released the 2100i Combination Sewer Cleaner with the new option of a 27-inch vacuum for longer pulls and deeper suction for solid waste.

"This robust vacuum enables our customers to reach waste from a farther distance," says Tyler Skolek, Vactor product manager. "The new option gives those customers as much vacuum as they need. As with the current 2100i, this feature offers our customers the same reliability and efficiency that Vactor is known for."

The 27-inch blower offers more vacuum than other iterations of blowers on the Vactor 2100i Combination Sewer Cleaner. To accommodate the longer vacuum, modifications to the 2100i include reinforcement on the debris body and more structural brackets for the debris body recess. Two silencers help reduce noise for a quieter operation. An additional benefit is it runs cooler with an additional inlet to keep the blower cool.

Material can be moved in two different ways: dilute phase, where air is mixed with material to increase the conveyance distance, and dense phase, where it is a solid column of material. The ability to move material in the dense phase is directly related to the vacuum's power level. The 2100i Combination Sewer Cleaner with the 27-inch vacuum offers an efficient solution for heavy, dense material being conveyed over long deep distances.

"Customers also may see an increase in durability of their 2100i because the inlet silencer allows cool atmospheric air to enter the blower at high vacuum levels, which helps cool the blower and reduces the chance of premature wear," Skolek says.

POWER AND PERFORMANCE

Beyond the longer vacuum, the Vactor 2100i still offers the same precision, power and performance. The IntuiTouch cab controls and IntuiTouch control panel make functions as simple as the touch of a button while also combining all cleaning system functions into one control panel.

A combination sewer cleaner like the Vactor 2100i is commonly referred to as a vacuum truck, but it is actually an air conveyance machine. That means it can work in a variety of applications including reducing clogs in sanitary lines, storm sewer lines and catch basins; routing cleaning and preventive maintenance of sewer lines, lift stations and catch basins; and working through sludge buildup at water treatment plants and vacuum excavation work.

"While Vactor's other blower configurators are also excellent for these tasks, the 27-inch 2100i is particularly well suited for handling tougher and longer distance jobs with greater efficiency," Skolek says. "Vactor's priority is always the customer. Our customers wanted a 27-inch blower so we provided that as an option on one of our most popular sewer cleaners."

Skolek adds that it's really a matter of air movement, so customers with the 18-inch vacuum also can work efficiently and productively. "To drive the 27-inch blower, you need additional horsepower. That means selecting a 27-inch blower will reduce water capacity and payload to accommodate the larger engine for that horsepower. So, it's really up to customers to determine which one best fits their needs. We love giving our customers those options to customize and get what they need for their applications."

VACTOR®
Subsidiary of Federal Signal Corporation

Vactor has been in business for more than a century as an American manufacturer. The company's expertise and leadership in sewer cleaning dates back more than 50 years. As an innovator, Vactor created the first combination sewer cleaner, saving time and money while improving productivity and safety for operators.
815-672-3171 | sales@vactor.com | vactor.com

PVC C900: The Tough and Reliable Solution for Municipal Water Systems

C900 has become the most common PVC pressure pipe product used in municipal water pipe systems. This is because it's corrosion-resistant and sustains water quality throughout its long lifetime. These benefits — as well as cost-effectiveness and ease of installation — have made C900 the preferred pipe for waterworks projects, including potable water, reclaimed water and sewer applications.

The benefits of C900 include:

Corrosion resistance. C900 is immune to nearly all types of internal and external corrosion. As a non-conductor, PVC is not impacted by electrolysis or susceptible to degradation from alkaline or acidic soil conditions. No additional bagging or cathodic protection is required. A correctly installed Heritage Plastics system will provide long-term service at reduced operating costs.

Exceptional strength and durability. C900 has demonstrated high performance in all weather conditions and climates across the U.S. for water mains, sanitary sewer force mains and fire lines. Every piece of Heritage Plastics C900 is hydrostatically proof-tested. The ability of PVC to bend without breaking allows the joint and pipe assembly to compensate for minor earth movements, which may cause problems in more rigid, non-PVC assemblies.

Superior flow characteristics. Due to its extremely smooth inner surface, C900 has a Hazen-Williams flow coefficient of C=150 or better. This reduces friction between pipe walls and water moving through the pipe, resulting in a lower burden on pumps and reduced pumping costs. C900 also resists tuberculation throughout its long life span.

Water quality. Unlike other materials, PVC is proven to sustain water quality over time and eliminate potential contamination resulting from pipeline degradation. Extractant water purity tests, performed by independent test laboratories, ensure that Heritage Plastics pipe meets the requirements for drinking water as specified by NSF Standard 61.

Atkore – Heritage Plastics offers PVC C900 in 4- to 12-inch trade sizes that meet AWWA, UL and FM standards. Visit atkore.com to download product specs and find a sales agent.

Atkore™
Heritage Plastics

Atkore is a global manufacturer of industrial products with 5,000-plus employees and 49 manufacturing and distribution plants. Atkore – Heritage Plastics produces a wide range of PVC and HDPE products for municipal waterworks, plumbing, irrigation, industrial, and electrical applications. With its expansive product offerings, large network of manufacturing locations and focus on customer service, Atkore provides an end-to-end solution for water infrastructure projects. Atkore – Heritage Plastics pipe is made in the U.S. and is Build America, Buy America Act compliant.
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about our Municipal Waterworks products atkore.com/Markets/Water/Municipal-Waterworks

Raise Manholes in Minutes With CAP's Halo Composite Top Riser Ring System

Keeping up with road infrastructure demands is no easy task. Even raising manhole covers every 5-10 years for road paving can cost $5,000 per manhole, plus the time spent digging, lifting, hauling, replacing, curing and waiting.

Not anymore. The Halo top riser ring system from Composite Access Products (CAP) eliminates the need for all of this. You can raise manholes in minutes, not days, while saving $5,000 per manhole, according to the manufacturer.

FIRST OF ITS KIND

The Halo is made in the U.S. and is the first and only composite top riser ring for manhole covers, which means its patent-pending technology is the first to:

- Be designed specifically for CAP manhole covers;
- Boast stackable designs to save manpower and money; and
- Offer a one-and-done solution (the only time you'll need another one is when you're repaving your roads).

CAP's top riser system runs around $300 per manhole instead of the estimated $5,000 cities spend per manhole for overlays, days of traffic control, damage to current manhole assemblies, below-frame risers rings, concrete, rebar, asphalt, labor for two or three workers, supervision, plus heavy equipment like backhoes, jackhammers, cement mixers, tampers, street saws and more.

MANHOLE ADJUSTMENT

CAP has always been known for its durable composite manhole covers, but they've now taken things further. The Halo top riser ring system offers municipalities and contractors an efficient way to adjust manholes during repaving projects without the usual hassle of excavation. The Halo adds value to CAP products while slashing the costs of raising manholes, leaving more room in the budget for other pressing projects.

Typically, repaving roads means having to adjust manholes to match the new surface level, which can cause significant disruptions. With the Halo system, that problem is solved. Manholes can now be elevated in a fraction of the time, reducing road closures and labor costs.

LONG-TERM QUALITY, EASY TO USE

Built from the same high-quality composite materials CAP is known for, the Halo system is not only resistant to corrosion but also provides a watertight seal to protect the sewer systems from infiltration. This means cities can expect fewer maintenance needs down the road, further driving down costs over time.

One of the standout features of the Halo system is its lightweight and stackable design, which makes future adjustments even easier and safer during subsequent repaving projects. No excavation required — just stack and adjust as needed. This flexibility ensures municipalities can continue saving money on roadwork for years to come. Plus, the Halo is about a third of the weight of concrete donuts for the same lift.

FEDERALLY COMPLIANT

The Halo top riser ring system isn't just practical — it's also compliant with federal regulations. Manufactured in the U.S. and fully meeting the standards of the Build America, Buy America Act, the system is ready to be deployed on federally funded projects. This ensures it's an ideal choice for cities looking to upgrade their infrastructure while staying within budget and meeting regulatory requirements.

EXCEEDING STANDARDS

The Halo is designed to exceed industry standards, providing strength that is at least 2.5 times greater than the H-25 load requirements. This extra durability ensures the Halo can handle high-traffic areas, heavy loads and extreme environmental conditions with ease and offers long-lasting performance without compromise.

As infrastructure budgets tighten and cities face mounting pressure to modernize, the need for smarter solutions has never been greater. CAP's Halo top riser ring system addresses these challenges head-on by offering an efficient, long-lasting and cost-saving approach to manhole adjustments during road maintenance.

As municipalities continue searching for better ways to maintain their roads, the Halo system provides a solution with both immediate savings and long-term benefits.

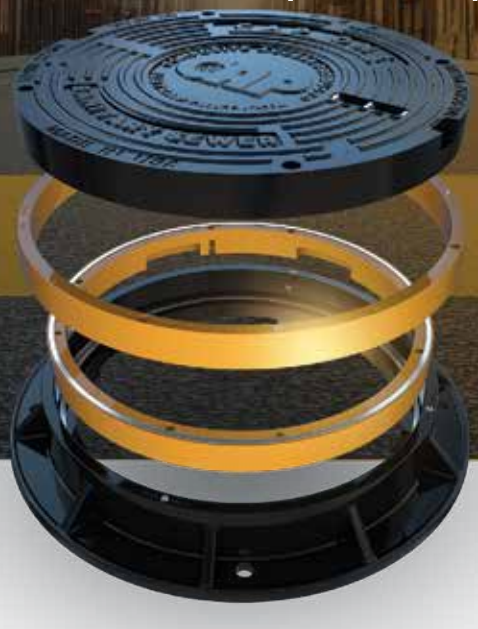
Composite Access Products

Composite Access Products services infrastructure with composite utility access covers. Molded in the company's McAllen, Texas plant, CAP's fast cycle times with low production costs allows for affordable, high-quality composite covers competitive to current iron alternatives.
844-344-2271 | sales@compositeap.com
justcapthat.com

Composite Access Products

ELEVATE, DON'T EXCAVATE, YOUR MANHOLES

Raise manholes in minutes, not days, while saving $5,000 per manhole with CAP®'s Halo™ composite top riser ring system.



RAISE EXPECTATIONS. **LOWER COSTS.**

No more digging, lifting, hauling, replacing, curing, and waiting all while redirecting traffic. **The patent-pending Halo™** eliminates the need for **ALL of that**.

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Kationx Tackles FOG and Improves Collection System Performance

Does your municipal collection system suffer from excess fats, oils and grease infiltrating and affecting system operation and maintenance? Meet Kationx, a U.S.-made, eco-friendly solution to detrimental FOG clogging up and impacting your system operations.

Core & Main Supply recently equipped one curious customer with Kationx products. After a simple demonstration, the customer saw how easily the Kationx formula bonded with and liquefied the FOG in the sample and decided to purchase four 5-gallon buckets for their own municipality.

The results were remarkable. Not only was Kationx much cleaner and easier to manage, but it also helped the team complete maintenance tasks significantly faster and cleaner than traditional grease removal methods. Plus, a follow-up assessment confirmed a reduction in H_2S compounds and cleaner wet wells and collection systems.

CUSTOMERS REPORT RESULTS

Customers who switched to Kationx have reported an immediate reduction in the fats, oils and grease in lift stations and throughout the collection system. Unlike other chemicals that simply mask the problem, Kationx's unique formula actively liquefies FOG while eliminating H_2S compounds. When you switch to Kationx, you'll quickly notice cleaner wet wells, fewer sanitary overflows and budget-friendly infrastructure protection, according to the manufacturer.

Kationx Odor and FOG Remover is a nontoxic and environmentally friendly solution to freeing up your collection systems. "In fact, the Kationx formula is edible, though we wouldn't recommend it," says a company spokesperson.

You can quickly and easily manage your systems with easy-to-handle 5-gallon pails that are safe and spillproof.

Kationx's one-year shelf life means you don't have to worry about delivery schedules or products going bad. Without constant replenishment and stock monitoring, this environmentally friendly solution saves your team time, money and potentially wasted product.

CORE & MAIN DEMOS

Ask Core & Main Supply about getting a Kationx demo at your facility. As a veteran-owned, made-in-the-U.S. brand, Kationx is flexible and able to meet the demands of a fast-moving industry. Kationx not only eliminates unpleasant odors, FOG and H_2S compounds, but it also proactively cleans your system and keeps lift stations operating better for longer. "The longer you use Kationx, the better your collection system works," says the spokesperson.

The Core & Main Supply team is equipped to be your one-stop shop for new products including product maintenance, repair and operations. The company's quick and easy distribution of industry-leading Kationx Odor and FOG Remover delivers high-quality, effective solutions to your municipality at the click of a button.

When you buy Kationx through Core & Main Supply, you get free shipping on any order of $1,500 or more in the U.S. ($4,500 or more when shipping to Alaska or Hawaii).

CORE&MAIN

Core & Main is a leading specialized distributor of water, wastewater, storm drainage and fire protection products, and related services, built on the foundation of more than 100 legacy companies.
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Balancing Sustainability and Wastewater Infrastructure Expansion

When planning new construction, one must consider environmental impact, infrastructure accessibility, cost and future development. Pressure sewer systems offer an alternative sanitary sewer option in challenging environmental conditions where an economic solution is required. In these situations, gravity systems may be impractical, and septic systems may pose a risk to the environment. Pressure sewer systems utilize a network of grinder pumps to transport wastewater through small-diameter pipes to collection and treatment systems.

Both gravity and septic sewer systems require major excavation for installation. Since pressure sewer systems are not limited by gravity, wastewater is pumped through small-diameter pipes that follow the contour of the land. These systems use directional boring to install piping in shallow trenches situated just below the frost line. This allows for a minimal installation footprint and expedites environmental recovery.

With a pressure sewer system, wastewater can be transported several thousand meters and can be discharged at a point of higher elevation. As a result, the need for lift stations can be minimized or eliminated in almost every installation. Since directional boring eliminates the need for large trenches, it is possible to install pipes under existing infrastructure such as roads. This simplifies installation or restoration efforts and costs compared to gravity systems, where existing infrastructure would need to be removed and replaced.

Pressure sewer systems also offer greater accessibility. They are ideal for areas with challenging terrain, such as rocky, hilly or flat regions, where gravity sewers are difficult or impossible to install. Rural communities, in particular, can benefit from pressure sewers due to lower costs and easier maintenance compared to gravity systems, which require expensive lift stations and constant maintenance.

FACILITATING COMMUNITY GROWTH

For communities relying on septic systems, pressure sewers provide a viable alternative. Septic systems have a limited life span, and replacing them can be costly. Pressure sewers offer lower installation costs, minimal environmental impact and easier maintenance. These systems typically require fewer tools for repair, reducing long-term operational costs.

Pressure sewers also allow developers to defer upfront costs. Instead of installing a costly lift station, contractors can install low-pressure sewer pipes and delay the cost of grinder pumps until homes are sold. This flexibility enables developers to manage costs better and expand sewer infrastructure in phases as needed.

The ability to continue to tie into existing systems also means that pressure sewer infrastructure can be built out in phases or facilitate future community growth. Large development projects can take several years to complete construction. If using a gravity sewer system, the complete build out of sewer infrastructure must be completed before home construction begins. With pressure sewers, large developments can be broken into many phases that ultimately tie together. This allows a developer to defer costs on longer-term build-oust until they have received revenue from earlier phases.

Pressure sewer systems also help treatment plants manage wastewater loads efficiently. Gravity systems are prone to inflow and infiltration, which increases treatment costs. In contrast, pressure sewer systems eliminate this issue by delivering pretreated wastewater that is easier and cheaper to process.

Overall, pressure sewer systems offer a flexible, cost-effective and environmentally friendly solution that supports future growth and development. They can tie into existing infrastructure, allowing for phased construction and long-term planning. This makes them an ideal choice for new developments and upgrading existing systems.

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CUES Introduces OZ4-HD Pan-and-Tilt Optical Zoom Camera

CUES — a leading manufacturer of CCTV pipeline inspection equipment and asset inspection/decision support software — is announcing the release of the new OZ4-HD camera. The OZ4-HD is a 1080p high-definition pan-and- tilt mainline camera. Designed to meet the highest industry standards, the OZ4-HD camera offers video with a level of detail that can detect and address potential pipeline issues with superior accuracy.

The OZ4-HD is designed specifically to be backward compatible, meaning customers currently running CUES equipment are now able to upgrade to high-definition for a minimal investment. This is done by installing the HD Truck Upgrade Package that includes a smart relay system, allowing the OZ4-HD to be compatible with the CUES K2/Summit system, transporters, cable, reel, etc.

Operators can switch seamlessly between standard-definition cameras and high-definition cameras with no interruption to workflow, ensuring a smooth and efficient inspection process every time.

A POWERFUL PORTFOLIO

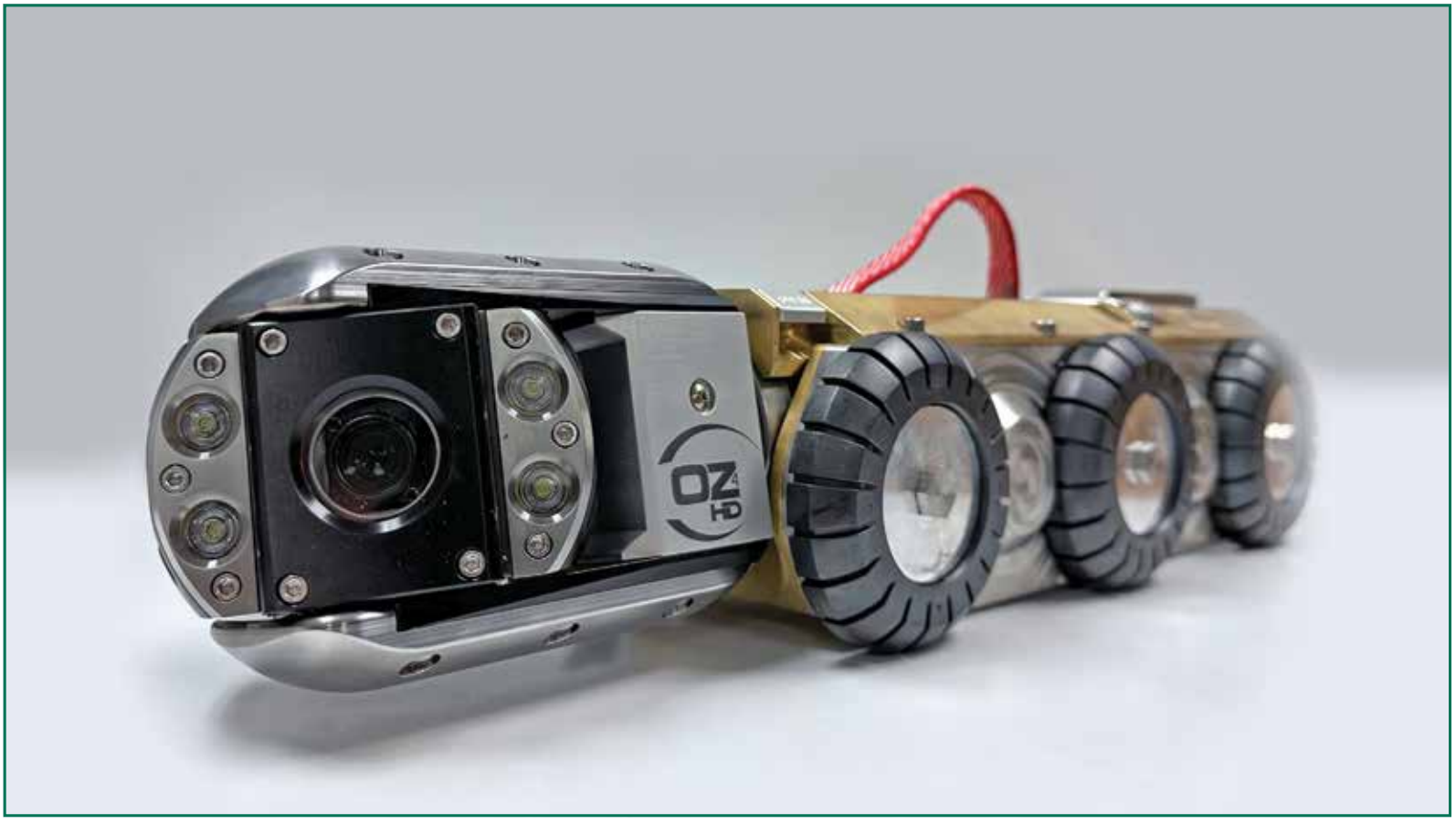
Customers new to CUES will also find the OZ4-HD camera compelling, along with the rest of the CUES product line. CUES manufactures robust equipment and is a one-stop shop for all pipeline inspection, rehabilitation, software and pipe profiling needs. CUES's portfolio of products includes truck-mounted systems, laser and sonar pipe profiling systems, transporters, cameras, lateral reinstatement cutters for the relining industry, structural point pipeline repair kits, and asset inspection/decision support software. The addition of the OZ4-HD camera is the latest example of how CUES continues to strengthen its product and solution offerings.

The OZ4-HD camera works with industry standards such as NASSCO's Pipeline Assessment Certification Program, ensuring seamless integration into existing inspection protocols. This compatibility enables adherence to stringent industry requirements for pipeline assessment and certification.

CUES's GraniteNet condition assessment software offers HD video support, ensuring uninterrupted performance when using the OZ4-HD camera. Additionally, compatibility extends to a variety of third-party software products, enabling users to leverage HD video capabilities across different platforms with ease. This versatility enhances workflows and achieves objectives efficiently, regardless of the software being used.

"I am excited to announce our latest innovation: the OZ4-HD camera," says Jonathan Russell, general manager of CUES. "This new camera represents a leap forward in our mission to provide unparalleled clarity as well as precision and ease in pipeline inspection, further enhancing our broad product offering. We understand how important it is to our customers to have seamless integration and investment protection with their existing fleet, so we spent significant effort developing this new high-definition camera to be backward compatible with existing CUES equipment. This latest development reaffirms our dedication to providing the best one-stop shop for pipeline inspection equipment and condition assessment software."

CUES — a subsidiary of SPX Corporation headquartered in Orlando, Florida — has more than 400 employees dedicated to hardware engineering, robotic design, Internet of Things, vehicle assembly, software development, artificial intelligence, GIS integration, cloud solutions, professional services consulting, sales, training and dedicated customer support to make its clients successful. CUES is a wholly owned subsidiary of SPX Corporation, a publicly traded $1.8 billion global leader in the detection and measurement markets. Use the contact info below for a free demo.
salesinfo@cuesinc.com | cuesinc.com



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Pioneer Pump Offers ElectricPAK VFD With SmartPrime Control Interface

The ElectricPAK VFD from Pioneer Pump is a rugged, packaged variable frequency drive solution designed to withstand the demands of mobile dewatering applications. It features an industry-leading touchscreen interface, known as SmartPrime, that's as intuitive to use as a mobile app.

Users benefit from a fast startup and simple monitoring experience, eliminating the need for complex keypad setup, advanced programming skills or specialized training. Inside the unit, the VFD uses Franklin Electric's proven electronics to deliver dependable performance and optimized motor control. Choose from two portable VFD package options:

- Standalone: Fully welded metal cage design keeps the VFD protected and secure during transport and setup while providing extra protection against job site hazards.
- Integrated: The quality and service of Franklin Electric packaged with the performance and durability of the Pioneer Pump ElectricPAK system. These full packages are optimized to work together to get the job done and provide for secure transport within a job site or from one job site to another.

Every VFD comes backed by Franklin Electric's support network. The company's team of engineers and service specialists have decades of experience working with professionals in the field and understand how to help you get the most out of your pumping system.

NO LEARNING CURVE WITH SMARTPRIME

One of the first hurdles operations must clear when upgrading their pumping systems to VFD control is education and product knowledge, specifically programming and operation. Gaining that knowledge is a resource-heavy process that requires the equipment operators to attend multiday training programs, often taught directly by the manufacturer.

The SmartPrime Control Interface helps to cut that resource cost by modeling its operation after the industry standard diesel-driven pump package. Any user familiar with diesel engine-powered pump operation can translate that knowledge quickly and easily to installing, programming and running a VFD-controlled system without the resource cost typically required for such a system.

You can handle all aspects of operation from a streamlined central hub with easy-to-navigate graphics. Fast startup and simple monitoring eliminate the need for complex keypad setup and programming.

Two SmartPrime mode choices help operators get packages up and running with just a few clicks:

- Manual mode lets users adjust basic pump parameters using simple on-screen tools, and includes analog sensor monitoring for up to four control and data variables.
- Auto mode lets users set up preprogrammed behavior, including maintain level, two-float level control, constant pressure output, drain wet well and more.

An alternative Hand Mode allows users to operate the panel with tactile push-buttons and a door-mounted speed potentiometer.

The system tracks and logs alarms onto an SD card, allowing for quick and easy review and troubleshooting.

You can get fully operational in no time thanks to a suite of product features designed to ease installation and programming times:

- Series 16 quick connect power gland panels streamline power, float and transducer connection.
- Using ElectricPAK products in conjunction helps to simplify motor setup with integrated package identification numbers — no need to search for separate input parameters.
- The front of the panel includes clear indicators for critical operations, including an emergency e-stop push-button.

PIONEER PUMP

Franklin Electric is a global leader in the production and marketing of systems and components for the movement of water and energy. Recognized as a technical leader in its products and services, Franklin Electric serves customers around the world in residential, commercial, agricultural, industrial, municipal and fueling applications. Pioneer Pump is a proprietary brand of Franklin Electric that specializes in the engineering and manufacturing of large centrifugal pumps and packages.

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Franklin Electric

NEW

SPEC WITH CONFIDENCE

RELIABLE WASTEWATER PUMPS FOR YOUR NEXT PROJECT

Franklin Electric's FPS submersible wastewater products give wastewater professionals more options to tackle the toughest applications. The NC Series, now featuring new models that deliver performance up to 20 horsepower, is ideal for storm dewatering, sewage transfer, and industrial applications. The latest design enhancements to the IGP Series Retrofit Kit simplify installation for grinder pump systems by eliminating leaks and wire slips.

Learn more at franklinwater.com

IGP Series
Retrofit Kit

NC Series

HammerHead's Lateral Rehab System Is an Integrated Solution With Superior Results

The Bluelight LED CIPP lining system for laterals and small drainpipes is an advanced light-curing system. The innovative technology empowers CIPP lining pros by alleviating the time pressures of other CIPP systems.

The specially formulated resin only cures under light in the blue wavelength, giving installers a significantly longer working time between liner wet-out and curing. Once installed, the automated curing system pulls the LED light head through the liner, curing the resin almost instantly – up to five times faster than other methods. Instead of waiting hours for the liner to cure, a 50-foot sewer line could be fully cured in under 12 minutes.

The Bluelight LED lining system is a proven solution for lateral rehab, and paired with HELIAM Scrim Liner, this system is elite in every standard. HELIAM Scrim reinforced liner minimizes longitudinal stretch, assures accurate inversion lengths, and works with all curing methods – heat, light and ambient. It is available in 4, 6 and 5 3/4 inches for undersized cast-iron and clay, and used in straight shop applications and single bends up to 45 degrees.

EXPERT TEAM AVAILABLE

HELIAM is manufactured and tested at HammerHead's factory in Lake Mills, Wisconsin. But you need more than just a manufacturer for your trenchless operations – you need a partner. HammerHead Trenchless' mission to help you succeed on every job, says a company spokesperson. "Our customer service is ready to get you answers when you need them, and our world-class training keeps your crews confident and efficient either on site, online or at HammerHead University. And when your job calls for a custom solution, our team of industry experts is ready to help. At HammerHead Trenchless, the most important feature on all our products is the signature support that comes with it."

HAMMERHEAD TRENCHLESS

HammerHead Trenchless is a one-stop source for trenchless solutions. The company manufactures and delivers a combination of rehabilitation, replacement and installation equipment and consumables for the underground construction market. Not only does HammerHead offer a broad range of innovative trenchless solutions to solve today's underground infrastructure challenges, it also provides quality field support, comprehensive training and project consultation to its customers around the world. HammerHead products are made in Lake Mills, Wisconsin, and sold and serviced in more than 63 countries.

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Our industry leading lateral rehab system drowns out the competition. We test all our products in the field and when paired together they are elite in every standard. We're here to help you do more, in less time, with less interference. When you choose HammerHead you're choosing **integrated solutions, with superior results.**

Dominate your projects at: **hammerheadtrenchless.com**

Albany Water Department's Leak Detection Pilot Sees Early Success

AQS (Aquarius Spectrum) engaged in discussions with the City of Albany Water Department to explore opportunities for reducing nonrevenue water loss by effectively identifying and addressing leaks. AQS offers cutting-edge acoustic leak detection sensors that empower water utilities to proactively monitor their distribution networks, enabling the early detection of leaks and thus contributing to significant reductions in nonrevenue water and associated operational expenses including energy, labor, and chemical costs.

The decision was made to implement the AQS Leak Detection Pilot within the Arbor Hill area, recognized as an appropriate location owing to previous leak incidents and water loss trends. With GIS data provided by the city, AQS engineers strategically crafted an implementation plan, precisely outlining the requirement for 21 AQS Leak Sensors to cover around 19,855 feet (or 3.76 miles) of 6- to 24-inch cast iron distribution pipes spanning the Arbor Hill vicinity.

On May 22, 2023, the AQS team arrived in Albany to provide support for the installation and training of city staff in setting up, programming and monitoring the AQS leak sensors. The installation encompassed 21 sensors in total: 16 aboveground sensors were securely installed on hydrants, while five underground sensors were positioned on valves. In the initial days following the installation, multiple potential leaks were detected. The AQS team promptly initiated monitoring of these points of interest and collaborated with Albany's leak detection team.

THE RESULTS

AQS conducted regular discussions between AQS and the Albany team. These calls served as a platform to share updates regarding the monitored leak data by AQS, and the city provided valuable feedback and observations from their on-site leak investigations. To date, the pilot has yielded substantial results, uncovering a total of 10 leaks within the Arbor Hill Pilot area, including two leaks on 12-inch main, four leaks on 8-inch pipe, two leaks on 6-inch pipe and two leaks on customer side service line.

Additional information discovered includes the pinpointing of two private leaks (with the homeowners notified), the successful detection and repair of three additional leaks, two others that have been found and are awaiting repair, and three more leaks yet to be located and confirmed.

Adopting a cautious approach, AQS assumed an average leak size of 8 gpm for the eight leaks on 6- to 12-inch mains and 5 gpm for the two service side leaks. From this, it can be calculated that the leaks identified thus far potentially account for a significant reduction of around 38.9 million gallons per year in potential nonrevenue water loss.

Since 1837, Pollardwater's team of industry experts has focused on providing superior customer service and providing solutions for a wide variety of industry needs. The company's strategically located network of distribution centers and relationships with the industry's top manufacturers mean on-time delivery and unmatched support for a wide breadth of products across the water and wastewater industries.

LISTENING FOR LEAKS

WE'VE GOT YOU COVERED

Reduce water loss with AQS's high-performance leak management solutions and tailor-made Human-as-a-Service (HaaS) offerings. AQS technologies empower water utilities to detect and prevent leaks, enabling proactive continuous monitoring and efficient management of water networks, to reduce NRW (Non-Revenue Water) and optimize resource allocation.

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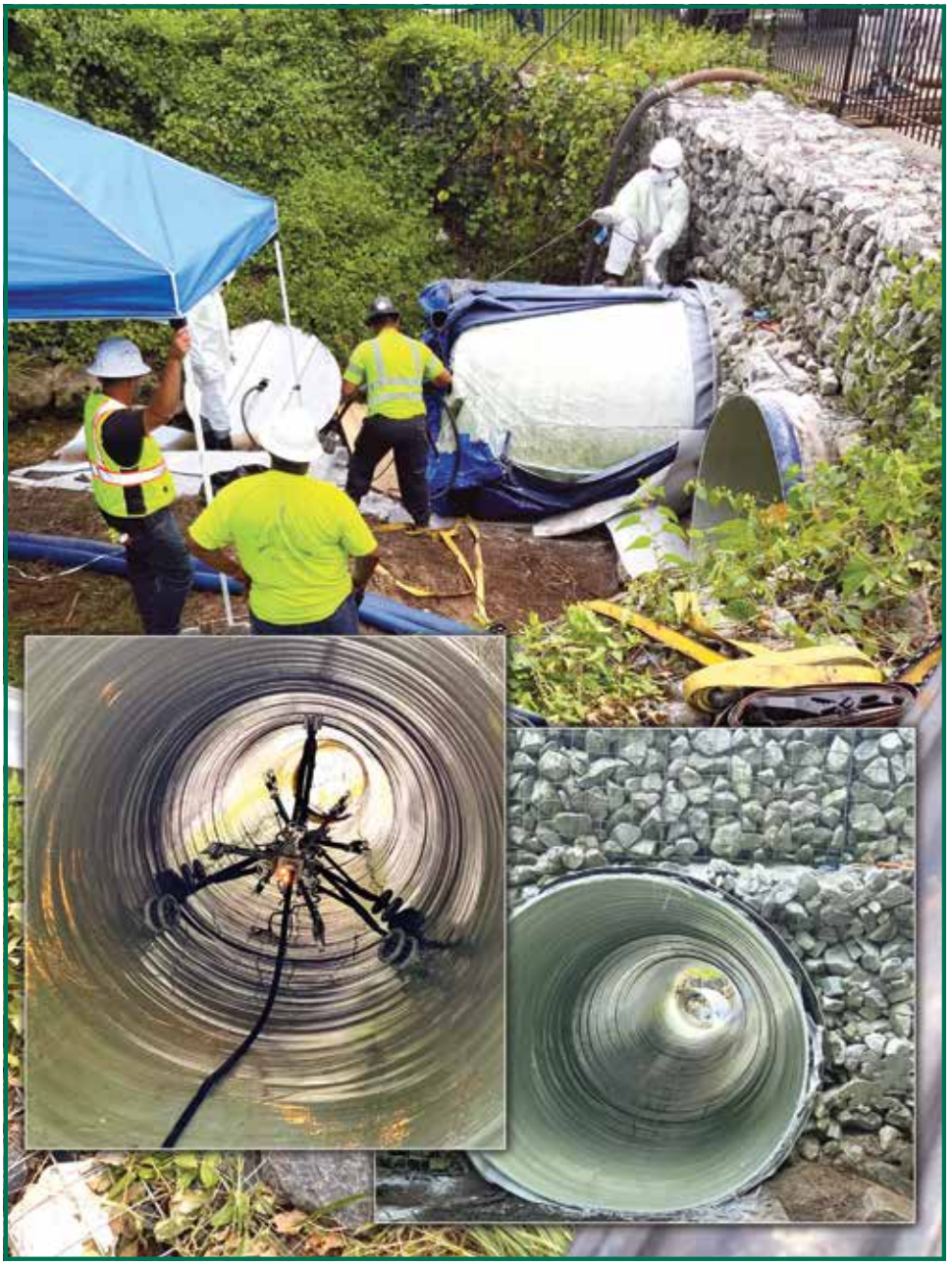
Crews Tackle Challenging Stormwater Culvert Rehab in Baltimore County, Maryland



Ecotone LLC needed to rehabilitate 96 linear feet of corrugated metal pipe as part of a contract in Baltimore County, Maryland. The challenge was that the twin 72-inch pipes passed under a county road that accesses an apartment community's main office, and ran beneath its swimming pool amenity. The pipes had suffered extreme deterioration from prolonged exposure to constant running creek water and presented advanced deterioration and small voids, creating pipe failure concerns.

The single point of access to the community ruled out a traditional dig-and-replace method as a viable option, due to potential life safety impact with limited access by fire and emergency medical services. Opencut and several potential trenchless methods were also ruled out because an existing playground directly adjacent to this site presented dangers to children there.

THE SOLUTION

Pleasants Construction Inc. won the project bid as a cured-in-place pipe lining job using the Alphaliner 1800H UV-cured liner system. There were two segments of 72-inch corrugated metal pipe, each 48 feet long, to be lined.

Logistics challenges included that the creek ravine containing the pipes was located between the roadway and a CSX railway track. This culvert area was protected by a fence overgrown with weeds. This situation required some cut-in of a temporary work area for equipment and the liner crate, plus crew access. The crew also had to create an area to build their sandbag weir and to accommodate diversion for bypass pumping. Though an excessive rain event occurred the afternoon/evening before the install, no issues or delays were caused by the storm, thanks to proper site precautions taken by the crews.

Pleasants was able to meticulously clean and televise the pipes in preparation for the lining process. They spent the first day performing a televised line inspection and bringing in their hydrovac truck to pressure wash and clean the pipes. A second day was spent clearing debris and prepping the pipe's interior surface. During preparation, crews were diligent in the safety of the general public and community, which showed curiosity about the ongoing work.

The weight of these resin-impregnated liners required a 40-ton crane to lift the liner crates off the truck and assist in setting them down in the crews' work area. Crews successfully pulled the Alphaliner into place and introduced air into the liner for expansion into the failing host pipe. With less than 8% elongation, the Alphaliner glass-reinforced pipe product was a perfect solution for this project. Using the Reline America REE4000 Curing Unit, the liner was successfully cured in place without any impact to the surrounding community or existing creek flows.

Each pipe required a full day for installation and curing. A second day allowed for quality control testing and site remediation back to its former state. Throughout this process, bypass pumping was provided by the construction manager.

Within 48 hours of crews arriving on site, the pipes were rehabilitated and returned to service without any trenches or opencut excavation.

THE RESULT

Possible structural concerns, now and in the future, have been eliminated with the installation of the Alphaliner 1800H structural liner. Due to the success of the project with such limited disruption to the community, the local municipality has been utilizing UV GRP lining on other problematic sanitary collection lines, stormwater assets and failing outflow lines throughout the county.

RELINE AMERICA

Reline America is a leading provider of UV GRP pipeline rehabilitation technology, offering a cost-effective and environmentally friendly alternative to traditional pipeline repair methods. Reline America offers everything needed for pipeline rehabilitation under one roof — design, engineering, manufacturing, training and 24/7 support from its ISO 9001-2015 certified facility in Saltville, Virginia. Customized equipment and liners, factory-certified installers, coupled with a proprietary quality tracker system, make Reline America's Alphaliner UV GRP liners easier to install.
866-998-0808 | info@relineamerica.com | relineamerica.com

Exactly **what those who specify Alphaliner experience**, along with...

Custom-Made Solutions to Individual Project Needs
Because one size doesn't fit all, our Saltville, VA ISO 9001:2015 manufacturing facility creates liners that are tailored to each rehabilitation project's unique requirements.

Significant Advantages
Specific technical characteristics of Alphaliner UV-GRP can help reduce disruption, environmental risk, project time to complete and overall costs.

Optimum ROI
Our installers go thru extensive hands-on training so you can expect projects that deliver the best possible outcomes.

Contact us now to experience the benefits pipe rehabilitation with Alphaliner UV-GRP.

> ***Everything Reline America does is repeatable, consistent, and the way it is manufactured is a game changer...***
> --John Fuquay, Fuquay Inc·

RELINE AMERICA

866.998.0808 | relineamerica.com

Camel Max Series Combination Sewer Cleaners Offer Versatility, Safety, Productivity

Most citizens are unaware of what goes on above and beneath the surface of their cities, streets and homes when it comes to wastewater and stormwater. Cleaning and maintaining these established and intricate underground and aboveground sewer systems is essential to the health and safety of each community. Obstructions in a line or broken pipe and joint failures can cause major issues for a sewer system, while stormwater runoff can leave behind debris that will clog a storm sewer system. Whether addressing emergency situations or performing preventive maintenance, Camel Max Series Combination Sewer Cleaners are designed to offer versatility, safety and productivity when maintaining a community's sewer system.

VERSATILITY

Combo sewer cleaners are valued for their exceptional versatility in handling a wide array of applications. This versatility is attributed to their dual functionality, combining high-pressure water jetting and a powerful vacuum system. The Camel Max Series is the most versatile combination unit in the industry, tackling various applications with jetting, vacuuming and excavating. The product line comes in a variety of model configurations: 900 Dump, 1200 Dump, 1200 Eject and 1200 Wastewater Recycle. Additionally, customers can add a hydroexcavation package to a unit. This allows operators to transition easily from one task to the next from cleaning sewer lines to vacuuming debris to safely unearthing utility lines.

SAFETY

All Super Products equipment is designed with operator safety in mind. The Camel Max Series comes standard with a wide array of safety features, such as tailgate and debris body props, visual and audio alarms, backup camera and emergency stop switches. Additionally, Super Products offers eject unloading, a safe and efficient means of debris removal. As the debris body rises, the ejector plate quickly pushes out debris. With eject unloading, operators also have the ability to dewater before having to drive to a dumpsite, reducing overall weight and increasing payload capacity.

PERFORMANCE

The Camel Max Series comes with standard features and options to ensure efficient workflow and productivity. The front-mounted hose reel is highly accommodating, rotating 270 degrees and extending 18 feet. A digital monitor displays hose footage count, offers 20 saved settings for hose reel payout, can run the water pump with or without the vacuum, and is designed with LED panel lights to enable readability in multiple environments. Additional options can be added for increased performance capabilities. A pusher axle option offers increased payload capacity. The wastewater recycling system offers the ability to conserve water; operators can clean sewers all day without the use of freshwater. Clean nearly 3,000 feet of sewer pipe per day and save 60,000 gallons of water per week.

The combination of high-pressure water jetting and vacuum capabilities makes combo sewer cleaners an indispensable tool for municipalities, utility companies and contractors involved in sewer system maintenance and repair. Their ability to adapt to different tasks and environments contributes to the overall functionality and longevity of critical infrastructure. ✦

CAMEL® MAX SERIES

COMBINATION SEWER CLEANERS

EXPERIENCE THE CAMEL MAX® DIFFERENCE

- MAXIMUM SAFETY
- MAXIMUM RELIABILITY
- MAXIMUM PERFORMANCE

To see the full lineup, scan or visit:
www.superproducts.com

Super Products®

ANATOMY OF ENVIROCURE FELT LINER

Features multiple layers of material, which are overlapped to reduce styrene odor and emissions. This multilayer construction consists of:

1. **Inner Felt Layer - With Styrene Barrier Coating**
2. **Felt Liner Layers - Resin Saturated**
3. **PreLiner - Optional**

Consistency and Quality: How United Felts Is Thinking Big About CIPP

United Felts, formerly Applied Felts Inc. and FerraTex Solutions, has a storied history in the world of cured-in-place pipe lining. The company's textile engineers produced some of the first CIPP liners decades ago, and today, its state-of-the-art manufacturing operations produce a full inventory of liners, including leading solutions for wastewater and stormwater collection systems. The company's rigorous testing standards and commitment to quality have earned the trust of the industry.

Earlier this year, United Felts became part of Vortex Companies, the global trenchless brand whose portfolio now includes everything from geopolymers to robots to lateral liners. Joining forces with Vortex has put the company in high gear: Now, it has greater resources to execute United Felts' comprehensive 28-point quality assurance/quality control process and rigorous design and testing, which ensure durability and performance. The company produces its own felt from raw materials, meaning no part of the manufacturing process is outside of its experts' supervision.

An affordable low-emissions option

United Felts' patent-pending EnviroCure-Felt delivers the strength of traditional CIPP liners while reducing styrene emissions and disruptive odors. It utilizes an impermeable polymer coating that prevents styrene from entering the air and water.

On-site third-party testing has consistently shown EnviroCure-Felt styrene emission readings as low as 1 ppm during installation, practically eliminating jobsite odors and complaints from the community. These reduced emission readings — taken from the installation truck, at the manhole point of entry and the job site perimeter — are well below the acceptable standards set by regulatory bodies, according to the manufacturer.

EnviroCure-Felt costs three times less than styrene-free options, providing substantial cost savings. It uses tried-and-true curing technologies that ensure pipelines meet expected life spans and quality standards. And it's designed for easy installation, using traditional methods, conforming to ASTM F1216 and ASTM F1743 standards. EnviroCure-Felt can integrate seamlessly into existing sewer maintenance operations without additional equipment or training. With EnviroCure-Felt, waste- and stormwater utilities can offer low-odor, full-strength pipe rehab for a wide range of projects, from small-scale repairs to major infrastructure overhauls.

A LARGE UV PORTFOLIO

United Felts' patent-pending EnviroCure-UV liner has unique dimpling properties that simplify lateral line reinstatement, and that feature has made it a favorite of UV contractors working on complicated pipelines with multiple connections.

Now, EnviroCure-UV is joined by United UV GRP, a multilayer, overlapping continuous glass fiber liner that offers superior strength in its cured form. A lower price point and these greater structural properties make it ideal for long, straight sections and large diameters. United's in-house pros can support public works in evaluating the best UV option for their projects, and its team is on hand to equip and train municipalities interested in adding UV-cure technologies to their capabilities.

BIGGER REACH, FASTER DELIVERY

To deliver big for the customers, United Felts is making full use of its network of wet-out operations, with locations in Florida, Montana, New Jersey, Tennessee, Texas and Virginia. With complete control over manufacturing, United Felts offers fast delivery times and long shelf life — meaning asset owners can respond faster, complete more repairs and have greater confidence in their work.

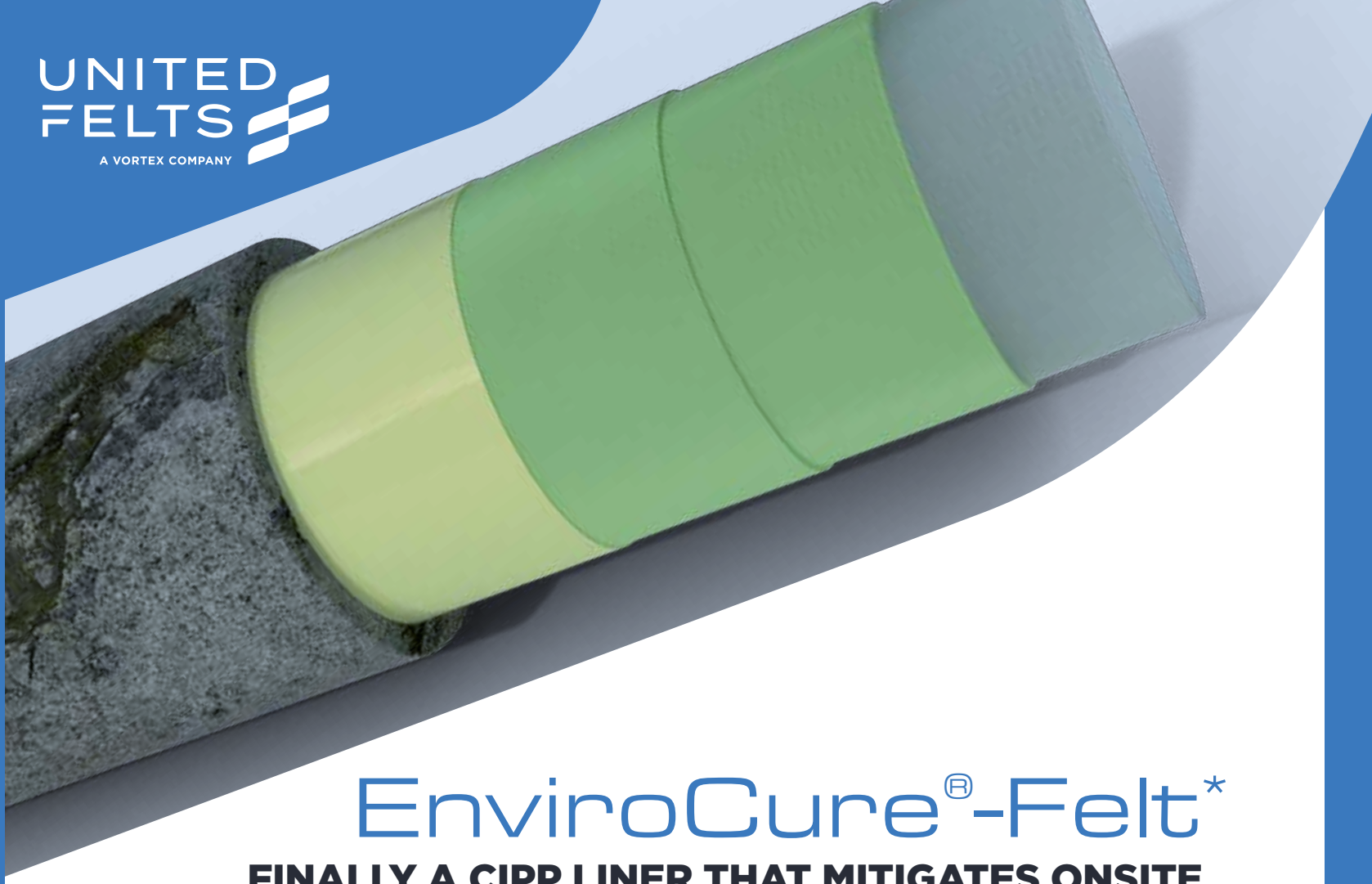
All of this — the growing geographic reach, the alliance with Vortex Companies and its vast lineup, odor-reducing technologies like EnviroCure-Felt, and a large UV portfolio — is being executed with the steady hand and technical expertise the company has long been known for.

UNITED FELTS
A VORTEX COMPANY

United Felts (previously Applied Felts and FerraTex Solutions) is a pioneer in the development of the CIPP process. Today, it continues its commitment to meeting the unique field application requirements of its customers so they can keep essential infrastructure flowing. Based in Martinsville, Virginia, the company manufactures all its liners in-house.

276-656-1904 | info@unitedfelts.com
unitedfelts.com

UNITED FELTS
A VORTEX COMPANY



EnviroCure®-Felt*

FINALLY A CIPP LINER THAT MITIGATES ONSITE STYRENE EMISSIONS WITHOUT LOSING STRENGTH.

THE ONLY LINER OF ITS KIND.

Developed by United Felts, the most trusted CIPP manufacturer in the industry, EnviroCure-Felt, is a game-changer! Featuring a proprietary styrene barrier coating, EnviroCure-Felt liner odor and emissions are significantly lower than traditional CIPP Liners.

- Styrene emissions are less than 1 ppm on job site.**
- Less expensive than styrene-free resin liners.
- Liner strength is not compromised.
- Installs like traditional CIPP.

MADE IN AMERICA

** Patent Pending. ** Independent 3rd party tests of Styrene Emission for EnviroCure with/without Pre-Liners During CIPP Process, 2021-11-23.*

LEARN MORE
276-656-1904

Vac-Con's Non-CDL 3-Yard Combo Sewer Cleaner Available for Demo

Since 1986, the mission of Vac-Con has been to support, design and manufacture innovative vacuum and high-pressure water cleaning solutions that deliver superior performance in municipal, industrial and utility markets worldwide through its global dealer network.

This 3-yard version of the company's popular combination sewer cleaning machines provides the performance you'd expect from a Vac-Con combination machine with a minimal footprint. This is an ideal option for smaller organizations and those who need to have anyone on the team jump in the truck and go with no CDL required. The non-CDL 3-yard weighs under the 26,000 GVWR with full freshwater capacity. It features 3 yards of usable capacity in the debris tank and a simple operating system designed for all skill levels.

The specs include:

- PD blower up to 2,100 cfm at 16 inches Hg
- Lightweight water tanks with 500-gallon capacity
- 30 gpm at 3,000 psi
- Proportional hydraulics for precision operation
- Cyclone separator and final filter
- Hose reel with 180-degree rotation and 500-foot by 3/4-inch hose
- Boom rotates 180 degrees and extends 5 feet with a lifting capacity of 500 pounds at full extension
- Options available including hydroexcavation and arctic winter recirculation

The non-CDL Vac-Con 3-yard is currently available for demos.

Today, the Vac-Con family of products includes combination machines, industrial vacuum loaders, jetters and hydroexcavators that are used in an array of diverse applications by companies in the construction, oil and gas, mining, safety, and environmental industries. These machines are equipped to handle the toughest of jobs in the harshest of conditions. Ideal for industrial and construction operations ranging from hydroexcavation to daylighting, exposing in-ground utilities, soil trenching, sewer jetting and debris removal. Highly reliable and able to get the job done quickly, safely and efficiently, municipalities, operators and contractors use Vac-Con's products across the globe. "No matter the industry, our world-class industrial vacuum trucks and trailers are guaranteed to save you time, money and effort," says a company spokesperson.

VAC-CON
www.vac-con.com

Vac-Con's goal from day one has been to conceptualize and create powerful and reliable machines, pushing the envelope year after year with innovation.

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SETTING THE BAR FOR QUALITY AND RELIABILITY FOR ALMOST 40 YEARS

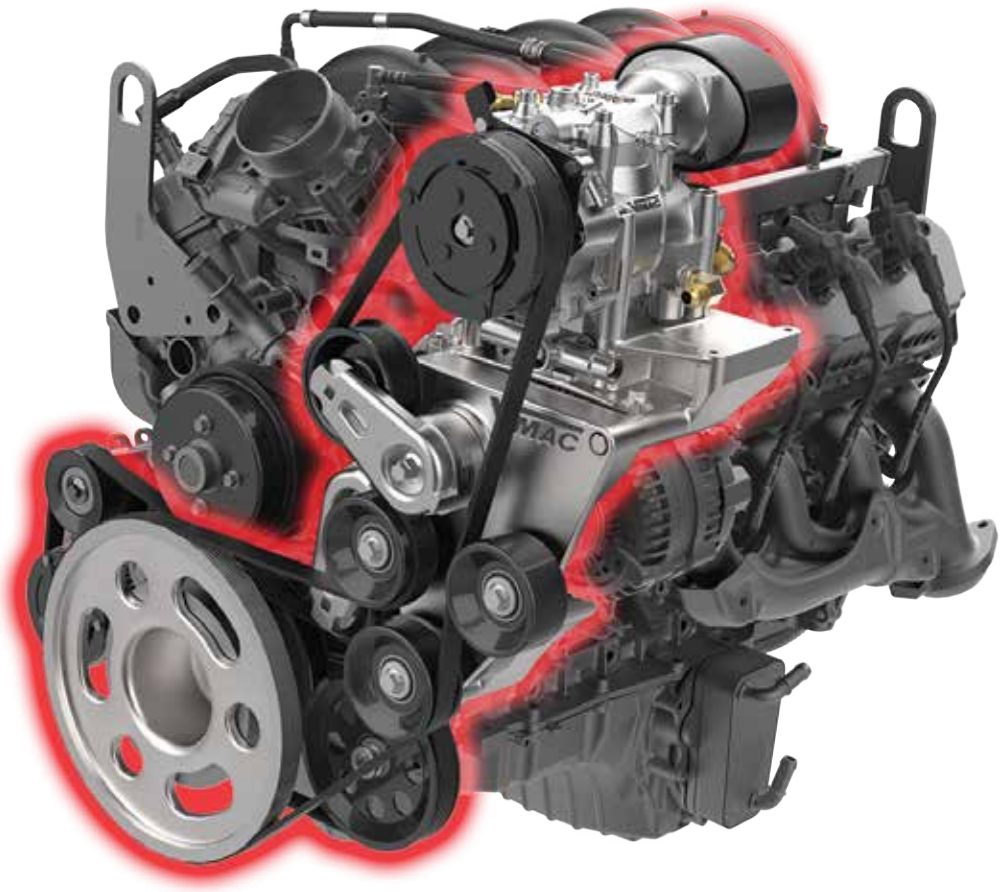
At Vac•Con we believe in providing our customers quality, reliable machinery for their municipal, industrial, and utility markets worldwide.

From day one, our mission has been to design and build the most powerful and reliable machines in the industry, pushing the envelope year after year with unrivaled innovation.

Talk to your local dealer today to see why countless cities and municipalities trust Vac•Con to help get their jobs done.

Learn more at www.vac-con.com

What You Need to Know About Fleets Switching to UNDERHOOD Air Compressors



In the demanding world of fleet management and maintenance, efficiency and reliability are non-negotiable. UNDERHOOD rotary screw air compressors have been proven in the field for almost 30 years, delivering reliability and performance, powered directly by the service truck or van's engine.

Fleet managers and mechanics across North America continue to make the switch from tow-behind and above-deck air compressors to UNDERHOOD for its benefits in the field.

WHY CHOOSE UNDERHOOD?

Engineered for the harshest environmental conditions and most unforgiving climates, UNDERHOOD air compressors offer a level of performance and durability that tow-behind and deck-mounted models simply can't match.

UNDERHOOD air compressor systems mount directly in the vehicle's engine compartment, providing high performance, according to Mike Pettigrew, marketing manager at VMAC. "These North American designed and manufactured compressors offer incredible air volume at 100% duty cycle, and customers have relied on them for over 20 years to work in the most extreme climates and conditions."

APPLICATION ENGINEERED FOR YOUR FLEET

VMAC's team works closely with OEM engineers to ensure that each compressor integrates seamlessly with new model year vehicles, including Ford, RAM, GMC/Chevrolet and International work trucks, along with Ford, Mercedes-Benz and Freightliner service vans.

"Collaborating with major OEMs ensures each UNDERHOOD compressor fits perfectly, allows easy installation and maintenance, and preserves the vehicle warranty," Pettigrew says. "VMAC's vehicle-integrated systems stand out from the competition's underdeck systems by eliminating potential alignment issues, added costs and the need for extra parts."

FOUR MODELS TO CHOOSE FOR YOUR WORK

The UNDERHOOD lineup includes four robust models: UNDERHOOD40 Truck Series, UNDERHOOD40 Van Series, UNDERHOOD70 and UNDERHOOD150.

The UNDERHOOD150, the most powerful model, produces up to 110 cfm, capable of powering heavy-duty tools like jackhammers, trenchless piercing tools and rock drills. This makes it an ideal choice for utility workers, construction crews, municipalities and others who need to operate large tools without sacrificing valuable vehicle deck space or the hitch.

BOOST PAYLOAD, REDUCE MAINTENANCE

UNDERHOOD compressors help reduce gross vehicle weight by up to 1,900 pounds. Weighing between 62 and 200 pounds, these lightweight systems enhance payload capacity and overall vehicle efficiency.

Additionally, the compact design of UNDERHOOD air compressors frees up to 80 cubic feet of space compared to traditional utility mount compressors, allowing for more tools and a cleaner vehicle appearance.

Each UNDERHOOD system is designed to operate at a 100% duty cycle, meaning no waiting for air. This feature is crucial for continuous drilling, hammering or any other demanding task. The increased productivity of UNDERHOOD air compressors is especially appealing to fleet managers.

"Servicing your UNDERHOOD air compressor is as easy as an oil change," Pettigrew says. "There's no extra engine to maintain, saving both time and money."

ALWAYS ON THE JOB

Many fleets choose UNDERHOOD for its convenience. With the air compressor always on your truck or van, there's no need to return to the shop to hook up the tow-behind. This frees up the hitch and eliminates the extra insurance and maintenance costs of an additional engine.

"With UNDERHOOD, you never have to worry about leaving a compressor behind or realizing it's back at the shop," Pettigrew says. "If your vehicle is there, so is your compressed air."

VMAC
AIR INNOVATED

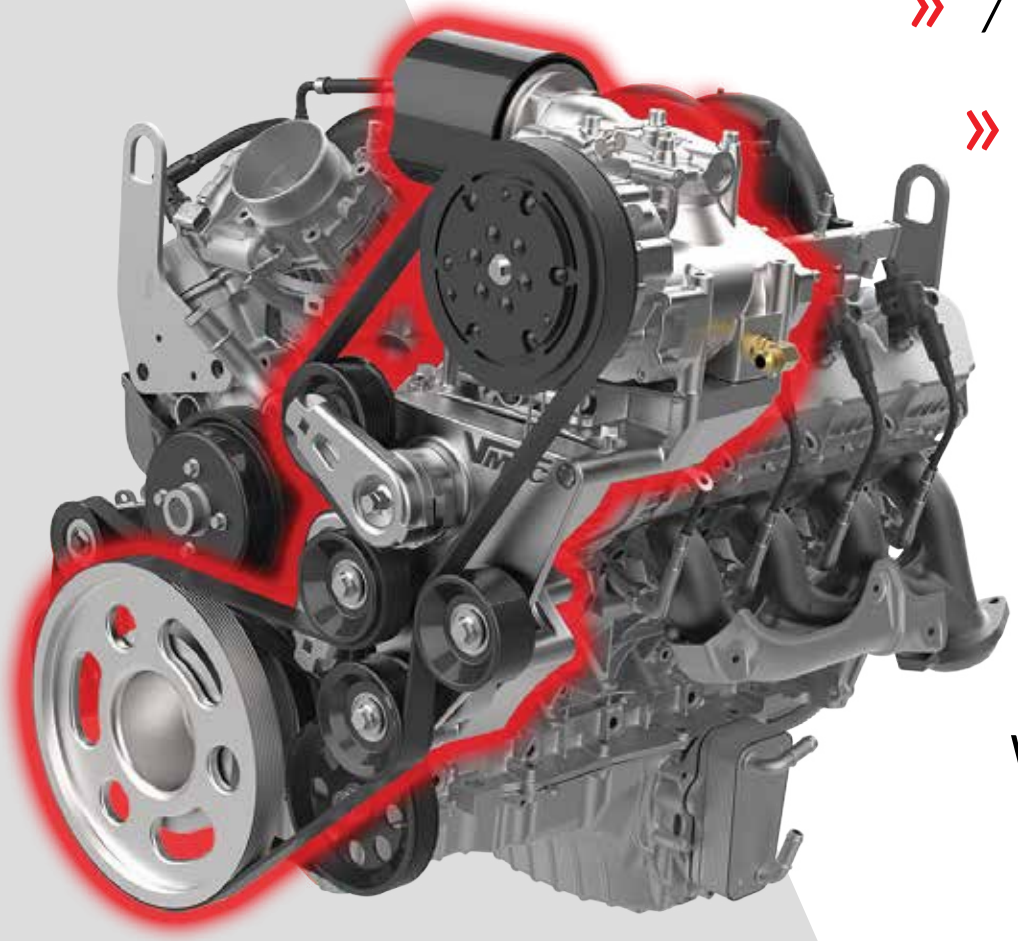
VMAC has been a leading air compressor manufacturer in North America for over 35 years. VMAC's mobile air compressors and multipower systems have earned a reputation for extraordinary design, build quality, durability and reliability in extreme conditions among operators and fleet managers worldwide.
250-740-3200 | sales@vmacair.com
vmacair.com

FLEETS ARE SWITCHING TO UNDERHOOD®

Fleets switch to UNDERHOOD because the air compressor is:

- 38% more powerful
- 73% lighter
- 19 ft^3 smaller

Compared to deck mounted diesel air compressors



Get The Specs:
VMACAIR.com/fleets-UH

VMAC®
AIR INNOVATED

Cam Spray Offers Industrial Skid- and Van-Mounted, Gas-Powered Drain and Sewer Jetters

Truck-, van- and skid-mounted, gas-powered unheated sewer and drain jetters from Cam Spray are designed for outdoor use and can be mounted on a flat-bed truck, or placed in vans or enclosed body trucks with proper ventilation.

Equipped with the same features that make the company's trailer-mounted sewer and drain jetters an excellent option, skid- and van-mounted jetters are constructed on a compact, easy-to-move platform.

JETTER FEATURES

Skid- or van-mounted drain and sewer jetters feature a gasoline engine, a plunger pump with ceramic plungers and stainless steel valves protected by an unloader valve and secondary pop-off valve. A power pulse feature is available on some models for navigating longer runs and elbows. Industrial-coated skid platforms and frames offer transferability between vehicles, and mounting flanges allow the machine to be fastened to the floor or deck of a van or trailer.

Other features include a manual or 12-volt DC-powered reel for hose storage; 50-foot hose and washdown gun for pressure washing and site cleanup; a four nozzle set with storage box and tip cleaner; and an optional water tank.

THE LJ4008H

One of Cam Spray's most popular units is the 8 gpm, 4,000 psi LJ4008H van-mount jetter. The unit includes a Honda iGX 800 fuel-injected gas engine — with an oil alert and hour meter — powering a gearbox-driven plunger pump with ceramic plungers, stainless steel valves, pressure gauge and 80-mesh water filter.

The pump is protected by an unloader valve, secondary pop-off and has a schrader valve to blow the system out for freeze protection. ✦

Cam Spray is a small, family-owned company and leading manufacturer of pressure washers, drain and sewer jetters, and other high-pressure industrial cleaning solutions. In business since 1971, the company offers cold water and hot water power washers and sewer jetters in many different variations for almost every application. If the standard machine is not what you are looking for, Cam Spray will custom build exactly what you need to get the job done.
800-648-5011 | www.camspray.com

Detect Water Losses Early With Noise Logger SePem 155

Leaks in water pipe networks can result in significant water losses. Thanks to systematic monitoring of the network with SePem data loggers, you can reliably identify existing leaks and catch new ones early on – much faster than with conventional methods.

In relation to the size of a measuring area, the volume of water initially escaping from a new leak is usually so low that it cannot be clearly distinguished from minimum nighttime consumption when measuring the flow. In practice, many months often go by before the size of the damage is great enough to produce a flow volume that can clearly be identified as a leak. SEWERIN's SePem 155 can report the leak after just one night.

The SePem 155 data loggers are perfect for mobile use and can also be used for the stationary monitoring of water supply networks. The SePem 01 Master, with its simple and intuitive menu navigation, provides fast and reliable results and can be reliably operated by less experienced users. The measuring times and periods of radio-activity are freely programmable.

SEWERIN
Technologies for leak detection.

Hermann Sewerin is an internationally successful, technically innovative, family-owned company headquartered in Gütersloh, Germany. With top-level products and services, Hermann Sewerin is a market technology leader and a partner to the gas and water supply industry. Together with its 95 years' experience in the development of measuring devices, the knowledge accumulated by its measuring teams contributes significantly to its success.
888-592-9916 | sewerin-usa@sewerin.net
www.sewerin.com

MUNICIPAL INNOVATIONS '24

Reduce Costs With SL-RAT Condition-Based Maintenance Program

Using transmissive acoustics, the SL-RAT provides blockage assessments in just 90 seconds, with no flow contact required. This enables a condition-based maintenance program that is 10 to 20 times faster and more cost-effective than traditional time-based cleaning methods.

To date, more than 1,500 communities have used the SL-RAT to assess over 400 million feet of gravity sewer lines. The data shows that, on average, 72% of sewer lines are in good condition, highlighting the value of condition-based maintenance. By focusing on the 28% of lines that actually need attention, municipalities can significantly reduce costs and water usage, improving overall efficiency.

InfoSense, Inc
Innovating Acoustic Inspection Technology™

InfoSense is the manufacturer of the Sewer Line Rapid Assessment Tool (SL-RAT), an award-winning acoustic inspection device designed to detect blockages in small-diameter gravity sewers.

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MUNICIPAL INNOVATIONS '24

Use MAXMAG Magnesium Anodes for Cathodic Protection

MAXMAG Magnesium Anodes are widely used sacrificial anodes for cathodic protection of metallic structures buried in soil or other electrolytes.

MAXMAG Magnesium Anodes produce maximum driving potential, offering more protective DC for cathodic protection purposes and are available in a complete line of weights, shapes and dimensions.

MAXMAG Magnesium Anodes are manufactured to strict ASTM standards of chemistry, production control, testing and certification. They are available packaged inside a cardboard tube or inside a cotton bag, surrounded by premixed galvanic backfill.

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www.Rustrol.com

International/Interprovincial Corrosion Control Company Ltd. provides engineering services and the supply/manufacture of corrosion control and cathodic protection materials throughout North America and worldwide. ICCC specializes in the cathodic protection of buried or immersed metallic structures such as water/gas pipelines, fuel storage tanks and petroleum refineries.

905-634 7751 | 800-699-8771 | contact@rustrol.com | www.rustrol.com

Water Departments Saving Time and Labor With Valve-Out Flange Spreader

The Valve-Out valve/meter replacement and flange-spreading tool is a game changer for municipal customers everywhere. With over 300 units sold to various water departments in the last three years alone, the Valve-Out tool is empowering smaller maintenance departments to perform work in-house that would otherwise be contracted out.

HOW IT HELPS

The Valve-Out tool is a zero-gap flange spreader, which allows you to spread flat-faced flanges where there is no gap. When used with the included (12-inch in standard kit) spacer bar segments you can span across valves or meters to replace them safely, quickly and easily in the field. The Valve-Out tool helps you create the ¼- or ½-inch space needed to swap flanged valves or meters in compressed piping and reinstall the gaskets in a fraction of the time or effort.

"I don't know how a water or sewer utility can be without this tool," says one city's director of utilities. "It's a major improvement to the old way of doing things. Our employees are safer and more productive."

Another water plant supervisor says "the last time we did this type of work, we prepped the day before and it still took us eight hours. With the Valve-Out Tool we finished in 2.5 hours, including an hour to drain the water level. What a labor saver!" ✦

SMP
Safer Smarter Tools

Speciality Maintenance Products has delivered safer and more efficient tools to pipe maintenance crews all over the world for more than 20 years. The company serves the refinery, petrochemical, midstream, pipeline, power generation and water and wastewater industries, as well as the maintenance and TAR contractors who service these areas.
713-667-4402 | sales@smptools.com
smptools.com

MUNICIPAL INNOVATIONS '24

REED Manufacturing Offers Plastic PipeJoiner for Gasketed Pipe

Joining gasketed pipes can be a challenge. One common method is to push the end of the PVC with a bucket and large equipment, risking damage to the pipe and the gasket.

With 28-to-1 leverage, it is easy for one person to join or separate PVC gasketed joints using the REED Plastic Pipe Joiner. This joiner can connect and separate 4- to 16-inch PVC gasketed pipe, such as C900 and C909, as well as water, sewer and PIP pipe. Components required include the PVC pipe assembly tool and V-shaped saddles.

Gasketed pipe is found in underground work like drainage pipe, irrigation systems and utility work, among other places. The pipe joiner is safe and under the operator's control for the assembly process. REED's pipe joiner also reverses direction to separate gasketed PVC, providing the operator with mechanical leverage to disconnect the joint.

REED
PIPE TOOLS & VISES SINCE 1896

Reed Manufacturing is based in Erie, Pennsylvania and has supplied the industry with high-quality pipe tools and vises for more than 125 years. Carl Reed, scion of one of Erie's pioneer families, along with three partners, started the business in 1896. In 1899 they filed papers to incorporate Reed Manufacturing.

800-666-3691 | reedsales@reedmfgco.com | reedmfgco.com

MUNICIPAL INNOVATIONS '24

The Solution for the FROG Plague in Sanitary Sewers

There is currently a plague attacking sanitary sewers: Fats, Roots, Oils and Grease — or FROG. The FROG gets into the sanitary sewer pipe and starts to grow with the roots feeding off the moisture and nutrients that run through the pipe, and the fats, grease and oils solidifying and building up in the pipe. The FROG growth reduces the diameter and flow of the pipe, eventually causing sanitary sewer overflows into houses, streets and public landscapes.

The RootX company offers tools to get the FROG out of the pipe and restore pipe flow capacity. To get rid of the roots and eliminate new growth, you can use the RootX root control product, which breaks down the root cells, reducing their aggressive growth and eventually killing them. The RootX company also offers Grease-X products which break down grease and keep the grease from coagulating further down the pipe.

ROOTX

RootX was founded in 1994 and is located in Salem, Oregon. RootX is the manufacturer and distributor of the RootX root control products and Grease-X grease control products for sewer lines. These products are sold to municipalities and drain cleaners across the United States, Canada and Australia.

800-844-4974 | rootx@rootx.com | rootx.com

EXERCISING STOP WORK AUTHORITY

Employees should feel empowered to report unsafe work conditions

By Ronnie Freeman

When a hazard is recognized at work, who has the authority to stop work and address the hazard? The manager, supervisor, or a foreman on the job site? If the answer is not everyone and/or anyone, then it is time to rethink your procedures on identifying hazards.

Hazards can happen anywhere and at any time. If your employees — all your employees — don't feel the freedom to speak up and stop work to correct the hazards, then they are being put at risk.

Our industry can have several different layers of danger, from less serious hazards like an unlabeled can of paint to more serious hazards like trench cave-ins and confined-space entry hazards. And there are many hazards in between that can cause injuries, property damage and in some cases even death.

Great communication is a must.

Employees of all positions can feel more empowered to speak up with proper training and backing from managers, supervisors and foremen. Even providing some sort of recognition to those who do speak up will inspire others to speak up as well. The message of "Stop Work Authority" should be taught in safety training as well as messaging throughout the organization so that everyone gets the message.

Some examples of when "Stop Work Authority" should be used:

- An employee witnesses an unsafe act by another employee
- A clear hazard that threatens the safety of the employee and other employees. Examples include a trench wall cracking, water accumulating in the bottom of a trench, a gas meter alarm sounds in a confined space, incorrect lockout/tagout procedures, improperly set up work zone, employee not wearing personal protective equipment as required and working around fall hazards without fall protection.
- A near-miss incident that could reoccur
- An employee witnesses an employee misusing a tool or equipment. Examples include hand and power tools, demolition saws, forklifts, excavators, backhoes and concrete saws.
- Any unsafe condition
- An employee using chemicals improperly or without proper PPE
- Improper operation of vehicles — speeding, reckless driving, distracted driving
- Improper lifting techniques
- Signs of poor housekeeping — slip, trip and fall hazards

Once an employee sees a hazard that they can quickly correct, they should feel empowered and responsible to do so whether it is rolling up an unused electrical cord, putting away tools to eliminate a trip hazard, or handing out hard hats and safety glasses to employees in need.

For the "Stop Work Authority" to work, great communication is a must. When an employee sees a hazard that requires more involvement, they must report the hazard to the supervisor or foreman who then should investigate the hazard. Then the supervisor should contact the qualified employees who are able to correct the hazard. Once the hazard is corrected, the supervisor should inform employees that the hazard is corrected and work can resume. This may take minutes, hours or even days depending on the hazard, and this is why proper communication is needed.

The benefits of having a "Stop Work Authority" policy are that employees feel empowered to speak up, and when they do this protects workers from hazard and possible injury. Having a policy also protects employees from any reprisals or other negative consequences for reporting the hazard. An employee working unsafely or ignoring a hazard may take offense to the employee who reports the hazard. That employee who makes the report should feel protected. This type of policy will also encourage a good overall safety culture within the workplace.

All employees should feel the responsibility and obligation to stop work when they see a hazard or unsafe condition. Ongoing messaging and training should continue so that there is no drop-off in reporting due to complacency. ✦

PARTNERING WITH HIGHER EDUCATION

A utility and a university collaborate on a program to introduce students to the basics of wastewater infrastructure

By Sandra Buettner

There was no hesitation when the University of Louisville approached Louisville Metropolitan Sewer District for help with a wastewater program for freshman engineering students.

MSD has a long-standing relationship with the university because a number of staff went to school there and maintain connections, says Daymond Talley, deputy chief of operations for treatment facilities.

"I received an email from the university's engineering department asking us to join a partnership and build a prototype model of our three stages of wastewater treatment that they could integrate into their course," Talley says. The model would be used as part of the university's Cornerstone Program in which freshman engineering students are required to create their own models with materials made available to them.

MSD delivers 120 mgd of drinking water to one million residents and cleans over 155 mgd of wastewater at its Morris Forman and West County treatment plants.

Something different

Brian Robinson, associate professor of engineering fundamentals for the university, approached Talley asking for ideas on a project freshman could work on that would be different from the standard bridges and windmill projects used previously.

Cornerstone courses are designed to make sure engineering students learn the most important aspects of a particular subject area. The university was looking for new partners to help students design and build prototypes from different industries. Talley and colleagues suggested a course centered around the district's clean-water infrastructure.

Stephanie Laughlin, infrastructure planning manager, says the Cornerstone course partnership enables the utility to reach a focused audience of future engineers who will learn what the district has to offer. That would help with the district's workforce development.

The utility set up a prototype for the model in 2021, and the first course was launched in summer 2022. "Through this curriculum, students design, build and optimize a program model using environmental engineering principles," Laughlin says. "So far, 480 freshmen have gone through the Cornerstone Program."

Student feedback

Utility team members regularly visit the freshmen while they are wrapping up and presenting their projects, asking about their takeaways from the course. As sophomores, the students are required to go through a co-op program and work with one of their project partners. Three students have interned at district facilities under the co-op program.

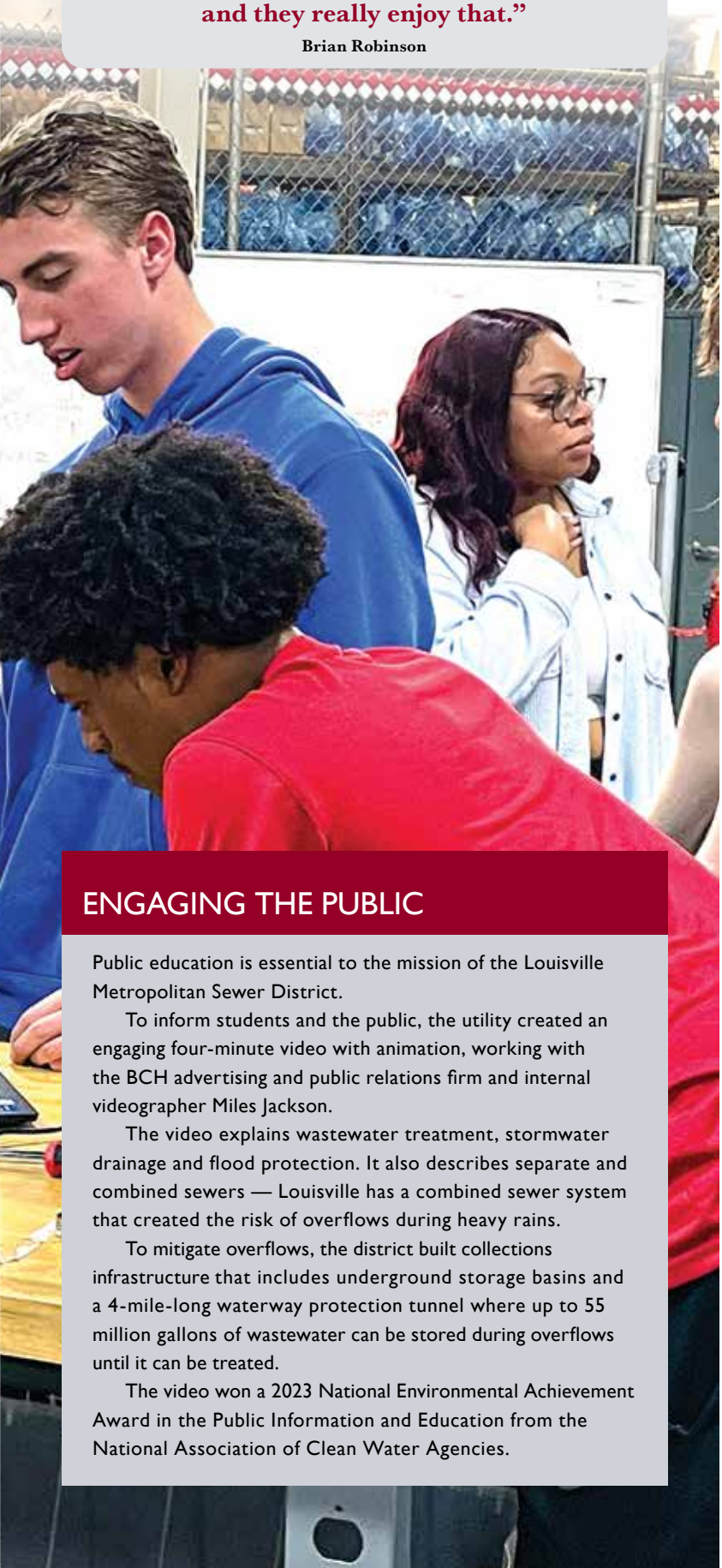
The Cornerstone project has been very helpful to the freshmen, according to Robinson. Their model includes a collection tank, an overflow tank, and a treatment center tank.

"They get hands-on experience in building their water infrastructure prototype project and they really enjoy that," Robinson says. "They also get exposure and awareness of an industry they were not familiar with."

The university has been through three classes of the Cornerstone water infrastructure program. After one more class, the program will be cycled into a rotation with three other industries: robotics, windmills and bridges.

"The partnership has been great," Robinson says. "And the university has been with us all the way by first building the prototype for students to emulate. They continue to talk to the students during and after the course to find out the takeaways they enjoyed." ✦

> **"They get hands-on experience in building their water infrastructure prototype project and they really enjoy that."**
>
> **Brian Robinson**



ENGAGING THE PUBLIC

Public education is essential to the mission of the Louisville Metropolitan Sewer District.

To inform students and the public, the utility created an engaging four-minute video with animation, working with the BCH advertising and public relations firm and internal videographer Miles Jackson.

The video explains wastewater treatment, stormwater drainage and flood protection. It also describes separate and combined sewers — Louisville has a combined sewer system that created the risk of overflows during heavy rains.

To mitigate overflows, the district built collections infrastructure that includes underground storage basins and a 4-mile-long waterway protection tunnel where up to 55 million gallons of wastewater can be stored during overflows until it can be treated.

The video won a 2023 National Environmental Achievement Award in the Public Information and Education from the National Association of Clean Water Agencies.

OPEN TO OPPORTUNITY

Canadian utility focuses on system upgrades to support community and economic growth

By Peter Kenter

The small town of LeRoy, Saskatchewan, has always believed that building and maintaining critical infrastructure is a prerequisite for growth — not an afterthought. Town foreman Kirt Holowachuk, who has overseen the town's water and wastewater systems for a dozen years, embodies that belief and is recognized in the community as an infrastructure champion.

LeRoy is located about a two-hour drive north of the province's capital city of Regina. Its current population is more than 500, representing organic growth of more than 20% over 10 years. However, the biggest economic news in the area has been the construction of the BHP Jansen mine, which has the potential to be one of the largest potash mines in the world. Located just five miles away, LeRoy is the nearest community to the mine and stands to benefit from some of the more than 800 permanent jobs and economic activity associated with its operation.

"A community needs to be ready or a potential business or opportunity will go to the nearest community that's ready," says LeRoy Mayor Kurt Schreiner. "We were already experiencing growth and we anticipate further growth with BHP, so it's been extremely important to be proactive with our water and sewer systems."

He credits Holowachuk for being integral to driving recent improvement to the town's infrastructure.

"With his knowledge of infrastructure and his ability to come up with and maintain a strategic plan, Kirt's a special breed and puts his heart and soul into this community," he says.

Holowachuk is a fixture at town council meetings, advocating for improvements to sewer and water infrastructure that he believes will add value to the community and promote economic growth.

"They get nervous when they see me on the council meeting agenda," he says. "Will it be a quick report or will I talk their ears off for the next hour?"

Prioritizing upgrades

The town built its first sewer and water system in 1964. Water was supplied by two shallow wells and treated by a greensand filtration system and pumped into a 50,000-gallon underground reservoir. LeRoy added a second 60,000-gallon aboveground reservoir more than 30 years ago. Wastewater was conveyed via gravity to a lift station with a small holding tank, and finally to treatment in the town sewage lagoon via force main.

While water quality was good, it was also heavily mineralized. In 2004, town council voted to replace the shallow wells with a new 500-foot well and replaced the filtration system with a reverse osmosis system that would provide softer potable water. It was one of the first RO systems in the region. The town

PROFILE:
Town of LeRoy, Saskatchewan, Canada

WEBSITE:
leroy.ca/town-office/municipal/water-sewer/

YEAR ESTABLISHED:
1964 (installation of sewer and water infrastructure)

RESIDENTS SERVED:
500-plus

SERVICE AREA:
0.35 square miles

DEPARTMENT STAFF:
2 full-time, 2 casual

CURRENT INFRASTRUCTURE:
Water— 3.7 miles
Sewer— 3.5 miles

ANNUAL BUDGET:
$200,000 (Canadian)
$146,000 (U.S.) (2024)

ASSOCIATIONS:
Saskatchewan Water & Wastewater Association, Saskatchewan Public Works Association

Kirt Holowachuk, town foreman for Leroy, Saskatchewan, discusses work plans at the start of his day.

PHOTOGRAPHY BY DAVE STOBBE

"I made a big push for these improvements because, for me, everything comes down to making sure we have consistent, safe water."

Kirt Holowachuk

"A community needs to be ready or a potential business or opportunity will go to the nearest community that's ready."

Kurt Schreiner

Holowachuk performs a daily maintenance check at the town's pump station.

also expanded the sewage lagoon with the addition of a larger second cell that more than doubled treatment capacity.

With infrastructure in place, LeRoy acted as its own developer for a 34-lot, fully-serviced subdivision in 2009.

Holowachuk began working for LeRoy in 2012. With the current assistance of one full-time and two casual employees, his department's responsibilities include sewer and water infrastructure, road maintenance, urban forestry and operating the town's ice rink in winter. The team is supported by a John Deere tractor-loader and a Caterpillar skid-steer.

"We have a shop with an office," Holowachuk says. "But more often than not, my office is in my pickup or on the seat of whatever piece of equipment I'm operating."

To support a gradual population increase, he first prioritized improvements to the wastewater system. The town hired an engineering firm to audit sewer usage and determine how much additional growth the system could sustain. Based on the study report, Holowachuk advocated for significant upgrades totaling CA$1.5 million, which were approved by council for 2016.

"Our aging lift station represented the weakest link in the system," he says. "It was at capacity and any significant growth or even a high water event would test those limits. Instead of repairing and rebuilding, we felt we could get better value from a new combination dry well and wet well."

The new, upsized lift station featured more powerful pumps, employed pressure sensors instead of floats and incorporated a backup natural gas generator. The lift station also provided easy access for maintenance work.

At the same time, a second force main was added to the system and upsized from 6 inches in diameter to 8 inches. The original force main was kept in place for use during maintenance or emergencies.

Creating redundancies

With wastewater improvements completed, Holowachuk next turned his attention to water supply. The 2017 project list, budgeted at CA$315,000, included upgrades to the water treatment plant, installation of a new fire pump, a new 8-inch stainless steel header pipe and the addition of a natural gas backup generator for the entire system.

"I made a big push for these improvements because, for me, everything comes down to making

sure we have consistent, safe water," he says. "I also made a continuing case for creating redundancies in the water system."

That goal was realized in 2023, when the town developed a second 475-foot well with its own distribution pump. The well systems can run independently of each other and serve the town during emergencies and routine maintenance.

"When we're doing maintenance work, you have to get the pump pulled apart, figure out what you need, and then put it back together," Holowachuk says. "Especially since COVID, getting parts is getting harder and there's always a long lead time for anything we order. That delay isn't as big an issue with the backup water system."

A regular maintenance schedule keeps the system in shape. The wastewater system is flushed on a four-year cycle, with extra attention paid to those sections where the grades on the gravity system aren't as steep.

Water systems are also flushed in spring and fall in tandem with fire department hydrant training.

"During those exercises, we're noting the performance of the older isolation valves and hydrants," Holowachuk says. "We try to replace a couple of isolation valves every year and hydrants as necessary."

While the town's water mains are in good shape, service connections continue to represent the weakest point of the system. Pipe saddles installed in the 1960s were made of brass and connected with black iron bolts, which have corroded over the years. Both saddles and bolts are now replaced with stainless steel.

Proud service

As LeRoy anticipates growth that could double the population of the town, Holowachuk continues to champion the expansion and maintenance of its infrastructure. At the annual conference of the Saskatchewan Water and Wastewater Association, of which he's a board member, utilities often present seminars on their top projects.

"Large cities always have the big flashy projects with big budgets and the newest kind of water and wastewater treatments," he says. "But the small operators don't often get a chance to brag about what they've done to support their communities. Sometimes that small town guy has been fighting to get a chunk of road ripped up to get a pipe replaced. That's his crowning achievement for four years and he's the proudest guy in town." ✦

COUNCIL TAKES THE INFRASTRUCTURE TOUR

Kirt Holowachuk, foreman of the town of LeRoy, believes that actually seeing the key components of the town's sewer and water infrastructure in operation is the best way for council members to truly understand it. That's why he insists that all newly elected members join him on a personally guided tour known as "Kirt 101."

"I attend the first meeting of the new council and ask the councilors when they want to go for a tour, so they'll understand the system they're funding," Holowachuk says. "We start at the wells where the water comes in and we end at the sewage system where it leaves. When I make reports to council and make my pitches for the system, it's a lot easier for them to make a knowledgeable decision on whether to repair, rebuild or replace."

He notes that it's easier to engage with town council by stressing the value of a project they understand. One such project, the replacement of the town's 250 water meters with newer Neptune models, resulted in net savings. Most of the meters were installed in the 1960s and were located inside the house, making meter reading challenging. As a result, readings were taken every two to three months, with customers receiving averaged monthly water bills. The old meters were also less accurate than newer models.

"Our staff replaced all of the meters with new Neptune models and we were able to provide accurate bills for our residents each month," Holowachuk says. "As we installed the meters, we noticed that people were suddenly wondering why they had higher bills month over month. They started troubleshooting their systems or coming to us for assistance. As a result, our water usage and our water losses are down significantly."

LeRoy Mayor Kurt Schreiner recalls taking the tour shortly after his election.

"Kirt's tour reinforced forward-thinking and how we had to look to future expansion and repairs and work them into the budget," he says. "One of our main jobs as councilors is to make sure we have good water and sewer services and that isn't just a one-time decision."

 By Craig Mandli

LOCATION AND LEAK DETECTION

Electronic Leak Detection

General Pipe Cleaners Gen-Ear LE

The **Gen-Ear LE** from **General Pipe Cleaners** is an easy-to-use, economical water leak locator with strong sound amplification. It can be used to pinpoint water leaks in residential and commercial waterlines. The compact amplifier fits easily in the palm of your hand. It provides noise-free amplification with built-in preset audio filters so you don't have to guess what settings to use. High-performance headphones with noise cancellation block out interference from surrounding ambient noise. The advanced acoustic sensor listens for the gurgling or hammering of water escaping from a cracked pipe under any surface, like concrete, tile, grass or carpet. For especially hard-to-find leaks, the Sound Amplification Module adds air to the line, increasing the water pressure and amplifying the leak sounds and making them easier to locate. **800-245-6200; www.drainbrain.com**

Hermann Sewerin GmbH SeCorrPhon AC 200

The **SeCorrPhon AC 200** from **Hermann Sewerin GmbH** combines the characteristics of a correlator with acoustic water leak detection, meaning prelocation, pinpointing and correlation in a single system. It includes an easy-to-read measurement value display and automated filter selection. It is based on the tried and tested housing and hardware concept of the AQUAPHON A 200. Each is ideal for use for leak detection across all sections, materials, diameters and lengths of pipe. Numerous additional functions are also available for complex location scenarios. **888-592-9916; www.sewerin.com**

Electronic Line Locators

Hathorn Inspection Cameras Utili-Track

The **Hathorn Inspection Cameras Utili-Track** sonde and cable locator allows users to adapt the locator to their specific needs. It offers a 512 Hz sonde and line trace locating indicating direction of the sonde and its depth. Ergonomically designed and balanced, it provides depth reading of up to 25 feet and current measurement to help identify target utilities and sondes in crowded areas. A large, high-contrast LCD offers a visible signal response. Automatic depth, automatic current, and proximal directional arrows are readable in the brightest sunshine or backlit for viewing in dimmer conditions. The unit comes with six C-cell batteries. **866-428-4676; www.hathorncorp.com**

MyTana Complete Pipe Locator Package

MyTana bundles the MT 512+ Locator and LineFinder Transmitter in a convenient **Complete Pipe Locator Package** to give expanded locating capabilities beyond detecting 512 Hz signals from sondes and inspection camera transmitters. The MT 512+ has multifrequency support and multiple operating modes for a wide range of applications. With the LineFinder Transmitter, it can trace signals along buried utilities, cast iron pipes and more with minimum interference, all while maintaining the ability to continue locating past faults and around conduit bends. The locator/receiver has a large digital display with real-time graphic and audio indicators. Both products are powered by a long-lasting lithium-ion battery. **800-328-8170; www.mytana.com**

Radiodetection RD8200SG Survey-Grade Precision Locator

Locate and map buried utilities in a single operation with **Radiodetection's RD8200SG Survey-Grade Precision Locator.** Equipped with an integrated GNSS antenna, users can simultaneously view and build maps with survey-grade accuracy on a mobile phone while locating. It excels in locating buried utilities, with features such as technology that rejects strong interfering signals, current direction to identify targets among a number of parallel utilities, and StrikeAlert to warn of shallow cables, reducing the risk of accidents or damage to buried infrastructure. An ergonomic, lightweight design ensures comfort during extended use, while automatic usage logging and swing warnings promote proper handling and enhance safety. **877-247-3797; www.radiodetection.com**

Schonstedt u-LOCATE Pipe & Cable Locator

Schonstedt's **u-LOCATE Pipe & Cable Locator** is ideal for plumbers, electricians, landscapers, site managers and facilities maintenance techs who occasionally need to detect and trace a buried utility on a job site. With features like a high-contrast screen and shock-resistant casing, it is built to withstand challenging field conditions. Its 82 kHz active frequency, 1 W transmitter, depth estimation, left/right guidance arrows and passive power locating capabilities make it versatile for various locating tasks. It is available in two models — the u-LOCATE and the u-LOCATE+. The latter includes dual frequencies (33 and 82 kHz) and 512 Hz sonde capability for more complex needs. Both models support additional accessories, such as signal clamps and sonde tracers, to extend the capabilities of the locator and transmitter. **888-367-7014; www.schonstedt.com**

Subsite Electronics UtiliGuard 2 RTK receiver

The **UtiliGuard 2 RTK** (real-time kinematic) receiver from **Subsite Electronics** is designed with survey-grade technology and dual-band antennas to deliver centimeter-grade accuracy, making it an ideal solution for locating abandoned and untracked utilities that are often difficult to pinpoint. Its high-precision capabilities provide insights into underground infrastructure, helping crews avoid cross bores during future projects. Like the UtiliGuard 2 Standard and Advanced units, the RTK receiver features inte-

grated data capture, GPS positioning and an intuitive user interface to improve work quality and maximize locate awareness. Additional enhancements include dead-reckoning capabilities, which help operators maintain accurate locates in heavy tree canopy or areas where GPS signals falter. A multifrequency fault-finding capability also allows contractors to accurately identify and locate faulted power lines using a broad spectrum of customizable frequencies, up to 10 kHz. **800-846-2713; www.subsite.com**

Vivax-Metrotech vLoc3 RTK-Pro

The **vLoc3 RTK-Pro** utility locator from **Vivax-Metrotech** adds RTK GNSS accuracy. Using the internal cellular module with 4G LTE capabilities, the operator can connect to an NTRIP RTK (Real-Time Kinematic) caster that provides RTCM 3 corrections. By utilizing these corrections, the operator can collect both utility location data and the utility's geographical location with survey-grade accuracy. All field data is sent to the cloud and retained in the receiver's onboard storage for review and exporting to mapping programs. The user-configurable receiver contains eight passive locate modes, fault find mode, Signal Direction and a range of frequencies from 98 Hz to 200 kHz. Users can also configure visual and mechanical vibration alerts for shallow depth, overload, overhead cables and excessive swinging. **800-446-3392; www.vxmt.com**

Smoke Locators

Hurco Technologies Power Smoker 2

The **Power Smoker 2** from **Hurco Technologies** quickly locates leaks in new and existing plumbing systems. The machine is connected to a cleanout, and smoke is sent through the system to reveal any problem areas. The system uses LiquiSmoke, a laboratory-tested safe smoke that costs cents per minute to use and has an indefinite shelf life. When the test is complete, the smoke dissipates without leaving an odor or residue. **800-888-1436; www.hurcotech.com**

Superior Signal 25-L High Output Smoke Fluid System

The **Superior Signal 25-L High Output Smoke Fluid System** combines an efficiently designed smoke fluid system with a blower output of 4,000 cfm of smoke at 4.0 static pressure, more than double the normal output, to push smoke through larger systems requiring greater volume and pressure. It fits all standard manholes and contains a second accessory nozzle for blowing smoke into pipes and other nonstandard openings. The smoke-testing technique is used to find leaks in plumbing, drain, vent and collection systems. **732-251-0800; www.superiorsignal.com** ✦

WORTH NOTING

PEOPLE/AWARDS

After 28 years of serving the city of Elizabethton (Tennessee) in various roles, stormwater coordinator Joseph Barnett retired in July.

Tim Wilson was named director of the Streets and Stormwater Department for the city of Broken Arrow (Oklahoma).

North Carolina's State Water Infrastructure Authority approved funding assistance (loans and/or grants) for various applications, including:

- Town of Nags Head, Bonnett Street Stormwater Pump Station Project, $2.3 million
- Town of Pembroke, Stormwater Construction Project, $2.4 million ✦

CALENDAR

February 2-4
North American Stormwater and Erosion Control Association of Wisconsin Annual Conference and Trade Show, Glacier Canyon Conference Center, Wisconsin Dells. Visit nasecawi.org.

February 25-28
International Erosion Control Association Annual Conference and Expo, Richmond Convention Center, Richmond, Virginia. Visit ieca.org.

March 5-7
Wisconsin Land and Water Conservation Association Annual Conference, KI Center, Green Bay. Visit wisconsinlandwater.org.

April 8-10
Center for Watershed Protection National Conference, Royal Sonesta San Juan Hotel, Puerto Rico. Visit cwp.org.

May 18-22
Association of State Floodplain Managers National Conference, Sheraton New Orleans Hotel, New Orleans, Louisiana. Visit floods.org.

May 20-21
Washington State Municipal Stormwater Conference, Hilton, Vancouver. Visit wastormwatercenter.org.

June 8-11
American Water Works Association ACE25 Conference, Colorado Convention Center, Denver. Visit awwa.org.

June 15-18
Michigan Water Environment Association Annual Conference, Boyne Mountain Resort, Boyne Falls. Visit mi-wea.org.

September 15-17
California Stormwater Quality Association Annual Conference, Pasadena Convention Center. Visit casqa.org.

September 27-October 1
Water Environment Federation Technical Exhibition and Conference, McCormick Place, Chicago. Visit wef.org.

Municipal Sewer & Water *invites your national, state or local association to post notices and news items in this column. Send contributions to editor@mswmag.com.*

Product Spotlight

Diesel-powered trailer jetter brings increased power

By Craig Mandli

On jetting jobs, more power means improved cleaning quality and time management. With that in mind, HotJet USA recently announced a new Turbo Diesel Trailer Jetter (20 gpm at 4,000 psi) powered by a Yanmar diesel engine. The jetter features 59 hp in a compact, affordable package — offering over 10% more power than traditional 18 gpm units.

The Yanmar-powered units are Tier 4 compliant, are fuel efficient and use an XL Radiator. The diesel engines are water-cooled for maximum efficiency and are easily maintained by a network of service centers nationwide.

"The smooth harmonics of these engines promote not only a long life for the engines themselves but also bring out the best performance and durability of all of the components that make up the HotJet USA Turbo Diesel Jetters," says Morris "Mo" Morgan, owner/operations manager for HotJet USA. "Yanmar has strict requirements for its products, sending out its own representatives to test them for compatibility with the equipment they are used in."

The jetters can be mounted on 5-by-12 to 5-by-16-foot decks with a choice of single or tandem axle. Trailers are powder coated with an axle rating of 1 x 7,000-pound (single) or 2 x 3,500-pound (tandem). These units can also be mounted inside of enclosed trailers. They feature a low-noise muffler, low engine oil/high temperature auto shutdown system, 330-gallon water tank (upgradeable to 660 gallons), a NEMA 4-rated control panel, a run-dry capable UDOR Penta pump, and a solid-state remote control.

"When we teamed up their motor with the UDOR five-cylinder pump, it blew us away," Morgan says. "The five-cylinder's performance and ease of service far outpaces the three-cylinder currently being used in the market."

They are available in cold or hot/cold operation and will clean drainlines from 2 to 24 inches, which makes them ideal for residential, commercial and industrial applications. A relief valve system allows the unit to run with an option of 500 feet of 1/2-inch hose or 300 feet of 3/8-inch hose. Both reels are hydraulically powered.

"Veterans in the industry — those who've been at it two or three decades — have been singing its praises," Morgan says. "The faster cleaning jobs have increased revenue and have left customers very impressed. They're calling this machine a beast." **800-624-8186; www.hotjetusa.com**

SPECIAL REPORT

OZ Lifting Products CompOZite davit crane

Experience unparalleled portability and strength with the CompOZite davit crane. Engineered from lightweight advanced composite material, this patented crane is 40% lighter than traditional steel models for effortless maneuverability. Despite its reduced weight, it maintains a robust lifting capacity of 1,200 pounds, making it a reliable choice for various lifting tasks. Utilizing Smart Latch technology, the CompOZite davit crane is designed for ease of use, requiring no tools for assembly. Its composite material also provides superior corrosion resistance, ensuring long-lasting durability. The crane features 360-degree rotation and four adjustable boom heights to ensure exceptional versatility. Standard with a manual brake winch, the CompOZite offers optional AC and DC electric winch upgrades. Every unit is individually tested and certified at 125% capacity, guaranteeing top-notch safety and performance. Made in the USA, the CompOZite davit crane is a testament to innovation and quality lifting equipment.
800-749-1064; www.ozliftingproducts.com

Cla-Val Cla-Cover aluminum enclosures

The Cla-Val Co. introduced Cla-Cover, an aluminum enclosure designed to protect Cla-Val automatic control valves from the elements and prevent theft and vandalizing of equipment. The Cla-Cover is engineered for easy installation, access and servicing while providing secure protection of what lies beneath. Cla-Covers are constructed with marine-grade aluminum and sealed-on polyisocyanurate insulation for an R9 value on the sides and R18 on the top and bottom panels. They are braced with sustainable, durable California redwood. Heat and ventilation options are available to withstand hot summers, and a wall-mounted heater or heat cables are available based on the size of the unit for freezing climates. Fan and louver options are also offered to help keep ACVs regulated in the summer heat. The covers meet ASSE 1060 standards, are certified for freeze protection and feature a leak detection system for easy inspection. **800-942-6326; www.cla-val.com**

Neenah Foundry InfraLOCK Release

As underground electrical infrastructure ages, the potential grows for fires or other gaseous buildup that result in manhole cover explosions. To reduce the risk, Neenah Foundry developed the InfraLOCK Release that incorporates ABLOY high security locks. The InfraLOCK Release prevents the manhole lid from dislodging during explosive events by safely releasing pressure while securing underground infrastructure. The innovative drop-in replacement manhole cover for utilities, sewer systems and underground utility systems is designed to release built-up pressure without dislodging from the frame and includes an ultra-strong locking system to secure access. ALCEA is the recently introduced critical infrastructure security solutions brand of ASSA ABLOY Global Solutions, and represents ABLOY technologies in North America.
800-558-5075; www.nfco.com

CUES OZ4-HD high-definition pan-and-tilt mainline camera

The new CUES OZ4-HD is a 1080p high-definition pan-and-tilt mainline camera for sanitary and storm sewer inspections. The camera is designed to be backward compatible, so customers currently running CUES equipment are now able to upgrade to HD for a minimal investment. The camera's robust design withstands harsh conditions, ensuring durability and reliability. Users can seamlessly switch between standard definition and high-definition cameras without workflow interruptions. CUES's GraniteNet Software offers support for HD video, ensuring seamless integration and optimal performance when using the OZ4-HD Camera. The camera is compatible with industry standards, such as NASSCO's Pipeline Assessment Certification Program. **800-327-7791; www.cuesinc.com**

Valley Industries VIPower electric motors

The VIPower electric motor family from Valley Industries addresses the pressing need for efficiency, cost-effectiveness and environmental responsibility across diverse industries. VIPower electric motors require minimal maintenance compared to traditional gas engines, eliminating oil changes, spark plug replacements and carburetor repairs, reducing downtime and lower operational costs for businesses. With zero emissions, VIPower motors provide operational flexibility suitable for indoor and noise-sensitive environments. Designed for plug-and-play compatibility, VIPower motors seamlessly integrate with existing equipment using Honda GX or similar gas engines. VIPower motors utilize LiFePO4 battery packs renowned for superior energy density, extended life span and enhanced safety.
800-864-1649; www.valleyind.com

CASE 580EV electric backhoe loader

CASE Construction Equipment has expanded its EV toolbox for municipal crews, utility teams, urban construction and other contractors with the commercial release of its 580EV electric backhoe loader. The EV backhoe loader will soon be followed by the commercial availability of two additional EV machines — the CX25EV 2.5-metric ton mini-excavator and the CL36EV 3.6-metric ton compact wheel loader. The new equipment will increase CASE's EV lineup to five models, including the previously launched CX15EV electric mini-excavator and the SL22EV small articulated loader. Powered by a 400-volt, 71-kWh lithium-ion battery platform, the electric backhoe loader is designed to deliver up to eight hours of operational run time on a single charge, depending on the application. The battery platform also uses an advanced thermal management system with system-specific cooling circuits to better regulate temperatures and help maintain performance in hot or cold conditions.
866-542-2736; www.casece.com

IPEX TerraBrute CR pressure pipe system

Crafted specifically for HDD and other trenchless applications, TerraBrute CR stands out as a 100% nonmetallic AWWA C900 PVC pressure pipe system. Offering corrosion resistance, TerraBrute CR allows for standardization on PVC across potable water and sewer infrastructure. Eliminating material and coupling compatibility issues, TerraBrute CR ensures seamless integration, whether utilizing opencut or trenchless methods. Its innovative ring-and-pin design ensures complete corrosion resistance, allowing for easy installation and strong locking joints. Engineered for compatibility with municipal systems, it enables connections with standard PVC CIOD fittings, directly tapped couplings or standard service saddles. With a proven gasket bell and spigot design, TerraBrute CR joints are tested and pressure-rated for reliability and safety, featuring the industry's highest pull strength safety factors for HDD applications. **800-463-9572; ipexna.com** ✦

LOCATION AND LEAK DETECTION

By Craig Mandli

City uses data-as-a-service to improve efficiency

Problem:

The city of Grand Rapids, Michigan, maintains a collections system that includes 1,100 miles of sanitary sewer pipe and 385 miles of stormwater pipe. The age of the collections system varies with some segments over 100 years old. Like the vast majority of collections systems, Grand Rapids is challenged with wet weather events that result in I&I. In 2022, the city pivoted its approach and sought out a partner to take responsibility for the operation and maintenance of the monitoring network including hardware, software and data preparation. This enabled the city to focus solely on data analytics, thus embracing the data-as-a-service model.

Solution:

Grand Rapids, through their services provider, **ADS Environmental Services,** now has 36 flowmeters and 10 rain gauges deployed in both their sanitary sewer and stormwater collections systems. In the stormwater system, the city looks at peak flows in wet weather and flows (possibly illicit) during dry weather. The systems are set up to acquire data at set intervals of every 5 minutes on an ongoing basis. Typically, data is transmitted once per day to cloud-based software where it is stored for viewing and analytics.

RESULT:

The service provider's in-depth monitoring experience provides assistance with determining monitoring locations and installation methods, assuring that the most relevant data is acquired. This has allowed city operations to refocus on projects and tasks utilizing their core capabilities.
800-633-7246; www.adsenv.com

Contractor relies on pipe plugs for inspection and cleaning operations

Problem:

Miller Underground offers comprehensive sewer infrastructure solutions, including catch basin cleaning, hydroexcavation and CCTV inspections throughout North America. "Each day presents a unique challenge that requires diverse testing equipment," says Samantha Da Silva, combo truck operator and shop manager. "Strict adherence to a checklist for handling pipe plugs is crucial."

Solution:

During sewer inspections and maintenance, Miller Underground relies on **Cherne** Pipe Plugs for consistent performance. "We own an assortment of Cherne plugs that cater to varied pipe sizes from 200 to 600 millimeters," Da Silva explains. They also use the Cherne Air-Loc Low Pressure Air Testing Control Panel to monitor compressor, plug and test pressure. Blocking plugs temporarily halt wastewater flow for thorough sewer line inspections, enabling accurate diagnostics and informed maintenance recommendations. Miller Underground uses Cherne 6- to 10-inch I-Series Test-Ball Plugs for air pressure testing in the Port Lands Flood Protection Project in Toronto, scheduled for completion in 2024. This project includes creating a naturalized river valley, new public spaces, roads, bridges and utilities.

RESULT:

To ensure safe handling of Cherne pipe plugs, Miller Underground prioritizes training. "During our early stages, a Cherne representative trained us on proper use and safety guidelines," says Da Silva. Employees follow rigorous protocols, from plug size selection to pressure monitoring, ensuring safe and efficient operations. Miller Underground consistently relies on Cherne pipe plugs for their durability and reliability, enhancing the efficiency and safety of their projects.
800-843-7584; www.cherneind.com ✦

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4

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5

wwett YOUNG PROFESSIONALS

Inaugural **Young Professionals Awards** to honor and celebrate rising stars making a big impact during a special ceremony at The WWETT Show 2025

NASSCO is located at 5285 Westview Drive, Suite #202, Frederick, MD 21703; 410-442-7473; www.nassco.org

Sheila Joy is executive director of NASSCO. She can be reached at director@nassco.org.

NASSCO SETS COMMITTEE GOALS

Expanded initiatives and new and updated guidelines take focus in 2025

By Sheila Joy

NASSCO committees contribute greatly to our industry through the development of educational programs, technical resources, and advocating for funding. We've outlined our goals for the upcoming year and will continue working to advance the trenchless industry.

Government Relations - U.S.

1. Increase Sewer System Heroes Campaign engagement on nassco.org
2. Provide one blog/article by members each quarter to be published in the NASSCO Pipeline and advertised through social media
3. Conduct one in-person and three virtual D.C. Fly-In events each year
4. Work with NASSCO staff to produce a video based on asset management and funding

Government Relations – Canada

1. Develop a key recommendations policy document for Canada
2. Position PACP as the preferred/official standard in Canada
3. Expand the Sewer System Heroes Campaign to reach elected officials in Canada
4. Conduct one fly-in style meeting with MPs in Ottawa

Health and Safety

1. Complete safety video on the topic of confined-space entry
2. Develop video on the topic of styrene monitoring equipment
3. Produce NASSCO safety podcasts
4. Develop safety topics for NASSCO's website
5. Identify opportunities to educate on the topic of CIPP as a safe and viable solution for culvert rehabilitation

Infrastructure Condition Assessment

1. Develop a guideline for valve chamber/components assessments
2. Develop curriculum for high-level recognition of understanding course on the topic of PACP for contract administration and QA/QC
3. Review PACP Guidelines and revise as necessary to address video quality/visibility issues
4. Develop ADR specification guidelines and workflow process

Infiltration Control Grouting

1. Present test cell webinar ("Seal and Stabilize")
2. Develop curriculum and related materials for self-paced online ITC grouting course
3. Review and update, if necessary, existing grouting specification guidelines
4. Develop specification guideline for manhole grouting

International Business

1. Finalize translation of NASSCO website into French
2. Translate the ITCP manual into French and Spanish
3. Translate the PACP manual into Portuguese
4. Develop and present an industry-wide webinar in French
5. Develop and present two industry-wide webinars in Spanish
6. Continue translation of all NASSCO resources into Spanish and French
7. Support NASSCO staff with global training opportunities

Lateral And Building Pipe

1. Complete content development of NASSCO's lateral MOP
2. Launch NASSCO's Building Drain and Sewer Inspection certification course
3. Review and update the CIPP Lateral Seals Performance Specification Guideline
4. Develop content for BDSI for municipalities
5. Develop a specification guideline for aboveground CIPP in buildings
6. Develop an outline for future development of ITCP-CIPP small pipe module

Leadership

This committee meets as an open forum to exchange ideas on leadership, hear from speakers on important topics including attracting and retaining employees, and identify ways to become stronger leaders overall.

Operations and Maintenance

1. Update 2014 NASSCO sewer cleaning and CCTV specifications
2. Complete and launch Drain Cleaning Certification Program
3. Finalize NASSCO's Bypass Pump Training
4. Begin Mainline Cleaning Certification Program

Pipe Rehabilitation

1. Finalize white paper and matrix on trenchless rehabilitation technologies
2. Develop a specification guideline on sliplining
3. Develop content for a video on sliplining
4. Review and update NASSCO's pipe bursting specification guideline
5. Edit NASSCO website content on trenchless technology

Pressure Pipe

1. Present industry-wide webinar on pigging
2. Finalize video on pressure pipe assessment
3. Finalize video on pressure pipe rehabilitation
4. Develop two performance specification guidelines for inserted hose liner – one for close fit and the other for loose fit
5. Review and make suggested changes to pressure pipe content on website

Sewer Structure Rehabilitation

1. Complete revisions to NASSCO's Manhole Rehabilitation Performance Specification Guideline
2. Complete NASSCO's brick surface preparation specification guideline
3. Update Sewer Structure content on NASSCO's website
4. Develop a "Sewer Structures Explained" video

Software

1. Complete PACP V6-7 and V7-8 mapping
2. Complete API for PACP Version 8 software
3. Review the current MACP process on both the inspection and software side to identify ways to optimize
4. Consider exchange database for NASSCO's BSDI certification program
5. Work with NASSCO staff to identify ways to prevent fraudulent use of individual certifications

Young Professionals

This committee brings together young professionals to collaborate on ways to attract young talent to the underground infrastructure industry and to become more involved in NASSCO.

If you are not yet a member, please join us at nassco.org/join and have a voice in the development of these initiatives. ✦

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Mark Monroe

Asahi/America names new VP of East and Central sales

Asahi/America has promoted Mark Monroe to vice president of sales for the East and Central regions of the United States. His career with Asahi/America spans more than 11 years, serving in various capacities within the company's sales organization. His most recent role at Asahi/America was as regional sales manager for the Central region of the U.S.

Matt Murray

Matt Murray joins SJE as vice president of sales – CLT division

Matt Murray has joined SJE as vice president of sales – CLT division. Murray replaces former vice president of sales Richard Rankka following his recent retirement. Murray will lead the sales strategy, product management and marketing for the controls and level-sensing technologies division of SJE. He brings over 18 years' experience in various leadership and sales roles, including positions as director of sales, global strategic account manager, and senior business unit manager. Most recently, Murray was the senior business unit manager — industrial distribution at Franklin Electric. Prior to that he spent seven years with ITT Goulds Pumps in several roles with his last being global strategic account manager.

Felling Trailers celebrates 50 years in manufacturing

Felling Trailers took the opportunity to celebrate its 50th anniversary with the AEM Manufacturing Express, gathering employees to celebrate the company's history and continued development. Over 200 of Felling's team members gathered together by the company's new powder coat facility in Sauk Centre, Minnesota, to enjoy an afternoon filled with games, food and prizes, along with the opportunity to visit with fellow team members, policymakers and AEM team members. The games provided by AEM are part of its Manufacturing Challenge; the online video games invite participants to tackle industry-themed questions for a chance to win prizes. The tour covers more than 20 states with 80 stops at equipment manufacturers to showcase the technology and innovations that power modern equipment and the innovative technologies, processes, people and products across America.

AWWA selects Tnemec to receive 2024 Innovation Award

The American Water Works Association awarded its 2024 Innovation Award to Tnemec Co. for its development of the first NSF/ANSI/CAN Standard 61 certified water-based protective coating system designed for potable water immersion service. By eliminating the need for solvents and isocyanates, both known for their environmental and safety concerns, Tnemec's water-based system offers a safer and more eco-friendly solution without sacrificing performance or longevity. AWWA's Innovation Award recognizes a member who has inspired or implemented an innovative idea, best practice or solution to benefit the water sector.

infinitii ai wins contract with city of Vancouver

infinitii ai announced it won a competitive bid with the city of Vancouver. The company will provide the city with access to infinitii flowworks real-time data monitoring software as part of a three-year contract. With a population of 631,000, Vancouver is one of Canada's fast-growth cities and British Columbia's largest municipality.

PAGE Technologies wins The Water Council's spring Tech Challenge

The Water Council announced PAGE Technologies, a water and soil monitoring platform based in Boulder, Colorado, as the winner of its spring 2024 Tech Challenge. The Tech Challenge connects water innovators with leading water technology companies, facilitating potential partnerships and helping new ideas and technologies gain exposure in the industry. The topics and winners are chosen by the challenge sponsors, A. O. Smith Corp., Badger Meter and Watts Water Technologies. This session's challenge sought water quality sensor solutions.

South Texas Water Authority and Seven Seas Water Group announce agreement

The South Texas Water Authority and Seven Seas Water Group have signed a long-term water supply agreement. Under this Water-as-a-Service agreement, Seven Seas will construct a new brackish water reverse osmosis plant designed to produce a minimum of 3 million gpd of drinking water. The water plant is scheduled to commence the delivery of fresh water in the first quarter of 2027. This new water plant will serve the residents of the rapidly growing communities of Kleberg and Nueces counties.

Pictured from left to right are McElroy Vice President and Chief Technology Officer Jim Johnston, Oklahoma Labor Commissioner Leslie Osborn, McElroy Environmental Health and Safety Manager Tony Little, and OSHA Consultation Division Director Jason Hudson.

McElroy receives OSHA recognition for commitment to workplace safety

Tulsa, Oklahoma-based McElroy was recognized again for its commitment to workplace safety and its participation in the Occupational Safety and Health Administration Safety and Health Achievement Recognition Program. Oklahoma Labor Commissioner Leslie Osborn presented the company with a proclamation commending leadership and employees at two McElroy campuses located in Tulsa. Osborn and OSHA Consultation Director Jason Hudson also presented company leadership with a flag commemorating McElroy's SHARP-certified status.

Gary and Rose Poborsky pose with new GapVax company president Gap Barbin.

Gap Barbin appointed president of GapVax

Gap Barbin was named the president of Johnstown, Pennsylvania-based GapVax, succeeding company founder Gary A. Poborsky, who will continue as CEO. Barbin, the grandson of Poborsky, earned his Bachelor of Science in industrial engineering from Texas A&M University and worked for Boeing and Mack/Volvo during college. Barbin began his professional career as a hydroexcavation operator in Texas. He returned to Johnstown and put his knowledge to use in various departments at GapVax. Whether it was sales, project engineering or production, each new role prepared him to lead the company and serve its customers.

Tsurumi Pump celebrates 100 years

Tsurumi Pump, founded in Osaka, Japan, in 1924, is celebrating its 100th anniversary. The company has focused on technical excellence since its inception as an equipment manufacturer, gaining recognition across Asia and expanding to the U.S. and Europe.

Rafael Marcao

VMAC names Rafael Marcao as director of enterprise excellence

VMAC welcomed Rafael Marcao as director of enterprise excellence. Marcao brings significant lean manufacturing and continuous improvement experience to VMAC and has earned a Lean Six Sigma Black Belt from Caterpillar in Brazil. Marcao holds a technologist degree in industrial automation, a post-graduate degree in lean manufacturing engineering (6 Sigma), and an executive MBA. With diverse experience in automation, manufacturing, and quality engineering, Marcao is well-suited to lead VMAC's further development of lean as an overall organizational strategy focused on delivering increased value to VMAC's customers. ✦

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