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ON THE COVER: Chief Planning Officer Suzanne Coffey and Chief Operating Officer Navid Mehram have helped the Great Lakes Water Authority take a regional approach to wastewater management, benefiting all its member communities. (Photography by Amy Voigt)



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Luke Laggis

A MIGHTY WIND IS BLOWIN'

It should be clearer than ever that infrastructure funding is critical

Last month I wrote in this space about outreach and the importance of promoting the good work you do. If you read it, thank you.

What you didn't read was the column I started writing, about infrastructure funding and the need for a coordinated effort, from the federal government down, to rebuild and rehabilitate critical public infrastructure.

More often than I'd like, I get about three-quarters of a column written and reach a dead end — a kernel of thought that simply won't pop. Sometimes I'll find a way to tie it all together, but often in the process of trying to wring a point from what I'm writing, some other thought will spark in my mind and I'll shoot off in a different direction. Those columns usually come together quick, and they're often better, maybe more true in some ways, because it's one string of thought conveyed as fast as I can type.

Apparently, somehow, it's still not evident that we need more federal funding for water infrastructure.

This month, I had a hard time even getting started. I looked back at the column I scrapped last month. I still didn't know how to hone it properly. And then an idea blew in with the weather.

It blew into Texas, actually.

A winter storm froze much of Texas in late February. It was reported that water service was disrupted to more than a third of the state's residents. Many of those lucky enough to still have service were under boil-water advisories. But that didn't mean they had power to heat or boil anything. Disaster declarations were issued.

Meanwhile in Washington, the House Transportation and Infrastructure Committee's Water Resources and Environment Subcommittee was hearing expert testimony on the need for federal funding of water infrastructure. It's worth noting here that at the time of the Clean Water Act's signing in 1972, about 75% of the cost of clean water was covered by the federal government. That has decreased to less than 5% today.

Apparently, somehow, it's still not evident that we need more federal funding for water infrastructure. But we know we need more testimony.

Everyone in this industry, even those at the very best water and wastewater utilities, understands there's a pressing need for greater funding to upgrade, expand and protect infrastructure. Previous generations made significant investments, but it's gotten to be a hard sell. Lawmakers aren't often celebrated for funding sewer projects. And no one wants to pay a few hundred dollars more in taxes when that money could be going toward a new iPhone.

Roads, bridges, schools, airports, railroads and, yes, water and wastewater systems — these are things we need to function as a modern, healthy society. I don't understand what's political about that.

Want to talk about economic stimulus? How about funding infrastructure projects that sustain economic activity at a base level and allow for growth.

Congress needs to understand that this is far more important than elections or party lines. We've gotten off track. The critical functions of our government have become victim of politics, to the point that funding projects aimed at improving the country, literally from the ground up, isn't popular.

If our elected officials need to hear more testimony about the need for infrastructure funding, let them hear it. Make your voices heard. Loud and clear.

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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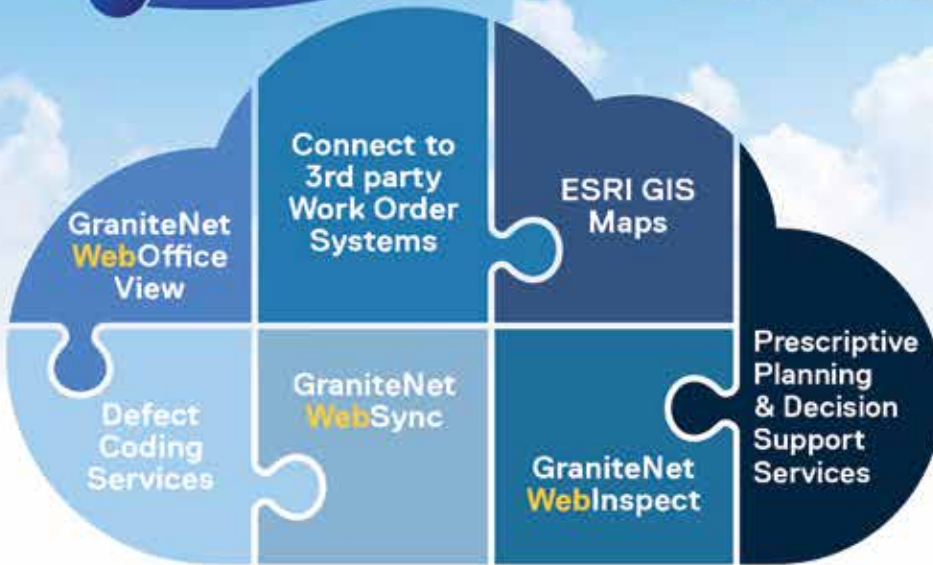
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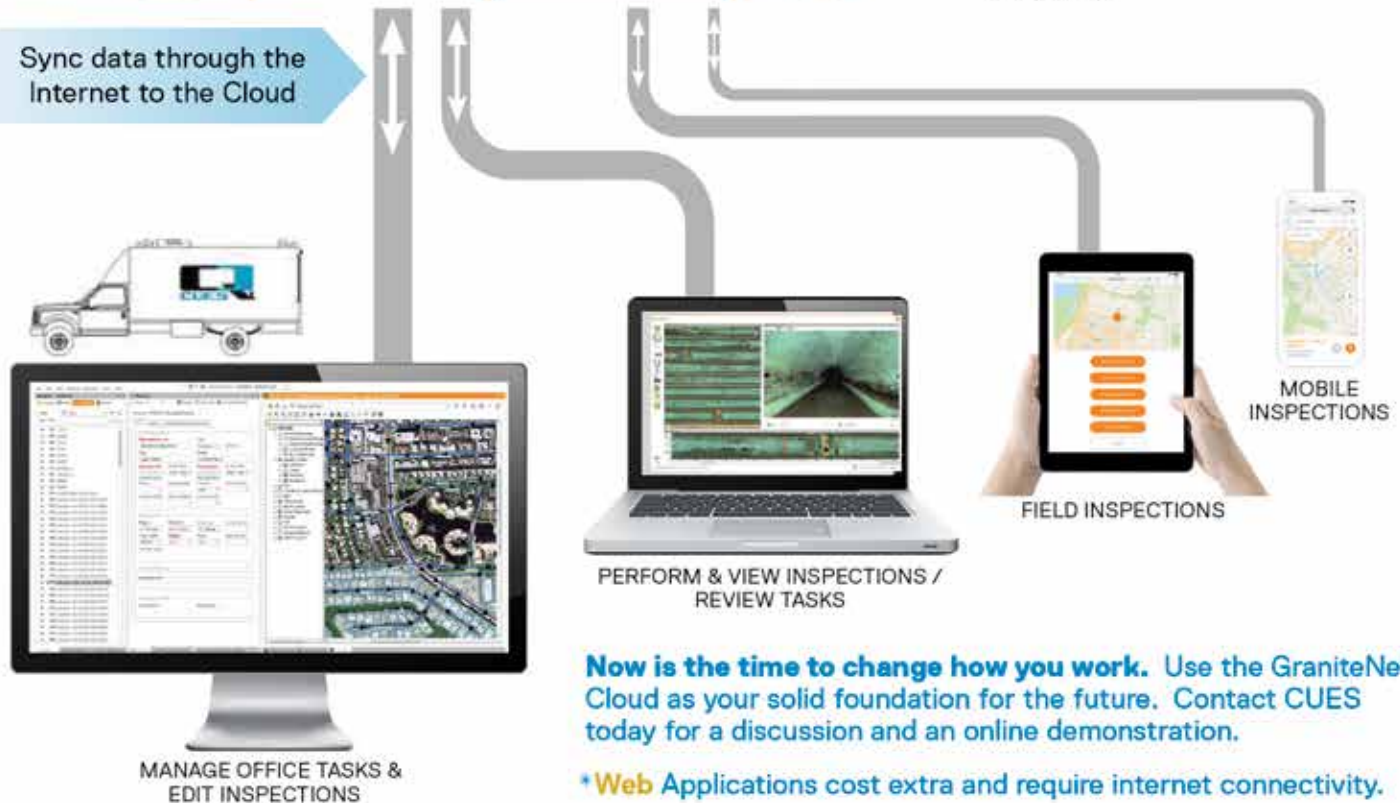
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LEAKING PIPES

Drones as Inspection Tools

With leaking and burst water pipes costing water authorities and consumers time and money, researchers at the University of Newcastle in the United Kingdom are developing drone technology to help predict which areas, and even which specific pipes, are at risk of water loss through corrosion.

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OVERHEARD ONLINE

“Many people may think of sea level rise as a future problem, but in fact, we are already seeing the effects today.”

— *Sea Level Rise Drives Wastewater Leakage to Coastal Waters*
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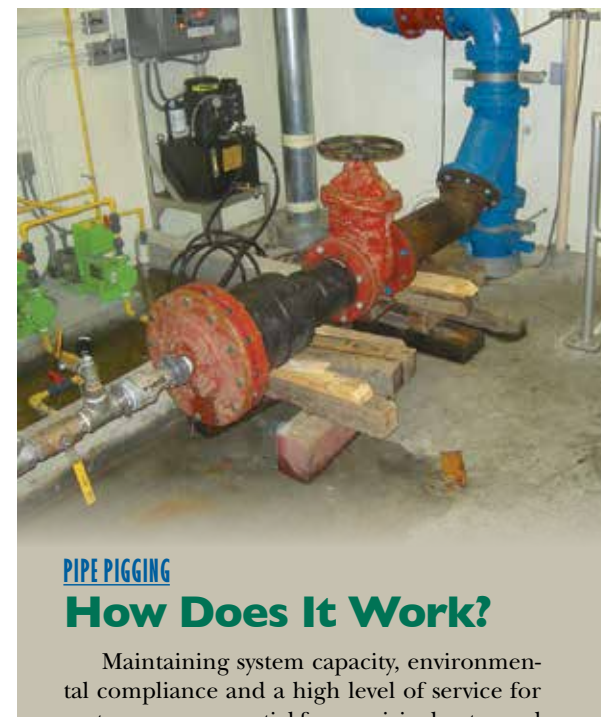


SOLVING OVERFLOWS

An Integrated Approach

Inflow and infiltration were a very significant problem for The Metropolitan District of Hartford, Connecticut, and the communities it serves. But the district has initiated an integrated approach called the Clean Water Project that aims to alleviate overflows in its eight member communities.

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PIPE PIGGING

How Does It Work?

Maintaining system capacity, environmental compliance and a high level of service for customers are essential for municipal water and wastewater system operators. Progressive poly pigging can efficiently clean municipal wastewater force mains. A few basic techniques will help you determine if this is an option in your system. mswmag.com/featured

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A BIG-PICTURE APPROACH

Detroit-area utility's wastewater master plan extends well beyond its boundaries

By Ken Wysocky

When the Great Lakes Water Authority began developing its 40-year wastewater master plan, a simple reality informed the task: The utility's 195 miles of sewer lines and an additional 15,000 miles of lines that feed into them from surrounding southeastern Michigan communities are not contained by municipal boundaries.

"The pipes don't know where one community ends and another one begins," says Suzanne Coffey, the utility's chief planning officer. "All of our region's wastewater infrastructure and assets are connected.

"The master plan effectively removes those boundaries," she continues, noting that more than 100 stakeholders — including representatives from 79 communities with sewer lines connected to the utility's system — collaborated on the plan. The 377-page document essentially provides a 40-year road map for the future of the region's sprawling wastewater collections and treatment system.

"We focused on the concept that this is one large system and looked for the best ways to optimize it. We can achieve more when we function as a region, not individual agencies.

"When you take away those geographic limits, it allows new ideas to bubble up."

To develop the plan, stakeholders attended more than 100 meetings during the past four years. Believed to be the only one of its kind nationwide, the plan's goals center on improving water quality as well as prioritizing low-cost, high-impact

projects that leverage existing infrastructure while providing the greatest environmental benefits.

"I think the region was really hungry for this kind of collaboration," Coffey says. "I believe a lot of (neighboring wastewater) operators could see opportunities to do things differently and better, but until we all came together, there was no ability to understand what happens to their flow after it leaves their cities.

"Now we've educated our member partners about the layout of the regional system and provided an operational dashboard. So when they think about their community and how it's operating, they can access this dashboard and understand what's happening upstream and downstream and make better decisions.

"In a manner of speaking, we've turned on the lights so everyone can see what's going on. It's similar to using GPS to avoid traffic jams — operators can see where wastewater traffic jams are occurring and deliver flow to treatment facilities more efficiently."

"When you take away those geographic limits, it allows new ideas to bubble up."

Suzanne Coffey

Sprawling system

The Great Lakes Water Authority's collections and treatment systems cover 944 square miles in three counties in southeastern Michigan and serve approximately 2.8 million people in 79 communities and municipalities, including the city of Detroit.



The thousands of miles of sanitary sewer lines funnel through 86 separate municipal systems before reaching the utility's Water Resource Recovery Facility, the largest single-site treatment facility in North America. The facility treats an average of 630 mgd but can handle up to 1.7 bgd.

That treatment capacity is supplemented by nine combined-sewer overflow treatment facilities that can treat up to 17 bgd. The system also includes 1,545 manholes, nine pump stations and a biosolids facility that turns approximately 600 million gallons of biosolids into environmentally friendly fertilizer annually instead of incinerating or landfilling it.



“It’s a massive network and we have to ensure that conveyance is reliable every day.”

Navid Mehram

Great Lakes Water Authority maintenance technician Hawun Howard services and greases the forebay gates at the Connor Creek Pump Station in Detroit, Michigan. (Photography by Amy Voigt)

Managing such a massive system poses many challenges, says Navid Mehram, chief operating officer for wastewater operating services.

“In some situations, flows are so low that we have to manage the volume of water coming in and make sure the infrastructure can convey it at such a low velocity,” Mehram explains. “In other cases, we’ve built massive infrastructure that allows us to capture heavy flows we receive from larger tributary areas.

“So we try to manage our collections system in a way that we can capture that differentiation in flow.”

Low flow velocity also increases sedimentation, which creates problems if heavy rains occur. That creates what Mehram calls a major “slug load” — a high volume of solids — at the WRRF.

“We can go from an average loading of 300 dry tons per day of solids to 1,200 dry tons per day during a rain event,” he says.

Improving water quality

Implementation of the master plan will occur in three phases: Optimizing existing infrastructure; adapting to take advantage of opportunities as they arise and expanding pipes and



PROFILE:

Great Lakes Water Authority, Detroit, Michigan

SERVICE AREA:

944 square miles in three counties

WASTEWATER INFRASTRUCTURE:

Approximately 195 miles of wastewater sewers, 9 lift stations, 1,545 manholes

WATER INFRASTRUCTURE:

About 816 miles of water mains

DAILY WASTEWATER TREATMENT CAPACITY:

About 1.7 bgd

DAILY WATER TREATMENT CAPACITY:

1.7 bgd

EMPLOYEES:

Approximately 1,100

WEBSITE:

www.glwater.org



Maintenance technicians Marcus Jackson (left) and Hawun Howard (center) service pump station gate operators with team lead Lorraine Lewis.

wet-weather facilities to further improve water quality; and then sustaining the improved performance through continued maintenance. Many key phase-one initiatives already are underway.

Moreover, the master plan is not just a road map for regulatory compliance. Instead, it also focuses on improving water quality.

“We want to see real tangible improvement of the quality of water in rivers,” Coffey says. “We’ve already invested more than a billion dollars in the last 25 to 30 years in combined-sewer overflow controls, including wet-weather control facilities that treat and discharge any overflow.”

In addition, the utility has established a water-quality monitoring program in which local streams and rivers get tested regularly, not just during sewer overflows. The testing will be performed with both “grab samples” and by continuous in-stream sampling.

The agency uses Suna nutrient sensors made by Sea-Bird Scientific, and NuLab nutrient sensors developed by Green Eyes.

“So over time, we’ll be able to spot trends and make operational improvements that will keep improving water quality,” Coffey says.

“This process has given birth to a whole new family of ideas.”

Suzanne Coffey

Optimizing assets

The plan, which will be updated every five years, also focuses on optimizing existing infrastructure in order to minimize significant investments in new capital improvements. Coffey says that will help ease one of the biggest barriers to implementing most master plans: funding.

“For us, affordability is always at the forefront. We’d love to obtain more state and federal dollars, but the best thing we can do now is plan well and optimize what we’ve already invested in, which will reduce the need to build new facilities.”

For a good example of optimizing existing assets, consider the connectors, or regulators, that link smaller upstream concrete sewer lines to the Detroit River interceptor, which lies 20 to 50 feet deep and ranges from 9 to 12 feet in diameter. It collects flow from shallower sewers.

Currently those approximately 30 connections narrow where they meet the larger interceptor line, which restricts wastewater flow. But engineers are working on retrofitting those connections to make them larger, which would significantly increase flow to the WRRF and reduce untreated sewer overflows.

In fact, for a relatively small amount of money — about \$15 million — compared to a more significant repair option, the utility plans to enlarge these connections so they match the diameter of

(continued)

FERTILIZING THE BOTTOM LINE

Saving millions of dollars in annual sludge-disposal costs while making operations more environmentally friendly might seem like a high bar to clear for a wastewater utility, but a \$143 million biosolids-drying facility built in 2016 is doing just that for the Detroit-based Great Lakes Water Authority.

The Biosolids Dryer Facility takes biosolids collected at the utility’s giant wastewater treatment plant, called the Water Resource Recovery Facility, and converts it into fertilizer, says Navid Mehram, the GLWA’s chief operating officer for wastewater operating services.

The facility — the largest of its kind in North America and the second largest in the world — is operated by the New England Fertilizer Co. The company also maintains the facility, as well as sells and distributes the end product as part of a 20-year, \$683 million contract signed in 2013.

“We’re in the wastewater treatment business, not in the biosolids distribution business,” Mehram says. “We focus on our area of expertise and use appropriate contracts to bring in the expertise that’s needed.

“They already have a large distribution network and at the end of the day, we need to move this product out. And they provide us with that reliable distribution channel.”

The facility converts approximately 600 million gallons of biosolids into environmentally friendly fertilizer every year. In simplest terms, the facility dewateres the sludge, then dries it out and processes it into nitrogen- and phosphorus-rich pellets.

“We needed and wanted an environmentally friendly disposal method,” Mehram says, explaining the motivation behind the facility’s origins.

The facility handles about 75% of the solids collected at the treatment center; the rest is incinerated. As a result, GLWA was able to retire six of the system’s oldest incinerators while the remaining eight incinerators have been upgraded to meet new air-quality regulations. Overall, the moves dramatically decreased the facility’s emission levels.

The utility estimates the facility now produces about 56% less carbon-dioxide-equivalent emissions compared to incineration. Drying also reduces other air pollutants, decreasing particulate emissions by 51%, nitrogen oxides by 87% and carbon monoxide by 95%.

The plant has also reduced truck traffic into surrounding neighborhoods by 75% and significantly decreased odors. It’s capable of producing about 420 tons of fertilizer pellets per day, which are used by farmers to fertilize crops or by power plants and cement kilns as an alternative and renewable source of fuel.

According to GLWA statistics, the facility saves about \$14.6 million per year in operational and maintenance costs; that comes out to \$292 million saved in operational and maintenance costs during the 20-year life of the NEFCO contract. Moreover, the payback period on the \$143 million initial capital cost was just under 10 years.

“It’s a very cost-effective way for us to dispose of sludge,” Mehram says.

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Great Lakes Water Authority team members (from left) Ian Sizemore, Marcus Jackson, Lorraine Lewis and Hawun Howard at the Connor Creek Pump Station.

Technology-centric operation

The GLWA staff also uses sophisticated software programs to manage its numerous assets. Good examples are Work and Asset Management (WAM) software developed by Oracle, Microsoft Suite products like Power BI (Business Intelligence) and ArcGIS mapping and special analytics software from Esri.

WAM is used to track work orders and as a communication tool between management and front-line workers. “We aggressively use WAM on our vertical assets (pump stations and water resource recovery systems), while Power BI brings that data into a dashboard that allows us to clearly communicate needs to our leadership team,” Mehram says.

Employees use handheld data-collection devices manufactured by Spectra Precision/Trimble Geospatial to collect information for the ArcGIS system, which provides a good overview of where assets are located and their condition, all in graphical form.

Coffey notes that through development of the master plan, GLWA officials have learned that there’s strength in numbers.

“We can do more when we come together and remove boundaries from the equation,” she says. “Think about all the brain power from all the stakeholders that participated. This process has given birth to a whole new family of ideas.

“We’re well-connected with national associations across the industry, and we’ve never seen a master plan quite like this. Developing this plan involved an unprecedented amount of collaboration.

“We knew we achieved something special when one of our member partners proposed redirecting their own capital dollars to a project downstream from their municipal boundary, realizing that it was a better project for improving water quality. I would encourage water utility managers to consider how they could implement a regional approach in their areas. It has brought GLWA cost-effective solutions that otherwise would not have been possible.” ♦



Chief Planning Officer Suzanne Coffey and Chief Operating Officer Navid Mehram lead the Great Lakes Water Authority team.

the upstream sewer lines. That would reduce combined-sewer overflows by roughly 160 million gallons, Coffey says.

“That would eliminate approximately 10% of our untreated overflows from discharging into the Detroit River. It’s a project that provides the best bang for our buck.”

Two regulators have been expanded so far and the GLWA is monitoring their performance to see what kind of difference it makes.

Mindful maintenance

But the biggest operational challenge is sewer maintenance. “It’s a massive network and we have to ensure that conveyance is reliable every day,” Mehram says.

Generally speaking, a team of employees is responsible for inspecting and performing preventive maintenance in what Mehram calls the gravity system — the 195 miles of sewer pipes — as well as the system’s nine pump stations. Employees rely

on a camera truck outfitted with inspection cameras built by Telespector Corp. and R.S. Technical Services, with WinCan VX sewer-inspection software.

The GLWA usually hires contractors to repair and/or upgrade its assets, he says.

GLWA recently completed a three-year effort to inspect all of its sewer lines. A key finding: A 12.5-mile-long, 9- to 16-foot-diameter section of the Detroit River interceptor was a high-priority candidate for repairs.

Contractors have been rehabbing the interceptor for about 2 1/2 years. Most of the work, expected to be completed in another year, centers on repairing or regrouting the largely brick structure, along with improvements for enhanced flow control and maintenance.

“It’s one of the bigger sewer rehab projects we’ve taken on,” Mehram says of the \$48 million effort. “It’s also one of the most critical sewers marked for rehab.”

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STREET-SMART SOLUTION

Innovative roads in Atlanta neighborhoods pave the way for better stormwater control

By Ken Wysocky

To decrease flooding and sewer overflows in three southeastern neighborhoods in Atlanta, officials in the city's Department of Watershed Management opted for a less conventional, but green, solution: Permeable pavement made from interlocking concrete pavers.

By retrofitting more than 4 miles of paved streets with permeable pavers instead of concrete or asphalt, the DWM dramatically reduced flooding from stormwater runoff and overflows from combined sewers during heavy rainstorms, says Mikita Browning, the agency's commissioner.

"To our knowledge, it's the largest use of permeable pavement to retrofit existing roads," Browning says of the \$15.8 million project.

Roughly 570,000 square feet of Aqualine permeable pavers, made by Belgard Commercial Hardscapes, were installed in the Summerhill, Peopletown and Mechanicsville neighborhoods. These neighborhoods are located near Center Parc Credit Union Stadium (formerly known as Turner Field).

Work started in January 2015 and finished in September 2016, Browning says. (The color of the bricks, appropriately enough, is called Georgia blend.)

"Our engineering analysis has shown that the permeable pavers provide additional capacity overall within our combined sewer system," she explains. "They definitely have reduced the flooding from heavy rains, so we think they've been very beneficial in remedying the flooding."

In addition, the permeable-pavement solution was substantially less expensive and much less disruptive than tearing up streets and separating the combined sewer systems. About 10% of Atlanta's sewers remain combined, Browning says.



"They definitely have reduced the flooding from heavy rains."

Mikita Browning

PRODUCT:
Interlocking Aqualine permeable pavers
MANUFACTURER:
Belgard Commercial Hardscapes
844-495-8210
www.belgardcommercial.com

APPLICATION:
Permeable pavement for roads, better control of stormwater runoff

BENEFITS:
Less stormwater runoff flows into sewers; naturally filters stormwater runoff; typically cheaper than building traditional roads; less disruptive than conventional road-building techniques; interlocking L-shaped bricks maximize strength and better withstand heavy vehicular traffic.

USER:
City of Atlanta

Flow-through filtering

Permeable pavers use built-in spacers that create slightly wider-than-normal joints between pavers. Those joints are filled with small aggregate through which stormwater flows. The stormwater then passes through layers of crushed stone below the pavers. These layers act as a natural filtration system to remove pollutants such as oil.

In the Atlanta project, the average depth of the crushed-stone layers was 44 inches.

The system also relies on a geomembrane that lies under the layers of aggregate, providing yet another layer to trap pollutants. The bottom line: Runoff that normally flows directly to curbs and into sewers instead slowly seeps in between the pavers, where it's contained and filtered naturally, reducing entry into sewer systems.

Installation required four basic steps: Asphalt removal, excavation to a specific depth, filling the excavation with aggregate and laying the pavers, which was done by a machine in 12-square-foot sections. The L-shaped bricks allowed for optimal interlocking to withstand the weight of vehicular traffic.

In addition, an impermeable liner was installed on the sides of the excavation. Impermeable-liner check dams also were installed to break up the subsurface flows below the pavers on streets that had a significant slope, she says.

"The contractor was able to install about 5,000 square feet of pavers per day," Browning says. "Installation went pretty quickly."

Installation, however, was not free of complications. Project contractors encountered issues with subsurface utility lines and service connections while preparing the subgrade for installation, which contributed significantly to the time it took to finish the project.

The Atlanta Department of Watershed Management dramatically reduced stormwater issues in three neighborhoods after installing approximately 570,000 square feet of Aqualine permeable pavers from Belgard Commercial Hardscapes.



The project also included installation of 32 stormwater planters, plus a 6-million-gallon concrete vault in the Center Parc Credit Union Stadium, all of which work in concert with the pavers to reduce flooding. The vault stores peak flows during heavy rains, then slowly releases it back into the combined sewer system.

Floods spurred action

The permeable-pavement project was spurred by severe flooding in 2012 that sent storm runoff and raw sewage into the yards and homes of many residents in the three neighborhoods. That prompted city officials — already contending with consent decrees from the Environmental Protection Agency that mandated reductions in sewer overflows — to look at stormwater runoff mitigation strategies.

After performing topography and hydraulic studies and analysis, officials began considering their options. They opted for a more sustainable and holistic — and less expensive — approach.

So far, DWM officials are pleased with the results. “They’ve worked great,” Browning says. “But a maintenance program is key. Pavers are no different than roads. You have to be sure you establish a preventive-maintenance schedule.”

When asked what advice she would give other municipalities considering the use of permeable pavement, Browning says it’s “imperative” for agencies to collaborate and locate subsurface utility lines. “That helps ease the construction process,” she says.

Browning also recommends installing permeable pavers upstream from the flooding areas.

More pavers possible

Browning says strategic use of permeable pavement in other areas of Atlanta is a possibility. “We still have quite a bit of work to do as it relates to the consent-decree program.”

The key takeaway, Browning says, is that utilities shouldn’t be afraid to consider less traditional and more environmentally friendly techniques for controlling stormwater runoff.

“I would say every city is different, but here in Atlanta, we try to think outside of the box and be innovative by using sustainable solutions to address environmental issues,” she notes. “You need to keep in mind that everything is site specific ... as well as understand clearly the nature of the issue, then look at a menu of solutions.”

“Pavers are no different than roads. You have to be sure you establish a preventive-maintenance schedule.”

Mikita Browning

“Here in Atlanta, we try to balance ‘gray’ solutions with ‘green’ solutions,” she continues. “Sometimes a gray structural approach is more beneficial and sometimes a green approach is more beneficial. We try to strike a balance between those two practices.” ♦

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TAKING CONTROL

Operations manager draws on broad background and past success to overhaul Illinois utility

By Ted J. Rulseh

A city leader looking at a resume from Paul Burris might easily have said: No, too many jobs in too short a time.

Leaders in the Illinois city of Elmhurst saw something else: Solid and diverse experience and a record of accomplishment. They hired Burris in April 2016 as utility operations manager, and they certainly have not been sorry.

Burris has led an aggressive attack on I&I in the city's collections system, a comprehensive upgrade of the wastewater treatment plant, and the installation of automated metering infrastructure and leak detection on the drinking water side. The city's confidence in Burris was confirmed

“Paul has really turned around both the wastewater operations and the utility division.”

Howard Kilian

when he was named 2018 Professional Manager of the Year in water resources by American Public Works Association.

Burris credits his success to a broad background on the municipal and private sector sides of the water and wastewater industry, to mentors who guided him on the way, and to co-workers in the communities and companies he has served.

“It’s not about me,” Burris says. “Others surrounding me have made me better, helping me see things I’d never seen before, showing me how to look at things differently.”

Starting early

In Elmhurst (population 45,000), a western suburb of Chicago, Burris is responsible for wastewater, drinking water and stormwater. The various job changes he had made didn’t bother Howard Kilian, then public works director (now retired).

Elmhurst (Illinois) Utility Operations Manager Paul Burris has led an aggressive attack on I&I in the city’s collections system, along with upgrades of the wastewater treatment plant and the installation of automated metering infrastructure. (Photography by Kimberly Felten)

Paul Burris (left) and Assistant Superintendent Tom Tapella meet next to three new raw influent screw pumps from Evoqua.



“I looked at his overall experience and the things he had done,” Kilian says. “We were looking for someone who could come in, take control of the operation and run with it.”

“Paul has really turned around both the wastewater operations and the utility division. He has brought a lot of professionalism into the group, really pushing for everybody to get to a certain level of licensing for the positions they’re in.”

“He has a go-getter, complete-a-project attitude. I gave him a water meter replacement project that we had been looking at for years. He took control and before we knew it, that project was done and operational. He is cutting-edge when it comes to technology.”

It could be said that Burris started his water career at a bowling alley in New Lenox, Illinois, a village of 26,000 half an hour southwest of Chicago. “I was 16 years old, and I was on a bowling team with the mayor’s son,” he recalls. “We talked about summer jobs.”

He landed a summer position with the street department, doing maintenance and mowing grass. That was in 1981. In later high school years, he worked in the water department and for a time at the wastewater treatment plant. After high school, indulging an interest in math and computing, he joined a securities firm. A few years later, preferring to work outdoors, he went back to New Lenox as a laborer in the wastewater plant.

A mentor for life

In 1987, Burris was derailed by a car accident that left him with a severe concussion and shattered right hand, along with back, shoulder and knee injuries. While his body healed, his boss Mike Turley, wastewater treatment plant superintendent, helped rebuild his confidence.

“Mike pretty much changed my life,” Burris recalls. “For a time I thought I wasn’t going to amount to much. As I worked to put myself back together, he was always there. He basically made

it a challenge for me. We became real good friends. He was my mentor. He let me learn from my mistakes, which was probably the biggest thing.”

“When I was struggling with a certain task or a certain problem, he would never give me the answer. He would make me figure it out. It was always about learning, getting better, learning how to get others better. One thing he taught me was that this is not a job, it’s really a career.”

“We used to challenge each other. He went for his bachelor’s degree; I went for mine. I went for my water license; he went for his. He was teaching at Joliet Junior College; I started teaching for the Environmental Resource Training Center at Southern Illinois University in Edwardsville. We pushed each other to go to the next step.”

While in New Lenox, Burris and Turley, along with co-worker Brian Williams, formed an operations company that helped small communities and private entities like mobile home parks operate their water and wastewater systems.

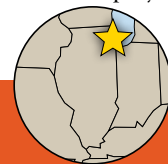
Onward, upward

In 2001, Burris was recruited by the Aqua America utility services company, where he was in charge of a surface water treatment plant in Kankakee, Illinois. There he learned that skills from a municipal setting do not necessarily translate directly to the private sector. That was the first in a series of job changes over the next decade and a half. In 2005 he joined American Water as contract operations manager for the West Region.

“One thing he taught me was that this is not a job, it’s really a career.”

Paul Burris

“That was the first time I got to experience dealing with elected officials, higher-level regulators and decision-makers,” he recalls. “It was exciting to do that. They had one of the best employee training programs I’ve ever seen. If you needed classes,



PROFILE:

Paul Burris,
City of Elmhurst, Illinois

POSITION:

Utility operations manager

EXPERIENCE:

30 years in the industry

EDUCATION:

Bachelor’s in business management, and master’s in public administration, both from Governors State University, University Park, Illinois

CERTIFICATIONS:

Multiple water and wastewater certifications in Illinois, Michigan, Indiana, New Jersey and Arizona



Burris, the American Public Works Association's 2018 Professional Manager of the Year, points out a possible non-surfacing water main leak on ZoneScan.

DEALING WITH THE UNKNOWN

Utilities face enough challenges without having to deal with a pandemic. "COVID-19 has thrown curveballs like we've never seen before," says Paul Burris, utility operations manager for the city of Elmhurst.

"My department normally works out of the Public Works building; we don't anymore," Burris said last June. "We work out of a fire station training tower and the York Township civic center. We broke our teams up into separate places to work, with separate trucks to drive and separate equipment to use. It's to eliminate the cross-contamination from one team member getting sick and passing it on to everybody else.

"I'm really happy to see how seriously our council and city manager are taking this. It concerns me a lot. What happens if we lose our Utilities Division? You can't go find an operator the next day to run an 8 mgd wastewater treatment plant they've never been in.

"We can hire contactors to fix water mains and things like that, but we've already had contractors come down with COVID-19 on their crews, and they're not available. So it's a challenging time, where good backup plans aren't always good backup plans anymore."

In one major change, the wastewater treatment plant team members who all used to work on the same daytime shift are now divided into three shifts, again to create more separation: "It has really played havoc on their lives. We have to do everything we can to support them, to make it as easy as possible for them, yet still retain that separation."

The loss of funds is another concern. Stay-at-home orders and business closures mean tax and user fee revenues are down. "We saw the water usage at some businesses near zero because they weren't open," Burris says. "We see more usage at home, but not nearly what we saw from businesses. So water revenues are down, and wastewater revenues are down.

"How do you manage in these times? Maybe you don't do the I&I program or the water main replacements. On the street side, maybe you don't do the paving program. How do we make things function in the future? Right now, I don't think anybody knows."

"Teaching someone to memorize a question and answer is not a way to teach future water and wastewater operators."

Paul Burris

special training, whatever it was, they provided it. I had two supervisors there, Rob Kuta and Troy Day. When I had questions, they were there."

A year later he moved on to Utilities Inc., overseeing facility operations in Illinois, Indiana, Arizona and Nevada. After four years he was responsible for facilities in four other states and traveled about 300 days per year. When his mother fell ill, he returned to Illinois as chief operator of the largest wastewater treatment facility in DuPage County. He's indebted to Roy Kressman and Joel Simintel, principal operators, for helping him deal with his personal issues while maintaining work performance.

Three and a half years later his mom had recovered, "So it was time for me to spread my wings again," he says. The next stop was as area manager with United Water in Michigan, in charge of nine facilities.

"My supervisor, Gary Timmer, put together an unbelievable team. We got things done. We started programs to train our employees to better understand the processes and our clients. Gary's support and leadership shaped my management skills in areas where I was lacking."

When his stepdad fell ill in 2014, Burris moved back to Illinois again, this time as director for water and wastewater in Crest Hill. There he applied his experience to create his first utility master plan for the water system. Among many accomplishments, he and team member (and

eventual successor) Mark Siefert developed a process to flush some 1,000 hydrants in four weeks — a process with which the city crew had previously struggled.

On to Elmhurst

There was a reason for each step in the journey, and the same was true of the move to Elmhurst in 2016. "We purchase our water from DuPage Water Commission," Burris says. "We use about 4 mgd. We have 15 million gallons of storage and about 183 miles of water mains to maintain. On the wastewater side we have an activated sludge wastewater treatment plant that can treat up to about 20 mgd. Then we have an excess flow facility where we can make modifications in the plant to treat another 40 mgd." The average flow is 8 mgd.

Key members of the Elmhurst team include Cori Tiberi, assistant public works director; Kent Johnson, city engineer; Dan Rosenwinkel, utility superintendent for water production and treatment; and Chris Dufort, utility superintendent for water distribution and collection.

Elmhurst's combined wastewater collections system was separated in the 1980s, but some drain tiles, sump pumps and other sources remain connected. "So we still get high flows when it rains," Burris says. "We're now on a program of televising, relining and manhole repairs. We're investing money every year to keep the flows as low as we can."

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Another challenge was unaccounted-for water. The city's water meters were more than 25 years old, and most needed to be changed out. In 10 months the city replaced 15,000 meters, choosing Neptune Technology Group units for residential customers and Master Meter units for the commercial side. The city also deployed automated metering infrastructure from Aclara.

A customer portal with WaterSmart software enables homeowners to monitor their water use online and receive notification of leaks.

While a team worked on a water meter exchange and AMI plan, they discovered ZoneScan acoustical water-leak detection technology (Gutermann, an Aclara affiliated manufacturer). "The city used to hire a contractor on an annual or biennial basis to listen to all 183 miles of pipe," Burris says. "If a break happened the next day, we might not find it for one or two years, or until it surfaced."

ZoneScan was an overseas technology that no utility in the United States had implemented at similar scale or on an AMI. The city installed 609 units on the distribution system. "Now every night at 2 a.m. it listens for water main breaks," Burris says. "As the sounds get louder, it sends the data back into a program that we look at every morning, and it codes them on their severity from zero to 100."

The meter exchange and the ZoneScan technology helped the city reduce unaccounted-for water from nearly 20% to approximately 5%. Payback on the system was one year. The project helped the city earn a 2020 Utility Saver Award from the AWWA Illinois Section, a 2019 Innovation of the Year from the DuPage Mayors and Managers Conference, and an Innovation Award from the APWA Chicago chapter.

Being a teacher

Burris describes his management style as hands-off with teaching as needed. "I sometimes get staff upset when I do not directly answer a question. I ask them for their recommendation; that requires them to think about the problem and then offer solutions.



Burris checks over the new electrical control building's MCC units prior to energizing the building.

"As a teacher I always say there are no dumb questions. If you don't know, then likely someone else doesn't know. So ask anything you are unclear on. Many of my students learn how water systems work, not how to pass a test. Teaching someone to memorize a question and answer is not a way to teach future water and wastewater operators."

Looking back, Burris recalls a concept he learned from mentor Mike Turley: "He taught me that this is a hobby. Work became a hobby because I liked doing it. Mike instilled that in me, and I've tried to instill that in others." ♦

We invite readers to offer ideas for this regular column, designed to help municipal and utility managers deal with day-to-day people issues like motivation, team building, recognition and interpersonal relationships. Feel free to share your secrets for building and maintaining a cohesive, productive team. Or ask a question about a specific issue on which you would like advice. Call editor Luke Laggis at 800-257-7222, or email editor@mswmag.com.

RATCHETING DOWN THE RHETORIC

Employees can talk about politics without poisoning the workplace culture

By Ken Wysocky

A survey conducted last year by The Harris Poll for job-search platform Glassdoor showed that 60% of 1,200 respondents felt it was unacceptable to talk about politics at work. Yet almost as many said they nonetheless still do so, and 60% said they fear it could hinder their careers.

Furthermore, 21% of those surveyed said they wouldn't want to work with a co-worker who supported a presidential candidate they didn't like.

These findings underscore what many of us already know from experience: Politics has rarely been so polarizing and volatile, not to mention ever-present, in the workplace. It also shows that many people apparently aren't heeding Mark Twain's old suggestion to never talk about money, politics and religion in polite company.

But here's the thing — talking about politics isn't necessarily a bad thing, provided that participants follow certain guidelines centered on respect. And while it's understandable why some organizations might even ban employees from talking about politics at work, such policies might indicate a problem with their workplace cultures, says Brittney Maxfield, senior director of marketing communications at VitalSmarts (www.vitalismarts.com).

"Politics is a big issue everywhere these days," Maxfield says. "And people have divided feelings about what to do about it.

"Some think you shouldn't speak about it at all — make it a taboo topic," she continues. "Others want more dialogue and think organizations shouldn't inhibit free speech. There doesn't seem to be much consensus about any of it.

"But if you do have a policy against talking about politics, I think it says you're not willing to have crucial conversations," she adds. "And that attitude can carry over into your corporate culture and result in less connection with colleagues."

"People should talk about these things. Talking is how we get to unity on issues."

Brittney Maxfield

plaints about former President Donald J. Trump for four years might now feel it's unfair that they aren't allowed to complain about President Joe Biden, she cautions.

"On moral ground, we should be able to talk about these things at work," Maxfield says. "But managers also need to be aware that it's a volatile topic that can affect your team. That's why talking it through as a team is so important.

"If we open the door and talk about how we can approach this as a team, I think employees would be eager to come together as a team and find a way forward."

Respect is essential

Maxfield also says managers should emphasize that if political talk is allowed, dialogue should be respectful.

"People should talk about these things. Talking is how we get to unity on issues. But that's where it gets difficult for managers ... they need to keep their ears to the ground and if people are being disrespectful it has to end. It can get tricky."

When and where employees talk politics matters, too. For instance, it's not healthy to have an employee start out a meeting with a political rant that upsets some team members. In a case like that, Maxfield says it's important for a manager to later ask that employee to please share their views at a more appropriate time.

"Respect should always be the foundation and as a manager, you need to hold your team to a certain standard," she says. Furthermore, managers should emphasize they're not trying to silence political viewpoints, just keep them from negatively affecting work.

"And you should do this kindly and privately, not in front of the whole team."

Crucial conversations

Moreover, pointing out the actual consequences of a political outburst — such as hurting productivity or creating resentment among team members — is an effective way to motivate people to stop disrespectful political comments, Maxfield explains.

"That will do more to change their behavior than just telling them not to do it again. Furthermore, it gets them involved with the solution."

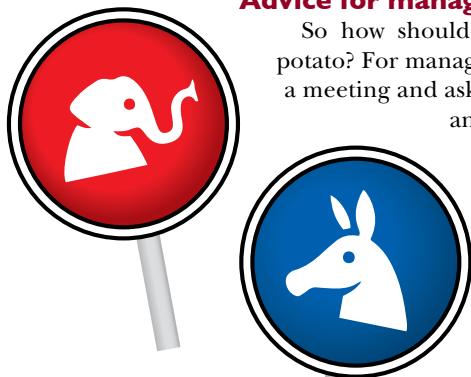
Managers also need to be aware of political insults and inflammatory rhetoric employees post on social media, which some employees may view equally disrespectful as something said face to face. "Workplaces need to keep an eye on that and be careful that it doesn't bleed into the workplace."

If an employee complains about another employee who's outspoken about their political views, Maxfield suggests telling them they should have

Advice for managers

So how should organizations handle this hot potato? For managers, Maxfield suggests they hold a meeting and ask team members what they think and feel about talking politics.

"Maybe they'll agree that everyone just needs a break from the election cycle, but not anything permanent," she notes. But be aware that, like so many other things, timing is everything. For example, conservatives who heard com-



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a “crucial conversation” about the matter with the outspoken employee.

“Put it back on your team members,” she recommends. “Tell them they might want to let that person know how their comments came across. Crucial conversations help to make relationships stronger.”

Outspoken colleagues

As for handling colleagues who aren’t shy about expressing political beliefs, Maxfield recommends first doing some personal reflection to make sure you’re being open-minded and tolerant.

“If something rubs you the wrong way, ask yourself why. Is it because the remarks were disrespectful or because you simply don’t agree with them? If the remarks make you uncomfortable, that’s on you.

“It’s not illegal to express an opinion, and you don’t have to agree with it,” she points out. “So instead, be tolerant, engage in dialogue and learn.”

Maxfield also recommends against trying to change colleagues’ minds about their political views. The more you do so, the more likely they’ll resent your attempts, she says.

“So try to just come at it with a sense of genuine curiosity. Tell the person you’d love to hear about why they see things the way they do. But again, respect is paramount.”

Furthermore, while it may sound difficult, it also helps to try and find some common ground on political views.

It’s important to learn how to have difficult conversations in the workplace. But it’s equally as important to have rules regarding those conversations, centered on respect as an organizational value, Maxfield says.

“And if your team comes up with those guidelines and boundaries, it can help make it even safer to have those conversations — to be open and honest with colleagues.” ♦

“It’s not illegal to express an opinion, and you don’t have to agree with it.”

Brittney Maxfield



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SUPPORT FOR BETTER INSPECTION

CUES has built its reputation on decades of innovation and a strong commitment to customer service

By *Kim Peterson*

CUES has been a fixture in the pipeline inspection industry for more than five decades. The company designs and manufactures a wide range of high-quality pipeline inspection and rehabilitation equipment.

While often praised for the longevity and durability of its systems, CUES takes even greater pride in its individualized customer service and support. CUES's team provides equipment training, phone troubleshooting, parts support and extensive repair networks to keep its customers out on the job.

Municipal Sewer & Water recently spoke with Alexander Milley, CUES regional sales manager for the Southeast, and Chris Graybill, CUES customer service manager, about the company's varied equipment, custom offerings and extensive customer support.

MSW: Tell us a little about the history of CUES.

Milley: CUES was founded in 1964, about 10 miles from where our factory operates today. Little-known fact: CUES is an acronym for Community Utility Equipment Supply. Holding true to its original identity and purpose, CUES specializes in CCTV inspection equipment for sewer and stormwater assets — and has since day one. Having said that, the company continues to evolve and grow to meet customer needs and maintain a competitive edge in the marketplace. CUES is — and always has been — an American-made product. A tremendous amount of pride accompanies every unit CUES ships, knowing the company supports a local workforce and the local workforce supports the customer.

CUES has had ups and downs over the years; however, like all great companies, strong leadership and a resilient staff have adapted and overcome many daunting challenges, forging the company people see today. The open and interactive relationship among customers, channel partners and the factory is a hallmark of CUES and will continue to be an integral part of our growth recipe.

MSW: What differentiates your pipeline inspection systems from the competition?

Milley: CUES offers a wide variety of products ranging from simple push cameras to 3D LIDAR imaging systems — and everything in between. The breadth of the offering is the broadest and one of the most advanced in the industry. With this vast offering, CUES strives to offer a solution for all needs in the CCTV inspection market. CUES has some exciting products that we feel are unique based specifically on their technology — most notably the EZ Grout Panel, Micro P&T lateral launch camera, SoLID FX multisensor platform and SPIDER manhole scanner.

In general terms, outside of some of the more advanced products, one thing comes to mind that makes CUES equipment stand out: longevity. It is not uncommon to meet a customer with a 10- to 15-year-old system — sometimes a 20- to 25-year-old system — that still gets used daily. The value the taxpayer or business owner gets out of a

(continued)



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CUES system over that life cycle is immense. What allows this to happen is demanding leadership, a skilled and experienced workforce and a tremendous investment in customer service.

Realizing jobs depend on our equipment's functioning, CUES's investment in customer service — through repair/troubleshooting training, field operation training, telephone support, satellite service centers, channel partners and loaner inventory — has built a foundation to support customer uptime. CUES would not have such a large footprint in the marketplace without this level of dedication.

MSW: Tell us about your inspection systems and what needs they address.

Milley: The scope of work is rather broad. With lateral launch, gas cross-bore inspection, lateral inspections and blockage locates can be addressed. The various SONAR systems can inspect siphons, calculate debris levels and assess pipe wall degradation. The various laser systems can calculate pipe-ovality and joint-separation measurements. The manhole systems can provide measurable data for accurate decision-making and quality assurance.

With products directed at pipe rehabilitation, CUES offers tools for lateral reinstatement, debris/obstruction grinding, joint sealing (for leaks) and point repairs. Finally, for meeting demanding footage goals and assisting with overall inspection cost-reduction, CUES offers the DUC digital side-scanning camera. This is just a sample of the applications CUES products can address.

MSW: You also offer custom inspection vehicles. What's that process like for a customer?

Milley: Yes. In fact, this is another differentiator: CUES starts with an empty unit and fully up-fits the entire interior: walls, floors, cabinetry, etc. When someone buys a CUES truck, it is truly a "CUES truck" — not a mix of third-party workmanship. With this level of involvement, CUES is in a strong position to support the customer after the sale, should any questions arise.

As far as offerings, there are far too many to list. Essentially, as long as the desired equipment and layout fit within the physical dimensions and vehicle weight ratings, almost anything is possible at CUES.

MSW: What recommendations can you offer customers shopping for inspection systems?

Milley: Take your time, speak with current users performing similar work and don't underestimate the value of support. User feedback is invaluable to not only the manufacturer, but also other users in the market. Most brands will work for the first one or two years; it is after three-plus years where the value of a system is justified — or not.



When someone buys a CUES truck, it is truly a "CUES truck" — not a mix of third-party workmanship. The company starts with an empty unit and fully up-fits the entire interior.

MSW: CUES is known for its customer support. What sort of after-sale training and support is available?

Graybill: CUES believes that strong after-sale support is key to productivity by minimizing customer downtime. We provide this by having dedicated training and troubleshooting staff, as well as repair services at a number of facilities across the U.S. and Canada. We also maintain a large inventory of loaner equipment that is available at no charge to customers while their unit is being serviced. Our training staff is available to travel to the customer's site and provide individual training on any of our inspection and rehabilitation systems. We can also provide web-based training on both hardware and software as requested.

MSW: What do your technical training schools offer and what do attendees get out of the programs?

Graybill: Our courses are designed to teach our students how to effectively identify and resolve problems as they occur, minimizing downtime while troubleshooting system faults. The training is comprehensive, covering everything from AC and DC theory, meter operation, voltage and continuity checks to video path and power path diagnosis. Courses for both mainline and lateral troubleshooting are available. The CUES REDI Kit, a collection of troubleshooting aids specifically designed to speed fault location, is also covered. Our students leave with a package of system drawings and troubleshooting guides and, most important, a clear understanding of our systems and the confidence to troubleshoot them effectively.

Quick disclaimer: Due to COVID-19, our classes, schools and shows are of course canceled, on hold or conducted online. Once things are "back to normal," everything will resume.

MSW: How do you see the sewer inspection industry evolving?

Milley: Like most technological industries of today, the inspection industry is rapidly evolving — higher-resolution cameras, wireless technology, new types of scanners and deeper integration of software. As time passes, I believe the industry will see refinement of these, as well as the introduction of new technology.

MSW: What do you want your customers to think of when they hear the name CUES?

Milley: Reliability. Reliability goes beyond products, extending through the workforce: Reliable people creating reliable products with reliable support.

And as a proud employer of many veterans, CUES would like to extend a sincere thank you to all U.S. armed forces, veterans and first responders. ♦



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PROTECTING THE PACP BRAND

Proper licensing is part of proper pipeline assessment software

By Sheila Joy

Comprised of unique and proprietary codes, NASSCO's Pipeline Assessment Certification Program provides a universal language to identify pipeline defects and conditions. Combined with the Manhole and Lateral Assessment Certification programs, NASSCO offers the education and training to ultimately provide data necessary for asset management and the holistic maintenance and rehabilitation of the entire underground system.

While PACP continues to grow in both awareness and practice, it is important to know that the codes developed are — and will remain — the intellectual property of NASSCO. There has been a growing trend recently for industry products, services and software to incorporate PACP codes without NASSCO's knowledge or approval. Whenever PACP is used in software that utilizes the codes or is incorporated into non-NASSCO training programs, it must be licensed by NASSCO.

While most vendors comply, and we are grateful for those who see the value in PACP, some vendors don't bother to obtain licensing of the PACP

codes. If you are asked to purchase a product that promotes NASSCO's PACP codes as part of a solution, please make sure the product or service you are purchasing has been properly and legally licensed through NASSCO.

On the bright side, it is not uncommon for a product name that becomes universally known to be used generically. A great example of this is Kleenex. Because of its popularity, awareness and market share, the word "Kleenex" is often used to describe a tissue when, in fact, it is a unique and protected brand. Another example is Q-Tip, which has become the common term for cotton swabs. So, while PACP becoming a well-known term for a system that properly identifies defects and conditions is not a bad thing, illegal use of it is.

As we work to maintain the integrity of PACP, please notify NASSCO of any improper use of our PACP or other products you may become aware of so that we may continue to set high standards for the assessment, maintenance and rehabilitation of underground infrastructure. ♦

NASSCO (National Association of Sewer Service Companies) is

located at 2470 Longstone Lane, Suite M, Marriottsville, MD 21104; 410-442-7473; www.nassco.org

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

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SAFE AND CLEAN

The right approach to lift station maintenance makes all the difference

By Colleen Young and Erin Bollig

Lift stations are integral parts of wastewater collections systems and keeping them well maintained is critical for maintaining flow and preventing overflows.

Lift stations require routine maintenance, as there can be a significant buildup of trash, rags, towels and other items that do not decompose. Whatever enters the sewer system will be passed into the wet well where it is either removed, or it creates clogs or grease buildups.

One of the biggest obstacles operators of sanitary sewer systems face is fats, oils and grease in lift stations. A very heavy accumulation of grease can form a grease ring, which can be compared to a soap scum ring in a bathtub.

If left unattended in a lift station, this ring of grease grows in size, hardens and requires cleaning methods that may cause particles of grease to break off, ultimately clogging the submersible pump and backing up the wet well.

“The last thing we wanted was to put someone down into that confined space.”

Adam Osterday

Safety concerns

Adam Osterday and Connor Davis, foremen at the Warren County (Ohio) Water and Sewer Department, and their team monitor and clean more than 70 residential and commercial lift stations within their collections system. Some present more challenges than others.

In one case involving a 30-foot-deep lift station, the team encountered a 2-foot-thick, solid ring of grease blanketed in 2 feet of debris. The combination of grease and debris clogged a 5-foot-tall, 2,500-pound submersible pump, causing the need for immediate replacement.

Davis says the utility tried everything, from a basic garden hose to mixer pumps and spinner nozzles, but nothing was effective.

“The last thing we wanted was to put someone down into that confined space,” Osterday adds. “Safety is our top priority here and that was not safe.”

New approach

When the team encountered the grease issue, Osterday and Davis tapped into the knowledge of Brandon Mitchell, a Jack Doheny Cos. parts, sales



The Warren County (Ohio) Water and Sewer Department needed a new approach to cleaning a 30-foot-deep lift station. The solution was a high-pressure static nozzle attached to the 1/2-inch hydroexcavation hose on a Vactor 2100i.

and service representative. Mitchell worked with them on an equipment solution to tackle the lift station grease.

In late 2020, the team at Warren County took delivery of a Vactor 2100i from Doheny. The truck employs advanced technology that not only enhances the performance of the equipment but the individuals who operate it. It is designed for less fatigue, more comfort, push-button operation, greater precision and superior power.

To remain safely above and outside of the lift station, Mitchell recommended using the 1/2-inch high-pressure hydroexcavation hose (up to 20 gpm) that extends from the side of the Vactor 2100i, with a hydroexcavation gun and high-pressure nozzle.

It is important to select the proper nozzle to clean safely and efficiently. While standard sewer nozzles with a 10- to 90-degree spray angle and rear jets are ideal for cleaning sewer lines, they are not ideal for use in lift stations. Standard hydroexcavation nozzles — both rotary and static — are lightweight but have a limited reach and impingement force, so the water flow isn't sufficient to cut through the grease at the bottom of a lift station. For efficient cleaning, a static, zero-degree nozzle delivers an accurate, concentrated water stream. With a high-pressure static nozzle, operators can cut through grease with ease.

To tackle the thick, solid grease ring in the 30-foot-deep lift station, the Warren County crew opted for a Marksman long-distance cleaning nozzle
(continued)

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from Hydra-Flex. With a controlled flow that provides optimal cleaning impingement over 20 feet, the Marksman is an ideal fit for cleaning corrosive environments. The precise stream cleans accumulated solids and grease buildup, while its accuracy reduces the operator's chances of damaging crucial lift station pumps and electrical components.

The Warren County crew is now cleaning its deepest lift station with a Marksman nozzle on a 6-foot lance equipped with a dead man switch, giving operators more control while reducing potential danger.



“Time and energy, as well as water use, have been dramatically reduced.”

Adam Osterday

The Marksman requires the use of a 6-foot (minimum) lance equipped with a dead man switch, giving the operator more control while reducing potential danger. It eliminates the need for multiple lances to reach extended distances, and doesn't require any confined-space entry for operators. This reduces time and effort on each job. With its low-flow (up to 20 gpm) design, the Marksman also reduces each job's water consumption and duration.

“We were able to stand above and outside the lift station while cleaning,” Osterday says. “We've now eliminated having to put a person in a dangerous, confined space. Time and energy, as well as water use, have been dramatically reduced. Safety remains our top priority along with efficiency, and this has been achieved.”

The right combo

Good maintenance practices are critical for proper lift station performance. Ensuring that the system is free and clean of debris and FOG is the best way to keep the lift station in working order. When it comes to keeping lift stations clean, the right tools will go a long way. Like selecting the right tool from your toolbox — do you need a hammer, a wrench or a screwdriver? — there are proper tools for tackling the job in front of you.

By combining a Vactor 2100i with the Marksman long-distance cleaning nozzle, the team at the Warren County Water and Sewer Department was able to safely clean the lift station and replaced the clogged pump. The equipment helped them save time, energy and water. More important, it kept the crew safe and got the job done. ♦

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SMPTools.com/valve-out-water

PUMPS, LIFT STATIONS AND CONVEYANCE

By Craig Mandli



CONTROL PANELS

1. Gorman-Rupp Integrinex

The **Integrinex** line of lift station controls from **Gorman-Rupp** is designed to ensure system performance through precise matching of controls to pumps and motors. Customers have four choices in liquid level controls when they select a Gorman-Rupp ReliaSource solids-handling pump package. Basic offers simple, reliable plug-and-play performance and is designed for accurate start/stop operation in a duplex alternation pump system. Standard includes duplex and triplex alternation, level sensors, pump delay and alarms. Advanced control systems include soft starters and VFDs to manage electric inrush, hydraulic shock, and matching starting and stopping torque-based management and monitoring. Remote View includes all the functionality of the advanced system with remote tablet-based management and monitoring. **419-755-1011; www.grpumps.com.**

2. Orenco Controls OLS Control Panels

OLS Control Panels from **Orenco Controls** come with the choice of either integrated starters or variable-frequency drives that optimize system operation. These panels are suitable for a variety of pumping applications, such as lift stations, stormwater pump stations, water boosting, dewatering or sludge pumping. They can also be used as a SCADA patch, connecting peripheral equipment to future or existing SCADA systems. Parameters can be configured via a human-machine interface and include a user-friendly startup wizard. Engineers can preprogram user interfaces to the site-specific needs of an installation, making the panel virtually plug-and-play. Maintenance staff can easily adjust settings and monitor the system remotely. These weatherproof control panels are UL 508A listed and include service-rated circuit protection, phase and voltage protection, and level controls. **877-257-8712; www.orenco.com.**

3. PRIMEX Rapid Set Mounting System

The **Rapid Set Mounting System** from **PRIMEX** is a complete lift station control package that comes ready to install, eliminating the need to custom manufacture mounting fixtures on site. It has a welded stainless steel frame, powder-coated white, to provide a durable yet aesthetically pleasing control package. The sloped top acts as a sunshield and provides protection from weather. An additional mounting plate, opposite of the control panel, provides space for installation of other electrical components. It reduces on-site installation time, provides a consistent appearance to installation, a compact footprint, includes a control panel that is factory installed, and has a standard 122 mph wind rating with option for upgrade to 200 mph. **844-477-4639; www.primexcontrols.com.**

LIFT STATIONS/COMPONENTS

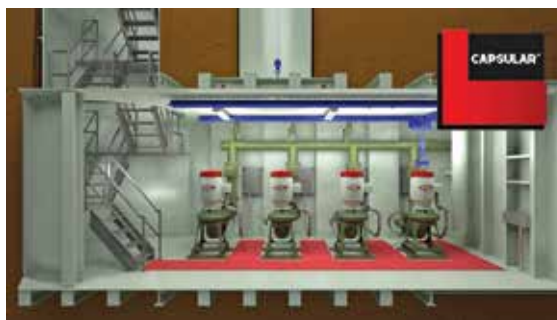
4. RELINER/Duran Inside Drop Bowls

Eliminate troublesome outside drops and clean up failed inside drops. **RELINER/Duran Inside Drop Bowls** and stainless steel pipe support brackets simply bolt to the manhole wall and can be cleaned and inspected from above. The compact, low-profile bowls are available in dozens of sizes to fit any application, including service laterals, mainline sewers and wet well drops. Stainless brackets are easily installed adjustable clamping pipe brackets available in noncorrosive 11-gauge 304 or 316 stainless steel and they are AIS certifiable. They securely attach pipes to structure walls with no protruding hardware and are fully adjustable to fit irregular surfaces. Modular Manhole Invert Channels improve manhole hydraulics, reducing maintenance, turbulence and odor. **800-508-6001; www.reliner.com.**

5.



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7.



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9.



5. Sauereisen RestoKrete No. 208

RestoKrete No. 208 epoxy modified cement mortar is a substrate repair material and water-resistant barrier for the prevention of inflow and infiltration in concrete or brick substrates including pump stations and manholes. It is designed to fill voids, irregularities, and air pockets in concrete. It is pumpable and sprayable, is easily applied by spin-cast or straight shot method, is trowel-able up to 1/2-inch thickness, is moisture tolerant, and is compatible with all SewerGard and ConoFlex systems. When mixed at the proper ratio of powder, liquid and hardener, a regular unit will yield 449 cubic inches per unit at 1/8-inch thickness. **412-963-0303; www.sauereisen.com.**

6. Smith & Loveless CAPSULAR Underground Pump Station

CAPSULAR Underground Pump Stations with Safe-Stair entry from **Smith & Loveless** provide end-users with efficient and long-lasting high-capacity pumping performance and superior operator safety and operations and maintenance costs. Designed for continuous human occupancy, the pumping system features reliable flooded suction pumps that deliver up to 29 mgd of wastewater conveyance. Accessible via the Safe-Stair entry module, entering the system is not considered confined-space entry. The system offers future adaptability through its multi-pump design and ability to adjust rotating assemblies and/or controls. The entire system is prefabricated and shipped directly to the job site. Excavation and installation services are also available. **800-898-9122; www.smithandloveless.com.**

METER

7. Pulsar Measurement OCF 6.1

The **OCF 6.1** open-channel flow and tank level meter from **Pulsar Measurement** allows the user to continuously monitor, display, totalize and data log flow through any flume or weir, or measure the level or range of fluids

in tanks or vessels. Use the isolated 4-20mA to transmit flow to remote chart recorders or displays, and the control relays are programmable for level/flow alarm and flow proportionate pulse for samplers, chlorinators or remote totalizers. New features include a built-in 26-million-point data logger with software for easy reporting, expanded flume and weir selections, CE approvals, and optional Modbus RTU communications. **888-473-9546; www.pulsarmeasurement.com.**

PUMPS

8. Boerger BLUEline

The **BLUEline** rotary lobe pump from **Boerger** is a self-priming, valveless, positive-displacement pump used to convey viscous and abrasive materials. There are 21 pump models in six series with pulsation-free operation, fully reversible rotation, dry-run capabilities and flow rates up to 7,500 gpm. The pumps are stable and wear resistant with a maintenance-in-place design that allows for all wetted parts to be easily replaced through the front cover without removing the pipe or drive systems. **612-435-7300; www.boerger.com.**

9. Crane Pumps & Systems Barnes Pressure Sewer EcoTRAN

The **Barnes Pressure Sewer EcoTRAN** from **Crane Pumps & Systems** provides a practical and environmentally safe alternative to traditional gravity sewers. Even in locations with difficult terrain, it reduces sewage infrastructure costs by allowing smaller-diameter piping to be used in place of large complex septic sewage systems, making it a suitable sewer choice. It collects and grinds sewage in an underground basin, then transports it to a remote private or municipal wastewater treatment plant. **937-778-8947; www.cranepumps.com.**

(continued)



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11.



12.



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14.

10. JAECO Fluid Systems FRAM

FRAM diaphragm metering pumps from **JAECO Fluid Systems** are hydraulically actuated and designed for accurate, completely leak-proof metering of difficult-to-handle liquids. They are available in both simplex and duplex configurations, with pump capacities ranging from 0.86 to 56 gph at operating pressures up to 1,200 psi, with an accuracy of $\pm 0.5\%$. They are durable cast iron with a choice of 316 stainless steel, PVC or Alloy 20 liquid ends with single or double ball or poppet spring-loaded check valves. Separate chambers for hydraulic fluid and gear lubricant make possible the use of the best medium for hydraulic diaphragm pulsing and the best medium for gear lubrication. The results are better performance and longer pump life. **877-778-3456; www.jaecofs.com.**

11. SEEPEX SCT

SEEPEX's SCT pump provides customers with lower maintenance times, reduced costs and operating efficiencies. The design offers easy access to the split stator and rotor, which means quick maintenance, short downtimes, energy efficiency, and overall lower life cycle costs. The pumps convey media for virtually all industries and handle conveying capacities up to 500 gpm and pressures up to 120 psi. It is a drop-in solution for the replacement of all older or obsolete pumps. The design also allows for the stator to be adjusted and tightened as wear progresses. The pump's stators last on average twice as long as traditional stators, saving time and money on parts and maintenance, and improving performance efficiency. **937-864-7150; www.seepex.com.**

12. Vertiflo Pump Series 900

The **Series 900** industrial vertical immersion vortex sump pump from **Vertiflo Pump** provides an unrestricted flow, since the impeller is not normally in contact with the solids being pumped. Applications include chemical slurries, fragile food-processing solids, paper and pulpy solids, petroleum and oils, sewage, wastewater treatment and textiles. It handles

solids up to 4 inches in diameter. It is designed for long life in severe services with heads to 170 feet, temperatures to 350 degrees F, and pit depths up to 26 feet with flows to 1,600 gpm. Construction options include cast iron, 316 stainless steel fitted, all 316 stainless steel, Alloy 20 and CD4MC. **513-530-0888; www.vertiflopump.com.**

VALVE

13. Flomatic Model 4082S6 Ball Check Valve

Designed for use with sewage pumps and applications involving viscous liquids or slurries, **Flomatic's Model 4082S6 Ball Check Valve** design is simple yet efficient. The AIS-compliant valve is constructed in 316 stainless steel with an access port, flanged class 150 connection, a Nitrile (Buna-N) covered metal sinking ball, and stainless steel fasteners. Additional components such as a proximity sensor are available. They are designed with no moving parts except for the ball, which automatically moves out of the flow path, minimizing headloss and maximizing efficiencies. **800-833-2040; www.flomatic.com.**

SCADA SYSTEM

14. Flowrox Malibu

The **Flowrox Malibu** portal is a combined IIoT online process monitoring, maintenance and analysis tool. The data is collected from sensors on a device, sent to a cloud, processed and shown in the Malibu portal. It is easy for anyone to view and use, because data is presented through a 3D model of the actual pump station, filtration process, thickener or other devices. This IIoT online process-monitoring portal enables maintenance and analysis. It collects data from smart products in operation and converts it into an easily accessible and visual format. It also functions as an analytics tool. Together Malibu and smart products create Flowrox Digital Services. **410-636-2250; www.flowrox.com. ♦**

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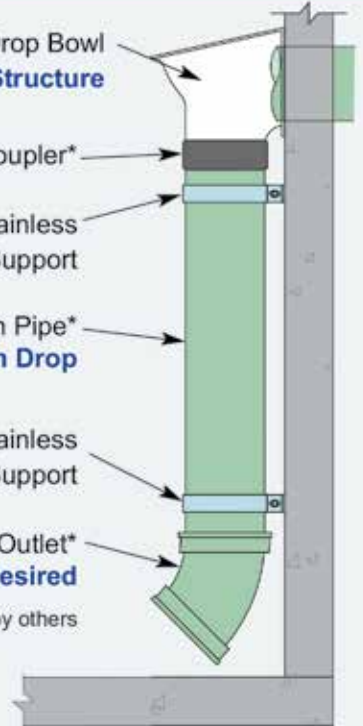
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Any Length Drop

RELINER® Stainless
Steel Pipe Support

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Orient as desired

*Supplied by others



U.S. Patents #5553973, 6074130

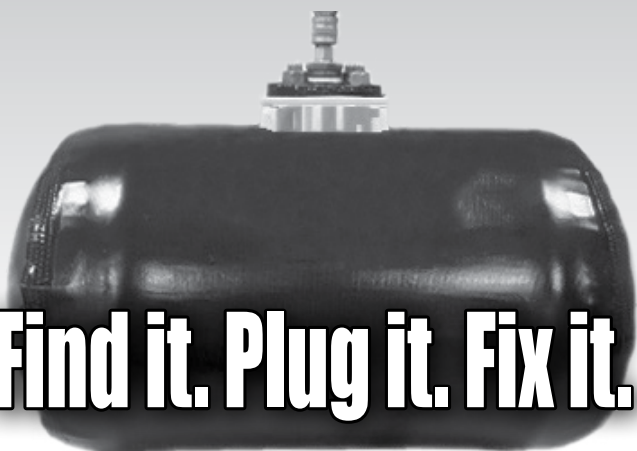
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Asset management software helps keep track of control valve information

Problem:

The city of Redlands, California, has two water supplies that feed into seven pressure zones. Tim Neumann, a water plant mechanic, studied 18 automatic control valves and produced a maintenance database, recording everything relating to the valves. Using his own spreadsheet program, he spent hours inputting records and pictures of the valves. He soon was responsible for 92 control valves, but his program was not an efficient way to log valve data.



Solution:

Cla-Val was just launching its **Link2Valves** asset management software for control valves. It enables operators to log data and photographs using a mobile phone app; the data is uploaded to a database via the app or a dedicated website portal.

RESULT:

Neumann can record all the valve settings, log the maintenance, take pictures, include the geolocations of the valve, and know when a valve is due for maintenance. The system graphically lets him know by changing the map icon color and sends him email reminders. **800-942-6326; www.cla-val.com.**

Pump station eliminates clogged pumps due to flushable wipes

Problem:

The Drake Pump Station, located in Saginaw, Michigan, experienced chronic pump maintenance due to flushable wipes. Although the dry pit pump station represented only 0.1 mgd of flow in the city's collections network, it required a substantial amount of servicing — up to three times a week. This consisted of two operators spending four hours manually remov-



ing rags in a confined space entry to clean out the clogged pump. It was a dirty and time-consuming task.

Solution:

In partnership with the city, **Duperon** adapted a proven screening system for a novel application. Deployed inside a 19-inch manhole, the system uses three existing technologies to screen, compact and transport collected debris 26 feet vertically without auger-assisted conveyance. By removing nondissolvable solids at the point they enter the collections system, the screening system restores integrity and resiliency of the collections system.

RESULT:

For the duration of the testing period, the city had zero instances of clogged pumps, resulting in a potential labor and maintenance savings of over \$41,000 annually. **800-383-8479; www.duperon.com.**

Pressure sewer system a fit for septic-to-sewer conversion



Problem:

Bloomingtondale, Georgia, relied on septic tanks until 1984. When tests were performed, the city discovered that the septic tanks did not perc properly because of the soil conditions: The soil is described as "gumbo," a hard clay dirt that sticks when wet and is hard as rock when dry. A moratorium on building permits was issued until a central sewer system was installed.

Solution:

Both pressure sewer and gravity sewer were considered. Pressure sewer, powered by **Environment One** grinder pumps, was chosen for several reasons, including shallow burial depth for the sewer mains: Because frost is not a concern in Bloomingtondale, mains are located approximately 3 feet below the surface (pressure sewer mains are buried just below the frost line, which varies by location). Mains could be installed using a trencher, eliminating the need for trench boxes. Because the system is sealed, infiltration is not an issue for pressure sewer systems that are installed properly. Gravity sewer mains commonly require depths of 15 to 20 feet regardless of frost depth.

RESULT:

More than 1,000 grinder pumps are installed in Bloomingtondale today; two technicians maintain the system. No preventive maintenance is needed, so grinder pump stations are not visited unless a homeowner calls for service. The city has pumps that were installed in 1984 that are still in service; they are replaced with Extreme Series grinder pumps as their service life ends. **518-346-6161; www.eone.com.**

Process successful in rehabilitating deteriorated manholes

Problem:

Hydrogen sulfide is a corrosive compound which, over time, and combined with heavy inflow and infiltration, deteriorates manholes. That was the case for several Richmond, California, manholes.



Solution:

Before the epoxy liner could be installed, extensive surface preparation and repairs were needed. The entire surface of each wall was resurfaced using hydraulic cement. In manholes where bricks were missing, they were replaced by filling in the areas with micro-silica cement. Furthermore, any severe leaks were injected with grout. At this point, H & R Underground was then ready to apply **Epoxytec's CPP Sprayliner**. Using a Graco XP70 plural pump set at a ratio of 1-1, it sprayed CPP Sprayliner at 150 mils thick.

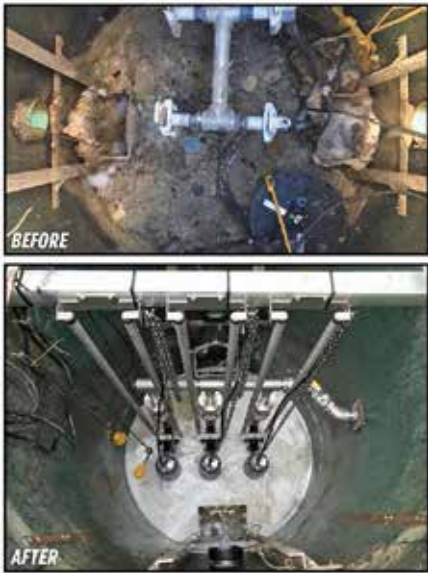
RESULT:

In total, seven manholes were rehabilitated over the period of one week. The expertise of H & R Underground, specifically its attention to detail in addressing each manhole's individual needs, allowed for successful rehabilitation in a timely manner. **877-463-7699; www.epoxytec.com.**

Grinder pumps solve community's clogging issue

Problem:

At least once a month, residents of a 48-unit townhome complex in New Jersey saw a vacuum truck unclogging their sewer pump system and cleaning out the well. The complex used a four-pump system engineered for single-family homes, and it was underperforming with a pumping capacity of 11 gpm. Rags and solids accumulated in the basin, and frequent vacuum truck visits were needed to keep the system operational.



Solution:

The facility turned to **Franklin Electric FPS IGP Series Grinder Pumps**, designed as replacements for small-horsepower progressive-cavity and other centrifugal grinder systems. The 2 hp pumps have a maximum flow

rate up to 33 gpm; the quadplex system was simplified to a triplex. These pumps allowed the owner to keep the existing basin and modify the controls. They were installed on a guiderail so that maintenance technicians can easily slide them out of the well, saving time and money.

RESULT:

Installed in 2018, the system has never clogged, eliminating the vacuum truck visits and the maintenance and emergency repair costs. **800-437-6897; www.franklin-electric.com.**

Upgrade cuts wipes problem and major costs from electrical bill

Problem:

In 2012, the pumps at Santa Margarita Water District in California began to lose efficiency as the wipes loading increased and the facility had to run all four pumps to maintain plant production. Upon reaching 60 Hz, plant staff had to shut down the plant to derag the pumps. The deragging process started to become necessary every two to six weeks, requiring two operators for about two hours each time to complete the task. And due to some aging isolation valves that leaked, the plant needed to be entirely shut down during deragging. These unplanned shutdowns were costing the district an acre-foot of reclaimed water production per month, and the labor costs added up to about \$15,000 per year.



Solution:

The facility decided to upgrade its existing **Channel Monster** to a new **Wipes Ready** perforated drum configuration from **JWC Environmental**. The perforated drum on the newest generation of Channel Monsters better captures the wipes and rags that can pass through traditional coil drums. "This upgrade cost significantly less than purchasing a whole new set of pumps," says Ron Johnson, facilities supervisor. "Plus, this is a solution that will completely eliminate the pump clogging problems we were having for the long term."

RESULT:

Since the new drums were installed, the facility has had zero pump-clogging issues and has returned to using two pumps at a time instead of four. Pumping energy costs have decreased \$78,000 per year, and manual pump deragging has been eliminated. **833-544-1335; www.jwce.com.**

Satellite-communication network enables quick emergency response



Problem:

After a drunk driver collided with two power poles in El Segundo, California, over 4,000 residents experienced power outages. Not only were residents out of power, but seven sewer lift stations were off grid. A major sewer spill in the nearby Pacific Ocean would lead to an environmental disaster.

Solution:

SmartCover alerted El Segundo sewer operators with level measurements. These alarms allowed the city to prioritize which lift stations were critical for response. Generators and emergency pumps were then allocated to the most-needed stations. Shortly after power was temporarily restored, on-call employees were notified that another outage was detected. Other segments of the electrical distribution system were overloaded and left nonfunctional. Field crews had no access to the internet due to the power outage. Decisively, they used their smartphones to their advantage, accessing **SmartCover's** website to track water levels at the stations. In response, three staff members shuttled generators from station to station. The online satellite-based monitoring system enabled the employees to see which stations were in need of immediate support.

RESULT:

The strategic decision to invest and implement **SmartCover** technology using a satellite-communication network enabled the city to effectively respond to an unexpected infrastructure emergency and successfully restore power to residents and back up its sewer lift stations. **760-291-1980; <http://smartcoversystems.com>.**

Submersible chopper pump stands strong through tropical storm

Problem:

The main lift station serving the wastewater treatment plant in Morgan's Point, Texas, had problems with three standard nonclog pumps that frequently clogged with shop rags and other debris after heavy rains. Over seven years, those issues cost \$100,000 for pump maintenance and service.

Solution:

The city installed a **Vaughan SE-Series** submersible chopper pump and a complete guiderail system.



RESULT:

The city received more than 100 inches of rain with no plugging or other issues. During Hurricane Harvey in 2017, the pumps ran continuously for 72 hours without incident, while pumping over 2.5 million gallons of sewage through the lift station. It never flooded and none of the 150 homes served experienced sewer backups. **888-249-2467; www.chopperpumps.com.**

Remote monitoring and control reduces false alarms



Problem:

False alarms from lift station pumps required frequent evening and weekend operator attention at a California community services district. Seven lift stations had aging instrumentation comprised of auto-dialers with traditional SCADA, which required operators to respond in person to each alarm. Operators needed a reliable way to monitor wet well levels and pumps remotely to address alarms efficiently and act when needed to avoid overflows.

Solution:

The district installed **XiO's Lift Station Control System** throughout the collections system. The cloud-based system allows operators to view statuses on sensors and pumps, as well as wet well levels, from any web-enabled device. They can receive alarms and control equipment, such as turning pumps on and off, via smartphones, greatly reducing the time required to respond to alarms.

RESULT:

The system immediately reduced false alarms. Data collected gave operators insights to the health of the pumps, enabling a proactive maintenance schedule. **877-946-0101; www.xiowatersystems.com.** ♦

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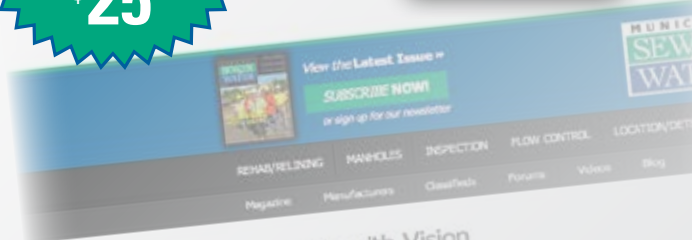
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HammerHead Trenchless announces leadership transition

Jeff Gabrielse has been named managing director of HammerHead Trenchless, assuming leadership of the HammerHead brand within the newly formed Rehabilitation and Replacement division of The Toro Co. Gabrielse will be overseeing the HammerHead R&R business, continuing its focus on delivering innovative trenchless equipment and solutions for the water, wastewater and gas markets.



Jeff Gabrielse

Vermeer enters distribution agreement with BRON

Vermeer signed a distribution agreement with BRON that gives the manufacturer of utility track plows and plow attachments the rights to sell its products through Vermeer industrial dealers worldwide. The agreement establishes Vermeer dealerships as the exclusive distributor for two of BRON's tracked utility plows in the 200 and 300 hp classes, and provides them the ability to sell the line of BRON utility plow attachments.

W.E. Rawson adds Joiner as marketing services manager

Jennifer Joiner has joined W.E. Rawson's group of companies Applied Felts, Maxliner and Ferratex Solutions as marketing services manager. In this new role, her responsibilities will be market development, new product promotion and maintaining a positive experience with current and prospective customers. She brings over 13 years' experience in CIPP for the water and wastewater pipeline rehabilitation industry. She has a bachelor's degree in accounting with a minor in business management and is a licensed commercial and residential general contractor.



Jennifer Joiner

Vac-Con manufactures its 9,000th unit

Vac-Con announced it manufactured its 9,000th truck build since its founding in 1986. The milestone came just before the close of 2020 and is a source of pride for the approximately 300 employee-owners at the operation. In honor of the accomplishment, a custom T9K — Truck 9,000 — logo was created and will be used throughout 2021 on various employee and marketing pieces.

Boshart Group announces leadership appointments, transitions

Gary Boshart, founder and chair of the Boshart Group, and its newly appointed CEO, Jeremy Kuepfer, announced leadership appointments and transitions in their North American operations. Kuepfer most recently served as the senior vice president of IT and operations. Kuepfer announced that as of March 1, Bo Andersson, who has



Nick Farrara

served Flomatic for over 50 years, most recently as president, will transition to a new role as director of research and development for Boshart. Also effective March 1, Kuepfer said Nick Farrara will be appointed president of Flomatic.

Victaulic acquires Waupaca Foundry's facility

Victaulic purchased a 220,000-square-foot Waupaca manufacturing plant in Lawrenceville, Pennsylvania. When operating at full capacity, the facility will increase Victaulic's foundry production capacity by 70% in the U.S. and allow for future growth. The facility, including two foundry molding lines, will also enable Victaulic to produce larger-scale products.

SmartCover welcomes new president and CEO

SmartCover announced Corey Williams joined the company as president and CEO. Co-founder Greg Quist is stepping back from leading daily operations of the company and will continue in the new role of chief visionary officer. Co-founder and Chief Innovation Officer David Drake will also remain with the company. Both Quist and Drake will remain on the board of directors.



Corey Williams

Moisio named Jacobs' global VP and water market director

Jacobs appointed Susan Moisio as global vice president and water market director in the company's People and Places Solutions line of business. She replaces Peter Nicol, who retired after a 40-year career with Jacobs. Moisio was formerly global solutions director for conveyance and storage at Jacobs.

Core and Main acquires Triple T Pipe & Supply

Core and Main has entered into a definitive agreement to acquire substantially all of the assets of Triple T Pipe & Supply, located in Lubbock, Texas. Financial terms were not disclosed. Core and Main currently serves West Texas from its locations in El Paso and San Angelo. Upon closing, this acquisition will mark the 12th since Core and Main became an independent company in 2017.

Inframark acquires District Management Services

Inframark announced that it acquired District Management Services and Community Association Management Services, both subsidiaries of Tampa, Florida-based Meritus Corp. DMS and CAMS have been providing community development district and homeowners' association management services to clients throughout Florida for over a decade. They join Inframark under the newly formed IMS-Meritus, which will continue to be led by its founder Brian Lamb and his team. ♦





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Product Spotlight

Tablet takes guesswork out of fusion quality checks

By Craig Mandli



Pipe fusion is a task that requires excellence and precision. No technician wants to complete fused joints and bury the pipe, only to find out that a fusion was faulty after the water starts flowing. The DataLogger 7 from McElroy ensures that the job was done correctly the first time.

This ruggedized tablet builds on the industry-standard McElroy DataLogger, which has brought increased accountability to the pipe fusion industry for 25 years. By recording critical information on fusion joints, the DataLogger helps technicians make sure that pipelines adhere to industry standards before going into service.

“The latest evolution of the DataLogger takes advantage of advancements in technology and incorporates the feedback we have received from customers who have adopted this platform into their business,” says Geoff Koch, McElroy vice president of product development.

Perhaps the most noteworthy improvement on the DataLogger 7 is its offering of more than 14 hours of battery life and a hot-swappable battery option to keep fusion operators up and running.

“That’s more than twice the power for those long days on the job and for those long jobs that our customers have to complete,” Koch says.

A faster and more powerful processor powered by Android 9 provides the ability to run additional business apps on one personal device. McElroy supplies a pre-installed SD card in the onboard storage expansion slot, which provides a redundant backup of fusion records, so operators never have to worry about losing data. SIM card functionality provides communication between fusion operators and supervisors for real-time analysis and troubleshooting.

Military-grade hardware makes the IP68-rated tablet dust-proof, waterproof and shock-proof, helping it withstand tough job site conditions. A 7-inch touch screen offers readability even in sunlight, and can be used with gloves and in wet conditions. In addition to documenting job, operator, machine and GPS locations, the DataLogger 7 records electrofusion, squeeze-off techniques and pressure testing, as well as butt, miter, manual and sidewall fusion.

Along with a simple-to-follow guided workflow and FusionGuide graphs for live visual display of the fusion process, operators can fuse more joints in less time with the McElroy Optimized Cooling algorithm. **918-831-9236; www.mcelroy.com.**

SPECIAL REPORT



Patterson Mfg. davit cranes

New davit cranes are available from corrosive environment and safety experts, Patterson Mfg. Give your operations a lift with models in 1/2- and 1-ton capacities. The cranes exhibit the company’s hallmark safety, simplicity and durability, with key features such as a reliable brake with long life and readily available parts, a hot-dipped galvanized finish, and no plastic sheaves or pulleys. They put safety and simplicity within your reach with a low-maintenance, easy-to-assemble

design that is made in the U.S.A. For over 160 years, Patterson has been a trusted supplier of winches, rigging, fittings and custom products for lifting applications in the marine, construction and mining markets. These davit cranes continue to deliver the company’s promise of helping businesses run safer, easier and faster. Find out how our team and products can improve employee safety and positively impact your bottom line. **800-322-2018; www.pattersonmfg.com/davit-cranes.**

Reed Bear Hug squeeze tool system



Reed Mfg.'s Bear Hug polyethylene squeeze tool system with hydraulic cylinders provides 83,400 pounds of squeeze force. For squeeze control, choose from an air-over hydraulic pump PESAPA or manual hand pump PESMPA to work with the PES8BT base tool. The system features a double bar configuration for a confident squeeze. In addition to more secure flow stoppage, a double-point squeeze lessens any chance of pipe damage. A bottom swing-out bar with latch allows for simple pipe enclosure. Compact and lightweight at 175 pounds, the

PES8BT can be lifted into position with its oversized U-bolt. The double-acting system both squeezes and releases with a hydraulic pump, so no reliance on internal springs for retraction is needed. Color-coded stops increase visibility and help operators quickly confirm that stops are set properly, and pipe centering arrows aid in alignment. **800-666-3691; www.reedmfgco.com.**

SmartPhone Meter Reading CYCLOPS AMI system



CYCLOPS, an advanced metering infrastructure system from SPMR, is an innovative, two-way AMI water solution that delivers fast and cost-effective automation of virtually any meter, direct read or encoded output. The CYCLOPS MIU is available in two connection types: a camera-end model for automating direct

read meters and a wire-end model for attaching to encoded output meters. The units are available in 10- and 20-year battery configurations, and all components are fully potted for environmental integrity. CYCLOPS units transmit securely over existing cellular networks. All data is sent at night over existing cellular infrastructure and posted to the CYCLOPS web portal for detailed reporting, validation and, ultimately, export to billing. **214-540-5050; www.spmrsmart.com.**

Perma-Liner LightRay LR3 UV repair system



Waterline Renewal Technologies' new LightRay LR3, from Perma-Liner Industries, incorporates the latest in UV trenchless technology, reducing curing time during installations. A modular design and enhanced electrical connections for rapid packer attachment and removal are among the key highlights. Transitions, cast iron and vertical stacks can all be serviced by LightRay LR3, which easily navigates 45- and 90-degree bends. Its non-VOC resin is pre-impregnated into the high-performance fiberglass liner and shipped ready to install for no-dig, small-diameter pipe infrastructure repairs. Once the install site is

prepped, casting times in less than 10 minutes can be achieved, eliminating the risk of premature or prolonged curing times due to temperature variations. **866-336-2568; www.perma-liner.com. ♦**



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PEOPLE/AWARDS

Connie Corona was hired as deputy executive director of the Public Utility Commission of Texas.

The **Enviva** renewable energy company, headquartered in Maryland, received the Elizabeth River Project's Sustained Distinguished Performance River Star Business Award. Enviva's Port of Chesapeake terminal implemented sustainable projects to help improve water quality and reduce energy use, which benefited the Elizabeth River's ecosystem. Among Enviva's improvements were enhancements of its stormwater runoff systems.

The Dominion Energy Charitable Foundation awarded a \$20,000 grant to **Tinkers Creek Watershed Partners** (Ohio) for its work in promoting development of green infrastructure within the region, including installing permeable pavement building retention gardens and rain gardens, and preserving floodplains and other habitats, to remediate the effects of stormwater flooding.

Freese and Nichols Inc. (Louisiana) hired **Lewis Bernard** to lead stormwater pump station projects and help expand flood protection solutions.

Hancock Associates announced that **Jacob Lemieux** passed the professional engineering exam and is now a licensed Professional Engineer in Massachusetts. He is experienced in several areas, including grading and drainage design with drainage analysis and stormwater reports.

The Augusta Commission (Georgia) hired former city engineer **Wes Byne** to head Augusta Utilities. He replaces longtime director **Tom Wiedmeier**, who passed away in August 2020. ♦

CALENDAR

May 19-21

Ohio Stormwater Association Annual Conference, Kalahari Resort and Conference Center, Sandusky, Ohio (event will be held both virtually and in person). Visit ohstormwaterconference.com.

June 7-9

Municipal Wet Weather Stormwater Conference, jointly held by International Erosion Control Association Region One and Southeast IECA Chapter, Marriott Hotel, Huntsville, Alabama. Visit ieca.org.

June 7-11

Environmental and Water Resources Institute of the American Society of Civil Engineers World Environmental and Water Resources Congress, event held virtually. Visit ewricongress.org.

June 14-17

American Water Works Association ACE21 Conference, San Diego, event held virtually. Visit awwa.org.

June 22-23

Water Environment Federation Stormwater Summit 2021, event held virtually. Visit wef.org.

July 12-16

American Society of Agricultural and Biological Engineers Annual International Meeting, event held virtually. Visit asabe.org.

July 19-21

American Water Resources Association Summer Specialty Conference, event held virtually. Visit awra.org.

Aug. 29-Sept. 1

American Public Works Association Public Works Expo (PWX), America's Center, St. Louis. Visit apwa.net.

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