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October 2024
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Jimmie Griggs
Design Engineer
Sonoma Valley County
Sanitation District

CARRYING IT FORWARD

Sonoma tackles trunk main replacement to cut I&I and maintain community health

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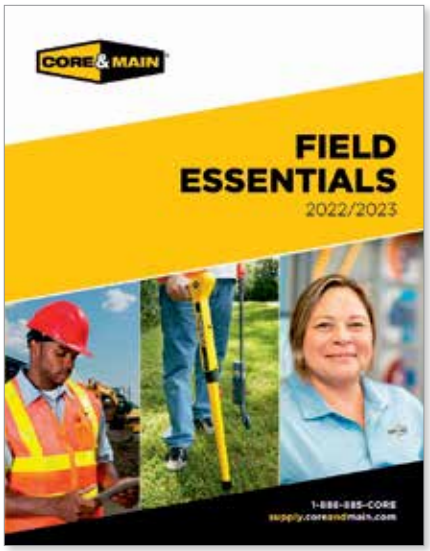

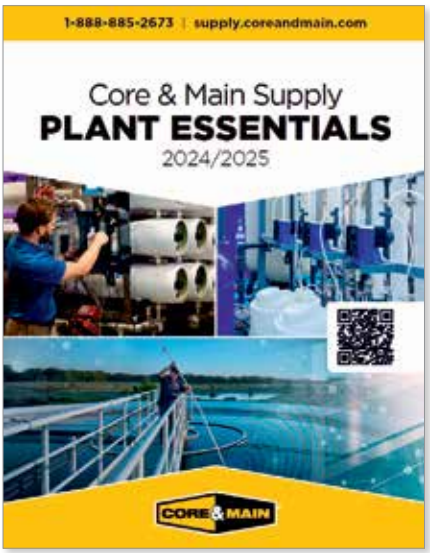

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MUNICIPAL SEWER & WATER

FOR SANITARY, STORM AND WATER SYSTEM MAINTENANCE PROFESSIONALS

Published monthly by:

COLEpublishing
PO Box 220
Three Lakes, WI 54562

www.mswmag.com

In U.S. or Canada call toll free 800-257-7222
Email: info@mswmag.com / Fax: 715-350-8456

Office hours Mon.-Fri., 7:30 a.m.-5 p.m. CST

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ON THE TRAIL

Keeping up with maintenance pays off in countless ways.

At face value, mountain bike trails may not seem to share much in common with water and wastewater systems.

The reality is much different. At a base level it's all infrastructure. And it's all meant to convey. Moving the water where you want it to go is the principal purpose of your systems, and it's also a necessary design and construction element of a good trail.

Build a good trail and it'll last. Take shortcuts and it'll erode quickly and might not ever work properly from the start. Careful planning and construction combined with regular maintenance will provide a very long service life. Absence of any of those inputs can have significant consequences down the line. It's the same with your conveyance systems.

In the case of trails, there are no cameras or confined-space entry required to get a good assessment of conditions. They reveal themselves with every pedal stroke. You see where the trail is cupping and holding or channeling water. You see where the sand is being carried. Where roots are causing problems.

Every pedal stroke teaches you something if you're willing to learn. It usually takes about 45 minutes out on the trail before all the outside stuff works its way through my head and I just start riding free, with thoughts of nothing but the trail ahead and the bike moving beneath me. Those are the best moments. But lately, especially on more casual rides, I've been taking greater note of where stormwater is running, what rain is doing to the trails, where slopes or drainage features could be improved to give the trail a longer and better life. I sometimes recognize flaws in the original build, but often it's just years of use teamed with the inevitable erosion of anything made of dirt that has changed the trail.

Riding bikes led me to building trails. And editing this magazine has given me so much appreciation for what goes into building and maintaining our water and wastewater infrastructure.

I sometimes hear people say it would be easier to reroute a trail than to repair it. I usually bristle at the notion. Trail maintenance and repair is hard work, but it's rarely more difficult than building a whole new section of trail. And it's obviously a lot easier — given the resources — to be vigilant with the maintenance of your systems than to dig up blocks or city streets when things go wrong.

Maintaining trails, in my opinion, is a noble endeavor. It's no different with water and wastewater systems. Your systems wear the mistakes of the past and the damage caused by decades of use. Improvements are always needed. Maintenance is constant. But when you keep up with it, it'll be a very long time before you have to dig it up and replace it.

There's an economy in that approach. Doing it right from the start so surprise repairs and costs don't pile up by the mile. There's also a responsibility in leaving things better than they were when you got there.

Whether it's trails or the water and wastewater systems your customers depend on every day, maintenance work isn't usually fun or flashy. But it keeps it all moving forward.

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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STAYING SAFE

When Traffic and Job Sites Merge

Utility workers play a crucial role in promoting roadside safety. Whether you're working on highways, local roads or other urban infrastructure, your safety and the safety of those around you depend on heightened awareness and adherence to best practices.
mswmag.com/featured

BOOST WATER CONSERVATION

Turn Customers Into Partners

Santa Fe had substantial success cutting per-capita water consumption. Now the New Mexico capital city is focusing on a long-term conservation strategy built on youth education and public involvement in decision-making. **mswmag.com/featured**

OVERHEARD ONLINE

"We need to do a better job showing Gen Z how incredible the opportunities in the trades are and encouraging them to consider that path."

—Jobber's Annual Survey Reveals Younger Generation's Opinions About Trades Careers
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AI MODELING

Less Risk for Water Partnerships

A Cornell-led study found that water infrastructure partnerships often place financial and supply risks on local partners. Using AI-driven modeling, researchers showed these risks can be reduced, improving water supply benefits and financial stability. **mswmag.com/featured**

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CARRYING IT FORWARD

Sonoma tackles trunk main replacement to cut I&I and maintain community health

By Giles Lambertson

For the last 20 years, the Sonoma Valley County Sanitation District has been methodically replacing the system's sewer trunk main. The trunk line was, to put it simply, old and leaky. By the end of the summer, the district will have refurbished some 6 miles of the main with less than a mile of repair work remaining.

One might say you can see a light at the end of the tunnel because some of the trickiest parts of the project have been tunneling, or boring, through backyards and under streams. Jimmie Griggs has been there to watch it. Griggs is the district's project engineer for the sewer main replacement and has been a design engineer for the district's capital improvement group since 2016.

The district took over management of the sewer system in 1995. Forty-six years earlier, the "special district" was formed by the legislature to manage the water supply services of Sonoma and surrounding unincorporated areas. So, it is an independent agency that nevertheless operates under the auspices of the Sonoma County board of supervisors.

"When we inherited these districts, they were all in very poor shape," Griggs says. "The treatment plant has since undergone major upgrades to operate within a permitted range. There has been a whole laundry list of upgrades at the plant."

The old trunk main is a reinforced concrete product ranging downward in size from the 42-inch-in-diameter line where it enters

"When we inherited these districts, they were all in very poor shape."

Jimmie Griggs

PROFILE:
Sonoma Valley County (Calif.) Sanitation District

SERVICE AREA:
4,500 acres

NUMBER OF CUSTOMERS/ CONNECTIONS:
17,000 residences

SIZE OF SEWER COLLECTION SYSTEM:
132 miles

WASTEWATER TREATMENT PLANT:
2.7 mgd average summer volume, 11 mgd capacity

NUMBER OF SANITATION SYSTEM EMPLOYEES:
63

WEBSITE:
sonomawater.org

Workers with contractor Mountain Cascade Inc. construct the jacking pit for the Sonoma Valley County Sanitation District sewer trunk main replacement 5A project near Sonoma, California.

PHOTOGRAPHY BY DAVID ELKINS

Jimmie Griggs, design engineer, Sonoma Valley County Sanitation District

MITIGATING PROBLEMS

Major public agency projects that disturb soil, disrupt normal traffic patterns, or otherwise encroach on daily routines can be a source of aggravation.

Jimmie Griggs engineers projects for the Sonoma Valley County Sanitation District. Some of the construction work he oversees, such as the district's ongoing upgrade of the system's sewer trunk main, can cause headaches for residents. He tries to help mitigate the problems.

"We have a great public information group and I work closely with them," says Griggs. For the sewer main work, the group created a handout, which also can be accessed through a link in the district's website. The handout explains the project, why it is being undertaken at this time, a timeline for the project and phone numbers for contacting the district office with any questions.

The handouts are given to residents at their front doors. "We get out ahead of the work and, at the door, put a face on the project. I think it has done a lot of good."

Griggs alludes to the old maxim about having to crack an egg to make an omelet and says he tries to get people in the path of a project to concentrate on the omelet. "I do my best to convey to affected individuals that the suffering you are going through for a short period of time is for the greater good of the community, for the next generation. A short-term disruption with long-term benefits."

He says he has seen frustrated residents "change their tune when given an explanation. It's never fun to run into problems when you're trying to get to work or to the store. But if they're given an idea of why it's happening, it makes it easier for them to stomach the inconveniences."

the treatment plant. The line was cracked and corroded and nearing the end of its life expectancy. And it leaked.

"Because of I&I, we were experiencing huge increases in flow during rain events," Griggs says. Beginning with the large-diameter line nearest the plant, the concrete line is being replaced with PVC pipe with gasketed fittings to better seal the line at the joints. For increased capacity, the new pipe generally is of larger diameter than the pipe it is replacing.

For the most part, the new main is being installed using traditional open-trench construction methods. As much as possible, it is being laid parallel with the old pipe except in tight places where the new line has been squeezed into the footprint of the old one.

Typically, the pipe rests at the bottom of a 16-foot-deep trench. At its shallowest point, the pipe might be 10 feet deep, at the deepest, 28 feet, Griggs says — always deeper into the earth than the old pipe. At a crossing of a stream, for example, the new pipe will be inserted in an augured tunnel somewhat below the level of the old one so that it will have more separation from the rushing water in the streambed above it.

Meeting challenges

Where the pipe work becomes especially interesting is at chokepoints. Three such areas are part of a 1.6-mile leg of the project. One leg was completed in 2022, the second is being undertaken this summer. The third is in the planning stage.

In both the first two segments, the pipe was routed between houses 20 to 25 feet apart. The 2022 segment had the pipe coming within about 4 feet of a house foundation horizontally, but considerably below the level of the foundation. There was no impact of any sort on the structure.

"Our standard practice when installing pipe near a structure is to survey the surface of the ground before, during and after the installation process to verify that there is no displacement of the structure or damage to it," Griggs says. "That's a standard operating procedure." He adds that there also is potential for the ground to heave or soil to settle if a void has been created and a collapse occurred. Any such events are detected and addressed in real time.

Vibrations created by the auger bore are minimal and of little consequence, Griggs says, partly because the boring is occurring considerably below any structures. Also, the rate of advance of a boring auger is "not superfast. It is more of a slow churning process" that creates less disturbance in the surrounding material than if the advance were more aggressive.

The bore in 2022 was 106 feet from entry shaft to receiving shaft and was completed in three or four days. However, that excludes time spent excavating the shafts and installing boring and case-jacking equipment. The auger itself can crawl some 60 feet through subsoil in a typical workday.

The first bore was performed by Golden State Boring & Jacking of Chino, California. This summer's between-houses bore in a densely populated area just northwest of Sonoma is by West Coast Boring of Bakersfield. That contractor employs a Barbco

Model 36-48-630 boring machine, a 2-ton unit with a 100 hp engine.

Oversizing

One slightly unconventional element of the district's trenchless work is use of an oversized steel casing for the pipe. In the 2022 project, an 18-inch line was replaced with a 27-inch pipe. In this summer's job, a 24-inch pipe is going in the ground. In each case, the pipe is inserted into a 42-inch casing. Why the rather loose fit?

"A 36-inch casing would have been satisfactory," Griggs acknowledges, "but we opted for the 42-inch diameter in the event that we ran into a blockage requiring removal of the auger head. We knew it would be a lot easier to get someone into a 42-inch casing than it would a 36-inch casing." As it turned out, the oversizing paid off: Roots were encountered in the 2022 project and had to be removed by hand. Doing that work in a 42-inch space proved optimal.

The bore in the cul-de-sac in 2022 also was notable for what didn't happen. Griggs explains that the team knew there was a buried electric line in the path of the auger but didn't know how deep it was. The assumption was made that it was just a few inches under the surface of the soil.

"We didn't pothole the line because it was under a sidewalk and we said, 'Oh, well, we'll have plenty of clearance.' It turned out the electric line was 3 1/2 or 4 feet deep. We came in right under the line. It was kind of cool to watch, actually," Griggs says. "A tip of the hat to those auger operators. They are really good at what they do."

Mountain Cascade crew members move shoring devices into place for a jacking pit.

"We knew it would be a lot easier to get someone into a 42-inch casing than it would a 36-inch casing."

Jimmie Griggs

A third segment of the trunk replacement project — the Pequeño Creek crossing — doesn't have houses to squeeze between. Rather, it has volcanic rock to bore through. "It will be interesting to see how our machines get through that material," Griggs says. "We'll meet with some trenchless experts and have further discussion about it. It's not an unachievable task."

Important work

An upgrade of a sanitary system of this magnitude typically is subject to public bidding to ensure the work is done by qualified contractors at a competitive cost. The district is, in fact, required to bid out any capital projects costing more than $60,000. These projects clearly qualify — this summer's work including the trenchless segment from Happy Lane to Orchard Avenue, for example, has a price tag of $6.3 million.

Meanwhile, the sanitation maintenance crews are busy with more routine tasks — including inspecting lines with video cameras and cleaning and clearing lines. Their peers on the water side of the agency stay busy keeping pumps running and valves functioning, among other tasks. "They have fires to put out," Griggs says of the district's maintenance crews' response to emergencies.

The bottom line, the design engineer says, is that all of this is important work — maintaining and operating a sanitation system. He calls it "a really important and often forgotten field. It's one of the things you need for survival."

Griggs cites the absolute necessities of food and water and shelter for any society. "But you also need sanitary conditions and hygiene. The more urban and dense a community becomes, the bigger the sanitation problem can become. A good sewer facility is vital to maintaining the health of a community."

People shower or flush a toilet without any thought of what happens to the waste and water they send down the drain. This general unawareness of a sewer system leads people to ignore the infrastructure when it begins to age, says Griggs.

"People came home after World War II and built these wonderful systems that are getting some age on them now. It's our time to pick up the flag and carry it forward." ✦

WORKING WITHIN EASEMENTS

Property easements reserve certain legally stipulated rights for nonproperty owners. Ignoring them is not a good idea.

The Sonoma Valley County Sanitation District held an easement on residential property on Happy Lane cul-de-sac in Sonoma. Several feet below the surface, an 18-inch sewer line ran through the property. The line was upgraded in 2022 when an auger bore penetrated the property, clearing the way for the insertion of a 42-inch steel case into which a new 27-inch sewer main was installed.

The problem: A previous property owner built a swimming pool — in violation of an easement — directly in the path of the old and new line.

"When they built the pool, they came really close to tapping into our old sewer line. We might have filled the pool for free," says Jimmie Griggs, a design engineer for the sanitation district and engineer for the utility's sewer trunk main replacement project.

Only a foot of soil separated the bottom of the pool from the steel case housing the sewer main. Before the new line was run through the property, the pool was removed and the hole filled with native material.

The present-day owner of the property was compensated for loss of the pool after right-of-way agents assessed the situation and ordered its removal. The owner might have used the compensation to build a new pool in a part of the yard outside the easement, but didn't do so.

THE REAL VALUE OF WATER

Video campaign allows Florida residents to express unique perspectives on their relationships with water

By Sandra Buettner

The Miami-Dade Water and Sewer Department was looking to strengthen connections with customers. The team found those connections lay in each person's unique experiences with water.

"We recognized that we all come from different walks of life and have different experiences, but there is one commonality, and that is water," says Roy Coley, director of the department, also known as the Water Guy. "Water is important to all of us. When you do a good job treating and providing water, it can be taken for granted."

That became the theme of a successful public engagement campaign. The overarching objective from Coley's point of view was to help residents appreciate and realize the value of water and how the utility works around the clock to provide it.

"Our department's successes can be attributed to the unwavering support of Miami-Dade County Mayor Daniella Levine Cava," Coley says. "She is a water warrior who is a staunch advocate for our water resources."

The Miami-Dade (Florida) Water and Sewer Department is one of the largest of its kind in the United States, serving more than 2.4 million customers while maintaining more than 8,500 miles of waterlines and some 4,100 miles of sewer lines.

Video vignettes

Coley believes public perception drives public resources. "We needed people to recognize the importance of water services in their lives and the importance of continuing investment in our water assets," Coley says. "We wanted them to reflect on how water is present in their lives. We asked them to think of the wonderful memories they had around water."

The communications staff created a video cam-

paign around that theme. They asked residents to produce and submit one-minute videos on fond memories around water. If videos exceeded one minute, the staff edited them down. The utility also sends a camera crew for people who aren't comfortable shooting their own videos.

The idea for the campaign came from Ileen Delgado, the department's chief of public engagement. The communications team took over from there. The campaign is promoted on the utility website and through Instagram, Facebook, LinkedIn and X. The team also outsourced the creation of a TV commercial showing people from all walks of life enjoying water during their everyday activities.

Happy tales

There is no prize for the submissions, but residents receive bragging rights, and highlighted submissions are posted on the website and social media. The utility tags videos at customers' request so that they can share their stories with family, friends and neighbors. That extends the campaign's reach.

Submissions run the gamut of residents' fond memories of water. One resident explained how water affected his life from when he learned to swim in his family's pool. Another, who owns a craft brewery, described how water is critical to every step in making beer.

Another resident talked about her survival from stage three cancer. She was told to stay hydrated during treatment and how water was critical to her survival and recovery. In one video, a mother talks about how her baby daughter would get fussy, but not when being given a bath. The sound of running water would calm her.

Popular with residents

The campaign was launched in late 2023. It has been well received, and the utility continues to receive submissions. Communications team members look at all submissions and choose two to three per month.

"If we get duplicate ideas, that's OK because everyone tells their story from a different perspective," Coley says. "We share others' ideas with residents to get them thinking, but in no way do we write scripts for them. This is about their ideas and how water has been memorable in their lives. These are their stories."

The team has received only positive comments on the videos: "It's a very thought-provoking campaign. It gets people thinking about water and its significance in their lives. And that's what our goal is."

Videos can be viewed at miamidade.gov/global/water/water-is-life.page. ✦

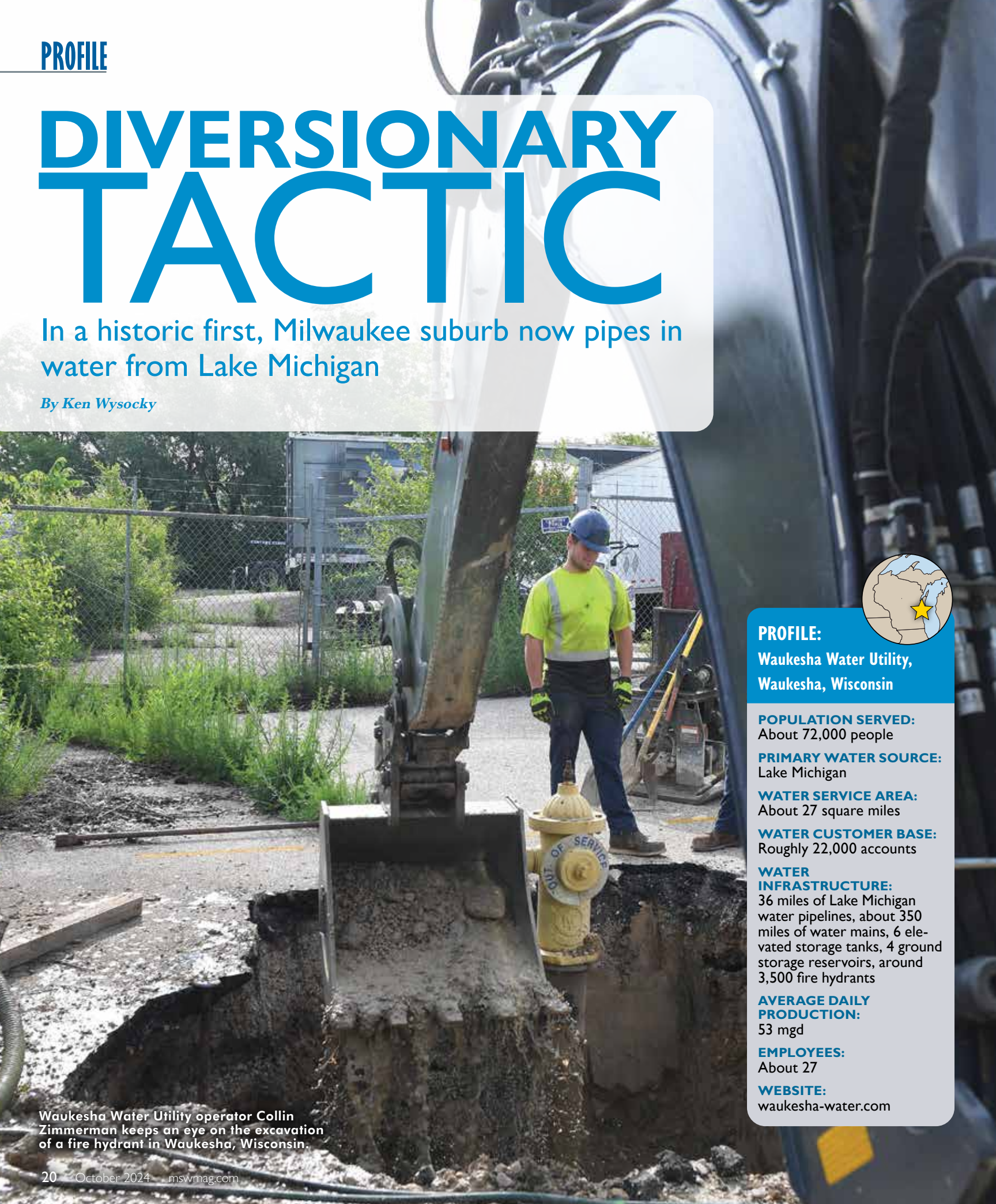
"If we get duplicate ideas, that's OK because everyone tells their story from a different perspective."

Roy Coley

DIVERSIONARY TACTIC

In a historic first, Milwaukee suburb now pipes in water from Lake Michigan

By Ken Wysocky



Waukesha Water Utility operator Collin Zimmerman keeps an eye on the excavation of a fire hydrant in Waukesha, Wisconsin.

PROFILE:
Waukesha Water Utility, Waukesha, Wisconsin

POPULATION SERVED:
About 72,000 people

PRIMARY WATER SOURCE:
Lake Michigan

WATER SERVICE AREA:
About 27 square miles

WATER CUSTOMER BASE:
Roughly 22,000 accounts

WATER INFRASTRUCTURE:
36 miles of Lake Michigan water pipelines, about 350 miles of water mains, 6 elevated storage tanks, 4 ground storage reservoirs, around 3,500 fire hydrants

AVERAGE DAILY PRODUCTION:
53 mgd

EMPLOYEES:
About 27

WEBSITE:
waukesha-water.com

For the first time in decades, residents of the city of Waukesha, Wisconsin, aren't worried about water supply or quality, thanks to a historic agreement that allows the far western suburb of Milwaukee access to water from Lake Michigan, about 17 miles to the east.

The controversial agreement was significant because it marked the first time a community outside the Great Lakes basin was allowed to tap into Lake Michigan water under the terms of the so-called Great Lakes Compact. Approved in December 2008, the agreement regulates and protects against diversions of Great Lakes water from the 94,000-square-mile basin, says Dan Duchniak, general manager of the Waukesha Water Utility.

"It was a historic undertaking — the first of its kind," Duchniak says of the approval, which required unanimous assent from eight governors of the states surrounding the Great Lakes: Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania and Wisconsin.

"It's also the biggest water project in state history," he says.

The agreement allows Waukesha to divert up to 8.2 million gallons per day of Lake Michigan water.

But there's one key caveat: The city has to return the same amount of water it uses each day back into the Great Lakes basin, minus an allowance for "consumptive use" by residents and businesses. Waukesha achieves this by discharging treated water into the Root River, a 43-mile waterway that empties into Lake Michigan in Racine, located in southeastern Wisconsin.

Going the extra yard

But to avoid any negativity that might result from a net loss of water going back to Lake Michigan and to make the diversion proposal more attractive, Waukesha officials went one better and offered to return 100% of the water it receives to Lake Michigan. The amount it sends back every day is based on the previous year's average daily water usage, Duchniak says.

"During a drought, we might not be able to pump 100% of the water back, but we'd make that up during spring and fall when there's more rain," he notes.

How does the city make up for the water lost to consumptive use? The treated water it sends back to Lake Michigan includes stormwater inflow and infiltration into sanitary sewers, which makes up about 20% of the water the city's treatment plant handles every day. That more than accounts for the roughly 8% of water lost to consumptive use, he explains.

The city devised a system that prevents it from sending more water than required back into the basin. When the water that's sent back to Lake Michigan reaches the required level, a pump that sends it there automatically shuts off and the rest of the treated water is discharged into the Fox River, he says.

"Our employees worked their butts off and did an amazing job."
Dan Duchniak

"Returning the water via the Root River was a huge selling point," Duchniak notes. "That provided some positive environmental impacts on the river, such as stabilizing river flows to reduce low flow periods and improving spawning conditions for salmonids, which results in increased angling opportunities within the Great Lakes."

Major undertaking

Getting Lake Michigan water to Waukesha and back into the Lake Michigan basin required roughly $286 million in infrastructure, including 36 miles of underground pipeline consisting of mostly 36- and 30-inch-diameter ductile-iron pipe.

The system's primary components are an 11-mile pipeline that carries water treated by the city of Milwaukee from a pump station in Milwaukee to Waukesha; two 8.6 million-gallon ground storage reservoirs in Waukesha; and a 25-mile pipeline that carries treated and subsequently aerated wastewater from Waukesha to the Root River, Duchniak says.

About 2.6 miles of the pipelines — 20 different sections in all — were installed via horizontal directional drilling, using high-density polyethylene pipe. Nearly 32 miles of the pipelines, which traveled through six different Milwaukee suburbs, were installed via opencut excavation.

"Very little property acquisition was required,"

Waukesha Water Utility operators Gus Gentekis (foreground) and Gene Lee swing a new fire hydrant into place.

> **"It was a very difficult, long and arduous process with a lot of moving pieces."**
>
> **Dan Duchniak**

Duchniak says. "Most of the pipelines were built within existing public rights-of-way."

The project was funded by a low-interest, roughly $137 million loan under the auspices of the federal Water Infrastructure Finance and Innovation Act and low-interest loans from the state of Wisconsin's Clean Water Fund Program. Water rates were nearly tripled in order to pay back the long-term loans.

High radium levels

Waukesha's water woes began developing back in the 1970s. At that time, the city obtained all its water from the St. Peter Sandstone Aquifer via 11 wells.

But a geological quirk — a thick layer of shale located in southeastern Wisconsin and northeastern Illinois — prevents water from naturally percolating through the soil and recharging the aquifer. That factor, combined with communities in both states overpumping the aquifer, led to high radium levels in drinking water, Duchniak says.

Because it takes so long for Lake Michigan water and other water sources to percolate and recharge the aquifer, the Waukesha wells were pulling older and older water that had plenty of time to react with minerals and elements in the ground — including radium.

"And radium levels get higher and higher the farther down you go," Duchniak says. "Our radium levels eventually were three times higher than allowed by federal drinking-water standards."

After losing a court battle to change how the federal government determined acceptable radium levels, the city entered into a consent order with the Wisconsin Department of Justice to bring the water into compliance with radium standards.

"This was a long-term sustainability issue as well," Duchniak adds. "We could've treated the radium. But as you pull water from deeper and deeper locations, other issues start to arise, including hitting brackish water with high total dissolved solids."

Installing an expensive reverse-osmosis system to desalinate the water would've resolved that problem. But the reverse-osmosis process wastes about 20% of the water it treats, which in turn would require pumping 20% more water to compensate for that loss, further drawing down the aquifer, he explains.

"So we needed to address the long-term sustainability issue, not just the high radium levels in the water," Duchniak says. "We figured it was better to spend money on a permanent solution."

Long and winding road

So in 2002, city officials began considering their options. Eventually 14 alternatives were proposed, which then were narrowed down to three. And despite the daunting approval process, diverting Lake Michigan water was deemed the best solution.

Despite the water issues, Waukesha was lucky in one respect: It was located in a county (Waukesha County) that straddled the basin divide, which under the terms of the compact made it eligible to apply for a water diversion from Lake Michigan.

The approval process started in December 2015 with the submission of an environmental-impact study to the other seven states. After a full-court press for more than a year, and contending with dissenting environmental groups, the proposal was approved in June 2016.

"It was a very difficult, long and arduous process with a lot of moving pieces," Duchniak says. "At one point, Jeff Scrima (the mayor at the time) and I traveled to four states — Michigan, Ohio, Pennsylvania and Illinois — in four days to meet with governors and their staffs."

Infrastructure construction commenced in December 2020 and was completed in September 2023. The city abandoned all but four of its wells, he says.

"They're available for emergency backup if something catastrophic would happen," Duchniak says.

Lake water arrives

On Oct. 9, 2020, Duchniak pressed a button that started the city's transition from well water to Lake Michigan water, concluding a roughly 15-year journey. The transition alone was a huge task as the utility strove to avoid public health issues, such as stirring up lead and iron particles, Duchniak says.

"To minimize the impact on residents, we came up with a transition plan to slowly and methodically move water through the system," he explains. "That was important because changing the flow of water through a system can kick up a lot of buildup in the pipes, which can create problems."

The utility also conducted a large public information campaign to tell the city's roughly 72,000 residents what to expect during the transition, including temporary conditions such as reddish tap water and a noticeable chlorine smell, he says.

The utility even developed an interactive map on its website where residents could watch the transition's progress in real time.

Residents also were notified they'd no longer need or should optimize water softeners because Lake Michigan water is significantly softer than well water. That

Waukesha Water Utility operators Collin Zimmerman (left) and Gene Lee install a new fire hydrant.

> **"It's also the biggest water project in state history."**
>
> **Dan Duchniak**

resulted in another positive ripple effect: a major reduction of salt discharged into the Fox and Root rivers, he notes.

The transition to Lake Michigan water, which involved moving approximately 50 million gallons of water through more than 300 miles of water mains, took nearly three weeks to complete. The utility received only one complaint about water quality, which reflects the great work done by utility employees, Duchniak says.

"Our employees worked their butts off and did an amazing job," he says. "Everything went off without a hitch — it was very impressive. It was a tremendous effort by our staff."

Problem solved

Looking back, the magnitude of the project — from developing a solution to getting approval from the various states to the massive construction project — is not lost on Duchniak.

"It was a monumental undertaking," he says.

But the results — better quality of life for residents, bolstering economic development and accommodating future population growth — made it all worthwhile. The city, which uses about 6 mgd of water a day, is unlikely to face water problems for the next 100 years, he says.

In addition, using Lake Michigan water will reduce aquifer pumping.

"We're set," Duchniak says. "We're in a really good position with our supplier, the city of Milwaukee, which has an ample and sustainable supply of water. The Great Lakes aren't going anywhere and we're returning the water, so there's no net water loss to the lake.

"This is exactly where we wanted to be when we started this process." ✦

ELIMINATING WATER LOSS

Kansas City makes strides in reducing nonrevenue water through fire hydrant leak detection technology

By Lou Rossetti

An acoustic fixed-base pipe monitoring technology that uses fire hydrants to host multisensor devices has already found more than 30 leaks for Kansas City Water.

Nonrevenue water loss in Kansas City, Missouri, is being driven down by a successful collaboration between the municipality and California-based technology company Orbis. The partnership began in September 2022 with the installation of 150 Orbis SmartCap telemetry leak detection devices on fire hydrants and over 30 leaks have already been found.

The water network in Kansas City comprises 2,300 miles of water pipes and distributes up to 240 million gallons of water a day, serving over 450,000 people. Much of the pipework is legacy infrastructure, installed within busy commercial and residential areas.

The water loss problems from small leaks in the service lines taking water to properties, to large breaks on the distribution mains traversing the city, where water can reach the surface through roads and sidewalks, causing major disruption in busy areas.

The municipality is proactively reducing water loss in the distribution system, not only for visible leaks but by incorporating early detection for leaks hidden deep underground. Existing technologies could not always meet the demands of Missouri's variable weather conditions, or the need of technicians to easily relocate and deploy leak detection equipment at short notice.

Engineers and technicians at Kansas City Water were looking for a more effective leak detection system that was robust and adaptable, and took advantage of existing urban infrastructure to build resilience. They also wanted to make a shift from reactive decision-making to data-led proactive operations by integrating smart water technologies into drinking water infrastructure systems.

Successful collaboration

Having demonstrated the capability of Orbis Smart Caps, a second order was placed in September 2023, and Kansas City Water now has 150 devices in operation in the city as part of a proactive campaign to reduce leakage on the water network. To date they have been placed in the popular Plaza area in downtown Kansas City and in a residential area, acting as initial deployment sites.

Alongside the installed SmartCaps, Kansas City Water technicians have been trained on the Orbis cloud-based Streamline portal, where they can regularly check and identify warnings for potential leaks coming from the installed devices.

"Since the SmartCaps have been installed, we have found 30-plus leaks," says James Binkley, manager for meter field services at Kansas City Water. "The ease of deployment and the plug-and-play strength of the SmartCaps has been a huge positive for us as we can strategically plan when and where to place them."

The SmartCap's pinpoint accuracy enables Kansas City Water repair teams to quickly locate underground leaks and, once an area has been fully surveyed and all existing leaks, as well as any smaller and emerging leaks, have been found, it is possible to easily relocate the caps if needed.

Telemetry data

The Orbis SmartCap is an intelligent fire hydrant and pipe monitoring device that enables remote leak detection by providing intelligent network data from a multi-sensor. The device can convert any fire hydrant, be that wet or dry barrel hydrants or legacy hydrants, into a smart-enabled asset simply by replacing the pumper nozzle cap.

Once installed, the SmartCap emits a secure wireless signal to the cloud with algorithms enabling the SmartCap sensors to interact and connect with each other. SmartCaps use GPS to show accurate leak locations with time stamps capturing acoustic data.

Data uploads from the connected SmartCaps allow analysis of sounds for accurate pinpointing of leaks. The Streamline portal and dashboard provide actionable alert notifications and identify locations for corrective action to enable near real-time, auto-generated reporting for network efficiency.

Alert notifications on parameters including leakage, tamper, flow and pipe conditions can be viewed on the portal online or through an application programming interface on a utility's in-house database. The portal gives a distance, in feet, from the hydrant, making pinpointing exact locations easier.

This actionable intelligence enables utilities and municipalities to manage water network operations efficiently and effectively.

Cost savings

Drinking water systems in the U.S. currently lose at least 6 billion gallons of water every day and a water main break occurs every two minutes, according to figures from the American Society of Civil Engineering, which says the country lost an estimated $7.6 billion of treated water in 2021 due to leaks.

Additionally, for Kansas City Water, some of the potable water leaking from water mains makes its way into the sewer system by infiltration. This adds to the volume being treated at the wastewater treatment plant, increasing costs and increasing strain on the plant.

Implementing Orbis SmartCaps has achieved significant water and cost savings by alerting Kansas City Water to leaks that would otherwise have continued for weeks, even months.

The SmartCap's remote monitoring capability means no labor resource is required on site to detect the leaks. However, the biggest savings come from the prevention of future water losses and by lowering the risk of major infrastructure damage and the costly legal claims that can result from a water main break.

"The team members who are trained on Streamline portal can look for the alerts presented on the network map and can even home in and listen to individual SmartCaps to determine risk and whether to escalate it into action," says Nicholas Wolf, utility superintendent for leakage investigations at Kansas City Water.

"The Streamline portal can easily pick up the difference between high water usage versus line breaks, in a way that was not possible before. All of this information and data can be interpreted, analyzed and conveyed to maintenance crews."

Orbis supports Kansas City Water with technical support where queries arise, with follow-up meetings and on-hand emergency contacts made readily available. Training on the Streamline portal is also available to ensure the software's use is maximized and expanded as software developments are made.

Kansas City Water says the municipality expects to expand the use of SmartCaps once the results from rollout of the second order become evident. ✦

Lou Rossetti is the senior vice president of sales in North America at Orbis Intelligent Systems.

Product Spotlight

Manhole camera speeds up inspections and streamlines condition assessment

By Dodie Wiesner

Creating a proactive asset management program requires extensive organization, forethought and a reliable suite of tools and software that enable efficiency and safety. RinnoVision's latest manhole inspection camera – the RV-MAX 360 – was built for optimizers and streamliners, boasting remote coding options for condition assessment, supported by 4K video and 360-degree coverage.

New to the RV-MAX 360, RinnoVision's coding services could be used for a smaller municipality or contractor without the in-house staff to enter in the data themselves, or for a larger organization looking to streamline operations, says General Manager Félix Ladouceur.

Once a camera operator records an inspection video, which can also be livestreamed, Ladouceur says it's ready for coding. Simply take the files, preset to the high-compatibility MP4 video format and automatically geotagged to the manhole's location, and upload the files to the website. RinnoVision's team of analysts then complete a comprehensive condition assessment report according to NASSCO's PACP or MACP standards at an affordable cost.

Third-party coding is just one way RinnoVision built efficiency into the RV-MAX 360's design philosophy, according to Ladouceur. A 360-degree view saves time spent on recording, while the entire job can be done by one operator, no confined-space entry required.

"The easier we can make it on the operator's workflow, the less time they have to spend when conducting their inspections or doing anything related to that process," Ladouceur says. "[RinnoVision] video inspection systems are portable, easy to use, easy to carry around, and allow a single operator to complete the inspection in under three minutes."

Footage is rendered in 4K HD video output, making it simpler than ever to catch and identify manhole defects. Good lighting is crucial as well, so RinnoVision engineers added six lighting options to the RV-MAX, allowing for optimal views.

"Having a good, clear video image that's properly lit – because that's a big part of the process too – allows us to ensure that we get a good sort of defective manhole wall contrast that any defect will really pop out well for the operator to notice," Ladouceur says.

Estimated to have a lifespan of at least five years, the RV-MAX 360 is IP68-certified and is currently undergoing the U.S. Standard Certified Drop Test. "Everything is done out of Quebec, Canada, where we have tough, humid winters [and] hot summers," Ladouceur says. "So we've always developed and beta-tested each iteration of the product in those extremely hard conditions to ensure that it would meet the highest ruggedization standard that we can find." **833-230-4040; www.rinnovision.com**

SPECIAL REPORT

OZ Lifting Products stainless series

OZ Lifting Products' stainless steel range includes chain hoists, lever hoists, trolleys and beam clamps all designed for use in corrosive environments. The centerpiece of the line is the stainless steel chain hoist, which is lightweight — meaning minimal effort is required to lift loads — yet durable enough for industry's most demanding applications. The hoists feature fully enclosed gearing; a fully machined lift wheel; a weatherproof holding brake; roller bearings on all gears and shafts; and forged stainless steel hooks with safety latches. Chain hoists, like the trolleys, are available in 1/2-, 1- and 2-ton capacities. The stainless push beam trolley fits most I-, S- and W- beams and has precision ball-bearing trolley wheels. The beam clamps are available in 1- and 2-ton capacities. All products in the line are made from 304 stainless steel and come with individual test certificates and serial numbers.

800-749-1064; www.ozliftingproducts.com

Pulsafeeder Pulsatron X Explosion metering pumps

Pulsafeeder's Pulsatron X explosion-proof-rated diaphragm metering pumps' hazardous location ratings provide exceptional durability to manage internal explosions, enabling dependable and accurate chemical metering. Pulsatron X meets the requirements of Class I, Div 1, Groups C, D, T5, Class I, Zone 1, Group IIB T5 as well as being NSF/ANSI 61 and 372 for safe drinking water. The Pulsatron X rugged, cast aluminum housing was designed for high corrosion resistance and integrated inputs into the pump's control panel, eliminating the need for an extra device and external enclosures. With either a 4-20mA input or an external pulse input, the Pulsatron X is ideal for applications that require remote control of the dosing rate. The pumps offer flow capacities up to 600 gpd and pressure capabilities up to 300 psig. Pulsatron X is built on the foundation of the Pulsatron Series of pumps known for few moving parts, being easy to maintain, and have quick and easy repair parts to provide years of dependable service.

800-333-6677; www.pulsafeeder.com

Vermeer RTX1250 ride-on tractor

The Vermeer RTX1250 ride-on tractor has been updated with several improvements for increased efficiency and performance. Enhancements include updates to the tracks, axles, plow valve and retention pins, cab roof and headliner, as well as the auto stabilizer feature for the rockwheel attachment. The RTX1250 is powered by a 127hp Deutz TCD3.6L diesel engine and can be outfitted with a range of attachments for efficient installation of gas, fiber, water and electrical utilities. The RTX1250 can operate as a trencher, rockwheel or vibratory plow with interchangeable attachments. These can be switched out in as little as an hour, offering options such as a backhoe, backfill blade or reel carrier attachment for the front of the machine and a vibratory plow, rockwheel, sliding offset rockwheel, sliding offset trencher or a trencher for the back end.

888-837-6337; www.vermeer.com ✦

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

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

STUDYING STYRENE

NASSCO research is moving on to CIPP cure water and its effects on treatment works

By Sheila Joy

Since 2016, NASSCO has supported independent research to better understand the effects, if any, of styrene used in the cured-in-place pipe process. Research phases 1, 2, and 3 focused on air emissions resulting from steam cure.

The current Research, Phase 4, focuses on cure water and potential impact of styrene on publicly owned treatment works. Partnering with Buried Asset Management Institute – International and headed up by Principal Investigator Dr. Tom Iseley, P.E., and Lead Research Engineer Dr. Hanouf M. Alhumaidi, Phase 4 is broken out into three separate Tasks:

- Task 1: International literature review
- Task 2: Survey among POTW
- Task 3: Lab studies and white paper

Tasks 1 and 2, now completed, conclude that there is no literature on the topic of CIPP styrenated cure water on POTW and determine a need to test wastewater quality and identify the styrene concentration in wastewater for POTW. Below is an excerpt from the final report:

"The findings of Task 1 of this NASSCO Phase 4 Study indicate that existing studies/reports did not adequately capture any documentation of CIPP cure water discharge in wastewater treatment plants. The comments received from industry experts using both direct emails, and questionnaire Task 2 results indicate no direct impact of CIPP cure water discharge on wastewater treatment plants. Task 3 includes chemical testing of styrene concentrations in wastewater treatment plants and is expected to resolve all concerns related to CIPP impact on WWTP."

The study recommendations for future research and testing:

1. It is recommended that NASSCO perform additional sampling, studies and evaluations of different factors that impact CIPP styrenated cure water during CIPP installations and its effect on wastewater going into POTW.
2. It is recommended that NASSCO perform additional sampling, studies and evaluations of different CIPP installations including curing with hot water, steam or ultraviolet and their effect on wastewater going into POTW.
3. Discrepancies in the literature in reported testing protocols and practices for CIPP styrenated cure water indicate a necessity to suggest a unified testing procedure, using appropriate engineering and testing principles to assess the true implications of CIPP rehabilitation/maintenance technology in culvert and storm sewer.
4. Discrepancies in the literature in reported incidents of CIPP styrenated cure water indicate a necessity to re-evaluate these incidents and further examine whether these contaminations are caused by CIPP rehabilitation/maintenance or other causes such as contractor errors, improper installations, testing errors, etc. for culvert and stormwater.
5. It is further recommended that the underground industry establish styrene monitoring stations at key influence locations of WWTP where significant CIPP work is being done.

As a result of these recommendations, Task 3 of the study is now underway, and results will be available soon.

Full reports and recommendations may be found at nassco.org/safety. ✦

TRAINED TO SAVE

There are many benefits to having a CPR training course in your workplace

By Ronnie Freeman

There are more than 356,000 out-of-hospital cardiac arrests annually in the U.S., and nearly 90% of them are fatal. Which means only 10% are getting the immediate help they need to survive this medical emergency. There are roughly 350,000 resuscitation attempts outside hospitals each year in the United States, with average survival rates of 5-10%. Some of these cardiac arrests are happening in our workplaces. Since the survival rate is so poor, it means fellow employees are not responding in time if they respond at all.

It can be a frightening experience to see someone have a medical emergency, but knowing how to respond and doing so in a timely manner is key to helping someone survive. This is where training comes into play. Besides the workplace, a cardiac arrest can happen at home, at a restaurant, the mall, an airport or anywhere people are gathered. Having this vital training and the confidence to act can save lives.

CPR stands for cardiopulmonary resuscitation. It can help save a life during cardiac arrest, when the heart stops beating or beats too ineffectively to circulate blood to the brain and other vital organs.

There are several benefits to having a CPR training course in your workplace.

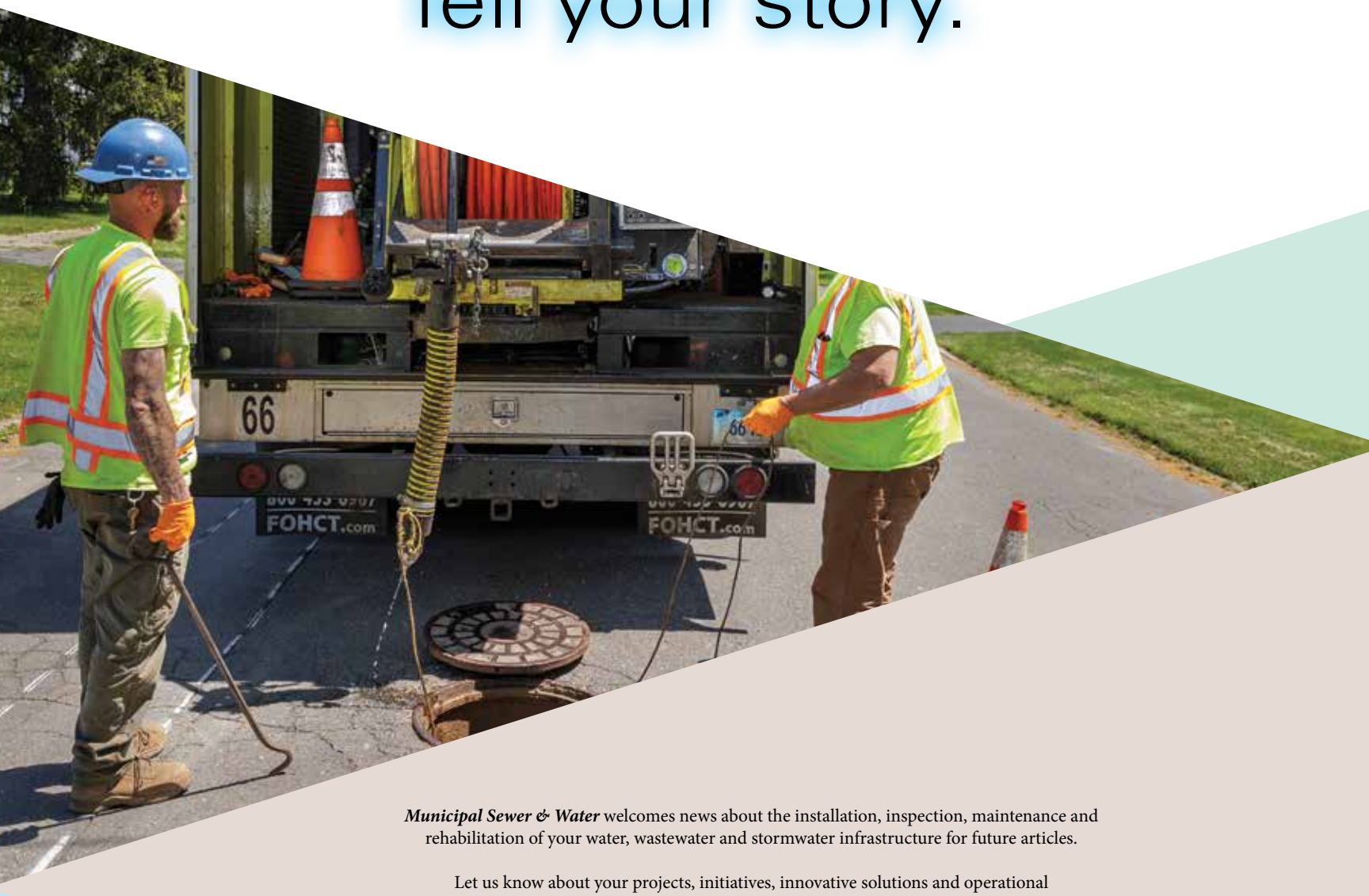
- Confidence to respond — employees will feel empowered to act and will know what to do if necessary. Many employees don't respond because they don't know what to do except to call 911. The minutes it takes an EMS to arrive are lowering the chances of survival if no one does anything.
- Knowledge — training provides the knowledge employees need to respond as well as a knowledge of the vocabulary used in CPR such as compressions, breaths, head tilt-chin lift and AED.
- Surviving the attack — survival rates are hard to pin down due to several factors like how quickly someone starts CPR and the age and overall health of the victim, but without CPR the chance of survival is zero, so a confident, knowledgeable employee can initiate CPR as soon as possible and can double or triple a victim's chances of survival.
- Improves workplace morale — designated CPR training gives employees a sense of safety at work. They know someone is trained and can respond should the need arise. In fact, the more employees trained, the better. Especially if you have several locations or employees in the field.
- CPR prevents brain death — The heart stops flowing blood to the brain and other vital organs during sudden cardiac arrest. The patient becomes unconscious as the blood supply to the brain decreases. Without the proper flow of blood, brain damage can occur in as little as three minutes. There is the possibility of permanent brain death after nine minutes without blood flow.

There are several organizations that can provide CPR training such as the American Heart Association, the National Safety Council and the American Red Cross. Local colleges and fire departments are other good sources for getting started. These organizations can come in and conduct training at your request. Some have train-the-trainer programs as well.

This is the kind of training we hope nobody ever needs, but if there is a need it can save a life, maybe the life of a loved one or close friend. It is well worth the investment to have regular and ongoing CPR training in the workplace. ✦

Having this vital training and the confidence to act can save lives.

It's your magazine. Tell your story.



Municipal Sewer & Water welcomes news about the installation, inspection, maintenance and rehabilitation of your water, wastewater and stormwater infrastructure for future articles.

Let us know about your projects, initiatives, innovative solutions and operational improvements. We're always looking for great examples of quality work to share with the rest of the industry. Your successes could be the inspiration your fellow operators need to elevate their own utilities.

MUNICIPAL SEWER & WATER

Send your ideas to
editor@mswmag.com

 By Craig Mandli

FLOW CONTROL AND MONITORING

Data Loggers and Management

CAS Dataloggers TL400-I

CAS Dataloggers' TL400-I level transmitter is designed for nonintrusive level and volume measurement in tanks. It utilizes low-power infrared laser time-of-flight measurements to determine the exact distance between the sensor and the surface of the contents of the vessel. It can be used to measure liquids such as water or solids like grains. An onboard processor provides advanced filtering capabilities to accurately measure stirred liquids and the ability to calibrate the output in volume with a 20-point linearization to accommodate irregularly shaped vessels. The TL400 can be easily configured using its Bluetooth interface and the Novus SigNow software for Windows PCs, iOS, and Android devices.

800-956-4437; www.dataloggerinc.com

Hermann Sewerin GmbH SePem 155

Systematic monitoring of a water network with **SePem 155** data loggers from **Hermann Sewerin GmbH** helps reliably identify existing leaks and catch new ones much earlier and faster than with conventional methods. In a pipe network, water loss caused by a number of smaller leaks added together is likely to be considerably higher than the loss caused by a few spectacular pipe bursts visible on the surface. Noise loggers are capable of reliably detecting both types of leak site — slowly growing and spontaneously occurring. These data loggers are ideal for mobile use and can also be used for the stationary monitoring of water supply networks. They provide fast and reliable results and can also be reliably operated by less experienced users. The measuring times and periods of radio activity are freely programmable.

888-592-9916; www.sewerin.com

Flow Control/Monitoring Equipment

Orenco Systems OLS Control Panels

OLS Control Panels from **Orenco Systems** are designed and built for an array of municipal pumping applications including wastewater lift stations, stormwater pump stations, dewatering pump control, sludge pumping and freshwater boosting. The panels are available with Orenco Cloud service, which eliminates the need for a separate SCADA system. As another option, the panels can be connected to an existing SCADA system. Parameters can be configured with our user-friendly startup wizard via a remote computer or tablet or using the included touchscreen. Engineers will 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. The panels are weatherproof and UL 508A listed. They also include service-rated circuit protection, phase and voltage protection, and level controls.

877-257-8712; www.orencocontrols.com

YSI, a Xylem brand MJK MagFlux 7200

The **MJK MagFlux 7200** from **YSI, a Xylem brand,** is an electromagnetic flowmeter designed for optimal performance in drinking water and wastewater applications. Utilizing Faraday's law, this mag meter ensures precise and reliable flow measurement, enhanced by its automatic self-cleaning function that prolongs electrode cleanliness and operational dependability. Select configurations are NSF-61 approved, allowing for safe deployment in applications that have direct contact with potable water. It delivers high accuracy even at low flow rates, with an accuracy of 0.25% down to 0.6 feet per second. Designed for easy installation in challenging environments, it requires minimal straight pipe of three times the nominal diameter upstream and two times downstream for full accuracy, making it suitable for various complex setups. The system offers flexible configurations for its display, converter and flowmeter. The display unit can control up to four flowmeters and be positioned up to 1,000 meters from the sensor, accommodating a wide range of installation requirements.

937-688-4255; www.ysi.com

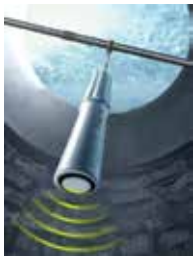
Sensors

Aquarius Spectrum iQ100B

The **iQ100B** wireless acoustic sensor from **Aquarius Spectrum** enables listening to the pipe, performing leak survey and identifying leaks. It seamlessly connects to the cloud via a user-friendly Android or iOS mobile application on your smartphone or tablet. It enables hearing the audio recording in real time using the registered audio speaker (the local speaker or a wireless headset). Collected samples can be uploaded, viewed, and analyzed in a designated module in the AQS-SYS portal. The recorded audio is sent to the cloud for in-depth analysis, which classifies the audio as Leak/No-Leak, reducing dramatically the effort of the back-office man-in-the-loop. It has a robust IP68 rigid plastic enclosure, meeting the safety, radio and environmental standards (UL94, CE/FCC, IP68). The internal rechargeable battery has the capacity to last for five complete survey days between recharging (with an average survey of 8 hours per day). An RGB LED indicator visually indicates states of operation by color and sequence.

www.aqs-systems.com

Eastech Flow Controls iTracking



By digitally integrating low-cost smart sensors with high-powered auto-analytical software, **iTracking** from **Eastech Flow Controls** delivers precision detection of I&I down to a set of adjacent manholes. Tedious and time-consuming interpretation of data is totally eliminated with its Cloud-based Automatic Analysis and Reporting features. Click a button, and results reports in PDF format are instantly presented along with on-demand animated videos highlighting the exact location of the I&I. At the heart of the system is a smart sensor standardly equipped with both Wi-Fi and cellular capability. iTracker sensors can be deployed in just 20 minutes without the need for confined space entry. Installation becomes so quick that a single two-man crew can install an entire high-resolution network of smart sensors in a sin-

gle day. Once installed, all recorded data is efficiently managed through the Eastech Cloud, allowing users to quickly upload, analyze and "video" view the performance of their collection network.
800-226-3569; www.smartwastewater.com

InfoSense SL-RAT

The Sewer Line Rapid Assessment Tool, or **SL-RAT,** from **InfoSense** is an acoustic inspection technology used to screen for blockages in small-diameter gravity sewers. It is a highly portable on-site assessment tool that utilizes transmissive acoustics to safely provide a very fast and low-cost understanding of blockage conditions. Hundreds of utilities around the world utilize the SL-RAT to rapidly screen collections systems and better deploy costly cleaning and CCTV resources. This technology offers real-time blockage assessments in 3 minutes or less with no flow contact.
877-747-3245; www.infosense.com

Software

ADS Environmental Services SLiiCER Software

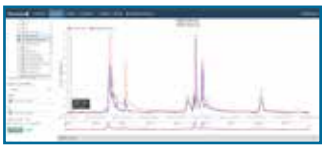
Identifying and managing I&I is a multifaceted issue that requires not only reliable methods for monitoring and capturing flow and rainfall information, but also comprehensive analytics for understanding both the big picture and the specific issues requiring action. The **SLiiCER Software** suite from **ADS Environmental Services** seamlessly pulls together all relevant I&I data in one place and gives system wastewater professionals a full set of analysis tools for creating studies, integrating rainfall events in relation to sewer performance, evaluating dry-day versus wet-day performance, mapping diurnal curves, and evaluating capital improvement rehab projects aimed at reducing I&I. Easy navigation between various tabs provides maximum flexibility for isolating and/or combining data, with visualization in a variety of graphical displays, including Dry Day Hydrographs, Storm Event Hydrographs, and Q-vs-i graphs, and the ability to control settings and vary assumptions.
877-237-9585; www.adsenv.com

Aquatic Informatics Rio

Rio from **Aquatic Informatics** is a compliance and operations data management solution for water and wastewater professionals. It helps manage operations, compliance, data and reporting to stay ahead of risk and protect a community's water supply. It can be used to centralize and organize compliance and operations data in a secure, online platform for a holistic view of the water system — integrated with electronic lab transfers and field data captured through mobile devices. It can also be used to unlock insights with data visualization and dashboards for optimized analysis and empowered decision-making. Its use can help ensure data accuracy with the calculation validation engine to produce reliable, accurate reports for regulatory requirements or internal operations. It also collects data remotely — while connected or offline — for improved visibility without any duplication of effort. It lets utilities achieve efficient, proactive operations by reviewing and analyzing data faster, supporting compliance and more informed decision-making.
877-870-2782; www.aquaticinformatics.com

(continued)

infinitii ai face pro



infinitii ai face pro, with "face" standing for "flowworks advanced calculation engine," takes advanced calculations and related automation to another level. It has the ability to copy and paste Python, or R scripts and run them in real time against incoming data. This means that complex calculations including machine learning algorithms can run systemwide almost instantly. Use cases for this calculation engine include forecasting, anomaly detection, predictive maintenance and failure prediction. The types of advanced calculations easily performed include Soil and Water Integrated Model calculations that track and predict climate and land use change impacts at a regional scale, and evapotranspiration calculations used to estimate soil-moisture storage based on precipitation deficit and maximum capacity.
778-379-0275; www.infinitii.ai

iWater infraMAP Cloud

infraMAP Cloud from **iWater** is a real-time mobile GIS solution that allows seamless data collection and updates to a utility's asset management program. It integrates pumps, lift stations, manholes and sewer mains to valves, hydrants, leaks and meters, bringing together field crews, management, GIS and engineering into a commercial off-the-shelf product. Key features include red-lining, reporting, work orders, asset inspection forms and work history records. It connects the office with your field crews and delivers the data they need when they need it.
949-768-4549; www.iwater.org

PRIMEX icontrol

PRIMEX's icontrol is a solution for operators seeking all the benefits of a full automation and control system without the expense and hassle of owning and maintaining these technologies. The cloud-based solution provides full SCADA functionality with secure remote access to an existing control infrastructure through a managed data center. There is no SCADA-related hardware, software or licensing to buy, manage or maintain. It interfaces to an existing local PLC control and telemetry network to offer accessibility, full SCADA/HMI, process control, monitoring and alarming, data and reporting and asset management. Process information is transferred via secure data connection to the data center. Each client then has secure access to its individual system from nearly any internet-enabled device.
844-477-4639; www.primexcontrols.com

Sensus - a Xylem brand Pressure Profile

Pressure Profile from **Sensus - a Xylem brand** provides greater system visibility, empowering a utility to proactively manage their water distribution system. It goes beyond the limits of acoustic monitoring for leak detection by offering greater insight, comprehensive data and accessible customer service. It works seamlessly with the Sensus FlexNet communication network and leverages data from Sensus smart meters and sensors as well as other third-party sensors. It provides operational alerts and awareness based on thresholds designated by the utility — optimizing and adapting to operational needs. The ESRI map-based graphical interface allows the user to easily assess the health of the network and respond promptly to adverse conditions. Service crews can quickly investigate and resolve repair problems, often before or without the customer having to contact the utility. Additional features include user-configurable alarms, custom grouping for zone management and three years of data storage.
800-638-3748; www.sensus.com

SmartSights SmartBundle

SmartBundle from **SmartSights** provides a full-field view of operational conditions from anywhere, allowing users to make real-time decisions. The software offers insights on process data specifically tailored to key roles in organizations, from operators to management to compliance. Benefits include extending reach for mobile access giving users streamlined, focused context to make smart decisions from anywhere; improving productivity with visualization of the data that matters most; increasing uptime with holistic real-time process views; and simplifying rationalization of data to focus on the needed metrics. The software's SmartFocus feature includes snippets of XLReporter information to monitor critical data without having to search. Users can also manage processes' performance in real time and compare historical analytics to improve efficiencies. Through customizable widgets that tell the story of the critical data, users can expand their HMI reach. It enables operations teams to monitor and respond to changing process and asset conditions from anywhere.
512-326-1011; www.smartsights.com ✦

WORTH NOTING

PEOPLE/AWARDS

The **Joachim Drain Drainage District** received a $415,000 grant from the state of Michigan's Clean Water State Revolving Fund. The drainage district is a stormwater system in Pontiac, and the project involves the rehabilitation of existing storm sewer pipes and the rain outfall structure.

The town of **Spring Lake** received a $750,000 grant from GoldenLEAF, a North Carolina nonprofit organization that provides grants to local government entities. The funds will help improve storm drain infrastructure in the Deerfield subdivision that was damaged during hurricanes Matthew and Florence.

The city of **San Diego** received a $5 million grant as part of the Biden Administration's Bipartisan Infrastructure Law. The funds are designed to help reduce neighborhood flood risk and bolster the region's defenses for increasingly intense rain events. The grant was part of $37 million in funding the city received; the other $32 million was a low-interest loan targeting the same stormwater relief efforts.

CALENDAR

Oct. 5-9
Water Environment Federation Technical Exhibition and Conference, Morial Convention Center, New Orleans. Visit weftec.org.

Oct. 9-11
Southeast Stormwater Association Annual Conference, Chattanooga Marriot Downtown, Chattanooga, Tennessee. Visit seswa.org.

Oct. 21-23
California Stormwater Quality Association Annual Conference, SAFE Credit Union Convention Center, Sacramento. Visit casqa.org.

Oct. 22-24
Tennessee Stormwater Association Annual Conference, Montgomery Bell State Park, Burns. Visit tnstormwater.org.

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

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

Apr. 8-10
Center for Watershed Protection National Conference, (site TBA), Puerto Rico. Visit cwp.org.

May 18-22
Association of State Floodplain Managers National Conference, (site TBA), New Orleans. Visit floods.org.

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

Jun. 8-11
American Water Works Association ACE25 Conference, (site TBA), Denver. Visit awwa.org.

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

By Craig Mandli

In-line check valve prevents stormwater backflow

Problem:

A stormwater outfall on the Hampton River in Virginia was frequently affected by tidal water bringing in silt and debris, which blocked the existing metal flap gate valve and caused it to get stuck in the closed position, preventing proper operation and increasing the risk of flooding and backflow.

Solution:

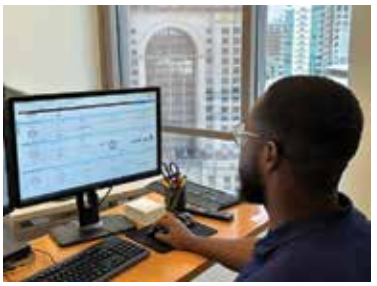
To address this issue, officials at Hampton University consulted a sales engineer about DeZURIK's Red Valve line of backflow prevention valves for stormwater. A 30-inch Check-Mate UltraFlex In-Line Check Valve was chosen for its effectiveness in preventing backflow, its ability to clear itself of mud and silt, and its low headloss, which ensures near 100% flow capacity. The installation was planned for low tide to avoid the need for dewatering and was completed quickly and easily without requiring any modifications to the existing pipe or structure.

RESULT:

The check valve was inserted and clamped into place without any issues, fitting perfectly inside the outfall. The valve has functioned reliably despite being covered in mud and debris. It is self-cleaning, resistant to corrosion and not prone to freezing or getting stuck like the previous flap gate. The robust unibody construction of the valve, made from multiple layers of elastomers and reinforced plies, ensures a long service life with minimal maintenance. This solution resulted in significant savings in both installation time and operational costs, providing a reliable and cost-effective solution for stormwater management.

320-259-2000; www.dezurik.com

Amplifying the impact of AMI with asset and operations management



Problem:

The Town of Surf City, North Carolina has approximately 5,000 full-time residents and 4,000+ service connections in its water system, a population that can spike considerably during the summer. This variability makes it critical to properly account for water usage over specific periods of time and ensure that billing is both accurate and timely. However, the town's aging AMR system was making it difficult to achieve this goal. This prompted the town's decision to replace its legacy system with Advanced Metering Infrastructure (AMI) that would transform reading and billing processes and reshape customer service and other operations. The town also chose to implement an asset and operations management program to maintain, monitor, and manage the system. This includes making ongoing technology upgrades, monitoring meter performance, and ensuring any issues are addressed promptly.

Solution:

USG Water Solutions' smart metering services put the benefits of AMI within the reach of small and mid-sized communities with a full turnkey solution. USG maintains every aspect of the town's AMI system from meter to AMI software and everything in between. USG also dedicates full-time resources to oversee the system over its lifetime and resolve any issues that may arise, freeing up the town's manpower to handle other responsibilities.

RESULT:

Smart metering has led to a reduction in non-revenue water, accurate and prompt billing and alerts about usage anomalies, proactive customer service and improved resource management with existing staff.

855-729-2305; www.usgwater.com ✦

Save the Date!

CONFERENCE: February 17-20
EXPO HALL: February 18-20
Indiana Convention Center

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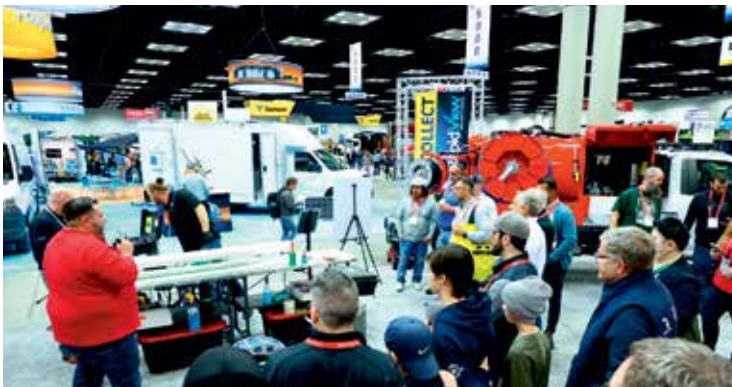

Vacuum Truck Rentals converts fleet to Vacall units

Vacuum Truck Rentals, headquartered in Richland, Mississippi, has converted its entire fleet of vacuum and jetting rental units to Vacall brand AllJet-Vac, AllExcavate, AllJet and AllVac machines. Vacall machines are designed, manufactured, sold and supported by Gradall Industries in New Philadelphia, Ohio. Gradall is wholly owned by the Alamo Group.

AWWA awarded EPA grant to bolster water workforce leadership

The U.S. Environmental Protection Agency has awarded the American Water Works Association a $852,000 grant to support the Transformative Water Leadership Academy, a collaborative effort between AWWA and WaterNow Alliance that cultivates and develops the next generation of water utility leaders. The TWLA's 10-month, cohort-based experiential leadership development program prepares water leaders to address emerging water challenges through the foundations of sustainable community leadership.

Have a story idea?

Email us at editor@mswmag.com

Greg Hebert

Archie Beard

Simflo names two new sales directors

Greg Hebert, Simflo's new director of sales for its engineered products group, will be responsible for leading the company's outside sales team, covering the municipal, industrial and commercial markets. Hebert previously served as regional sales manager — engineered products group for SIMFLO. SIMFLO also announced the appointment of Archie Beard as director of sales for its standard products group. In this role, With over 40 years' experience, Beard will spearhead the sales strategy and execution for SIMFLO's standard products group, driving revenue growth across the company's standard products segment.

Cory Kniepp

Patrick Hogg

Nidec/U.S. MOTORS announces two senior staff promotions

Nidec's U.S. MOTORS division promoted two longtime staffers to senior roles. Cory Kniepp is now director, strategic planning and marketing operations, and Patrick Hogg is senior marketing director, industrial OEMs and distribution. In his new role, Kniepp will support growth initiatives, collaborating with senior management in shaping business strategy and conducting data analysis to ensure continued alignment with goals. Hogg will continue to lead the company's industrial pumping, distribution and general industry markets, along with a stronger focus on business development for these and other growing markets in the industrial segment.

Metro Water Recovery receives flows from Second Creek Pipeline

Brighton, Colorado-based Metro Water Recovery's Northern Treatment Plant has begun receiving flows from the Second Creek Pipeline, an infrastructure investment and future planning along the northern Front Range. After years of preparation that included a complex permitting process, design and construction, the new pipeline connects to the existing South Platte Pipeline and conveys wastewater flows to the Northern Treatment Plant in Brighton. This collaborative effort has been planned since 1982, when the Denver Regional Council of Governments identified the need for clean water facilities in the northern metropolitan region. The Second Creek Pipeline is the largest transmission project in Metro's 60-year history.

Orbis signs U.S. distribution partnership with Core & Main

Orbis Intelligent Systems announced a national distribution partnership with Core & Main. Orbis and Core & Main are partnering to enhance water network performance and efficiency through the SmartCap technology. This acoustic fixed-base pipe monitoring system, housed in a fire hydrant cap, uses real-time data to detect leaks and reduce nonrevenue water loss, providing a crucial role in modern water management.

Jean DellAmore

Jean DellAmore joins ARI-HETRA as vice president

Sharonville, Ohio-based ARI-HETRA, a provider of heavy-duty vehicle lifting and support equipment, has appointed Jean DellAmore as vice president. DellAmore, formerly with Stertil-Koni, brings over 20 years' industry experience and a proven track record of driving growth and innovation. ✦

CLASSIFIEDS

see photos in color at www.mswmag.com

JETTERS-TRAILER

The HotJetII® is a best-selling hot- and cold-water drainline cleaner featuring a 35hp Vanguard engine by Toyota and delivering 10gpm @ 4,000psi that cleans drains up to 300' and 12" in diameter. The HotJet II® is American made using nonproprietary parts for affordability and ease in serviceability making its return on investment truly impressive. Prices subject to change. Financing available.Contact us for current pricing and availability. **800-624-8186; sales@hotjetusa.com; www.hotjetusa.com** (MBM)

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