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MAKING BETTER CONNECTIONS

Hamilton Water's sewer inspection program tracks down undocumented cross connections and cleans up its system

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Donald Young
Wastewater & Stormwater Superintendent
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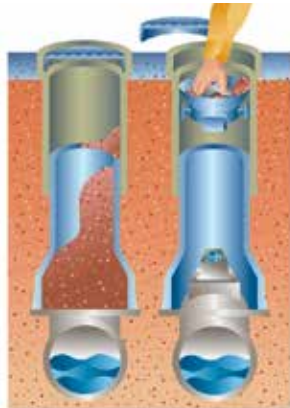
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Luke Laggis

CUTTING THROUGH THE CHATTER

The information you share might be as important as the services you provide

The internet is an incredible thing. It's the greatest collection of information ever created, and it's fully accessible from anywhere, anytime. In many ways, it's become our primary source of information — everything from recipes to how-to videos to World War II maps. It's the answer to every trivia question ever asked.

It took me 13 seconds to search and find out that it was season 5, episode 3 of *The Office* in which Michael took Holly to Cooper's Seafood for a "business-romantic" lunch. That was the show's 75th episode overall, titled "Business Ethics." It originally aired on Oct. 9, 2008, to 8.99 million viewers. It was written by Ryan Koth and directed by Jeffrey Blitz. At the restaurant, Michael orders a bowl of chowder and the lobster feast for two. Holly orders a salad. While the exterior of Cooper's — a real restaurant in Scranton, Pennsylvania, where the show is set — is shown in the episode, the inside scenes were filmed in Los Angeles.

While the internet can answer most any question that comes up, it also provides a vast collection of misinformation, conspiracy theories and subversive opinions.

The fluoride debate — whether it should be in our drinking water — is a great

example of an issue where you can find endless information to support basically anything you want to believe.

Fluoride is a toxic waste product? Sure. The difference in tooth decay levels among those with fluoridated water versus without? Dramatic. Fluoride in public water is an affront to our liberty? Stand up. Fluoride exists naturally in water? Indeed.

In the "Fluoride" episode of *Parks and Recreation* (season 6, episode 8), the always-second-rate community of Pawnee has an opportunity to merge its water supply with the higher-class — and constantly feuding — neighboring community of Eagleton. Pawnee's water has never been fluoridated, which creates issues. The always-do-gooding councilwoman Leslie Knope pushes for the merger and fluoridation, while councilman Jamm, forever her nemesis, protests because it will mean less business for his dental practice. Local residents voice a variety of facts and misinformation.

The episode paints the anti-fluoride crowd mostly as fools compared to the righteous side of the debate. The reality is more nuanced, but facts should speak for themselves. The truth should be easy to find, whether or not you want to believe it.

Regardless of where people stand on this issue or any other, they all made their way to that point through the information they gleaned, much of it likely online.

Your job isn't to sell any viewpoint, it's to serve your communities. A growing part of that is the education and outreach you provide so that the people in your communities, those who live next to you, who play an equal role in democratic decision-making, and even those with soft teeth like Michael Scott (referenced in S. 4, E. 13; S. 5, E. 11; and S. 5, E. 25) can form their views based not only on accurate information, but the ready availability of that information.

We're all better off when people understand and buy into the work you're doing to serve your communities. Let them know about it.

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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MONEY TALKS

Water Efficiency Grant Program

The Metropolitan Council in the Twin Cities created the Water Efficiency Grant Program to conserve groundwater and protect water sources for future generations. Partnering with the EPA's WaterSense program, the initiative promotes water-saving devices and practices, saving 200 million gallons annually.

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OVERHEARD ONLINE

“The workforce crisis impacting the engineering and public works communities is restricting the impact of landmark federal infrastructure legislation and holding community development back at a time when it’s needed most.”

—**Engineering and Public Works Leaders Unite to Tackle Workforce Shortage**
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UNDERGROUND INFRASTRUCTURE

Report Shows Drop in Damages

The Common Ground Alliance's 2023 DIRT Report introduced the CGA Index, showing a six-point drop in underground utility damages from the 2022 baseline. While this progress is promising, the report emphasizes the need for accelerated efforts to achieve the industry's goal of a 50% damage reduction within five years.

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TANK OF THE YEAR

Winner Announced

The 2024 Tank of the Year competition, presented by Themec Company Inc., recently recognized a water tank in Grand Prairie, Texas, for its artistic design and community significance. The tank features a three-part mural by artist Eric Henn showcasing local landmarks while serving a piece of critical water infrastructure. mswmag.com/featured



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Nick Winters



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MAKING BETTER CONNECTIONS

Hamilton Water's sewer inspection program tracks down undocumented cross connections and cleans up its system

By James Careless

Hamilton Water in the industrial city of Hamilton, Ontario, treats over 342 billion gallons of wastewater per year. But the system that conveys all that wastewater is more than 150 years old.

The city's overall sewer system has about 1,948 miles of pipes split nearly equally between wastewater and stormwater pipe, with another 19% of the system combined.

"The earliest sewer pipes were laid in 1859, and we had one of the earliest wastewater treatment plants here in Canada dating back to the late 1800s," says Nick Winters, director of Hamilton Water.

This being the case, the documentation of this historic sewer system has gaps here and there. They make it challenging for Hamilton Water to know what's happening underground — and to keep unauthorized releases of raw sewage into Lake Ontario under control.

To address this problem, Hamilton Water launched its Enhanced Sewer Inspection Pilot Program in December 2022. It was devised after a disturbing undocumented cross connection between the combined sewer and storm sewer systems was found by Hamilton Water staff in November 2022 at the intersection of Wentworth Street North and Burlington Street East.

"We were doing some exploratory work in one area of our wastewater collection system in the combined sewer area," Winters says. "While reviewing an exploratory video, our staff noticed a hole that had been cut purposely in the bottom of a combined sewer pipe that ran directly over top of a large storm sewer pipe that crossed it. And they wondered why that

was there: It didn't look normal to them when they were reviewing a video. So they went out to confirm that what they saw in the video was actually what was taking place, and lo and behold — they found that, yes, there's this hole that had been cut in this pipe."

Digging through their records only brought more bad news.

"We learned that this combined sewer pipe had been discharging into this larger storm sewer for 26 years," Winters says. "We know this because we went back and looked at a capital project that had taken place in that area back in the mid-1990s and saw a notation within the capital project drawings, directing the contractor to cut this hole into the top of that storm sewer."

Owning the problem

Given today's strict regulatory climate, Hamilton Water immediately reported this spill to the relevant authorities.

"When you report a spill that's been occurring for 26 years to the regulator in Ontario here — that's our Ministry of Environment Conservation and Parks — it raises a lot of eyebrows," Winters says. "When I stood in front of our council and the media to advise our community of what we found, it raised a lot of eyebrows as well."

Rather than dodge the issue of undocumented cross connections, Hamilton Water decided to own it. "We took this spill as a sign that if this is happening in one spot, there is a strong likelihood of other instances of cross-connected sewers that aren't showing up in our records," Winters says. "And so we very quickly put together the Enhanced Sewer Inspection

Wastewater & Stormwater collections operators Levi Willie (left) and Alex McKechnie perform a manhole chamber inspection in Hamilton, Ontario.

PHOTOGRAPHY BY
RON SCHEFFLER

Pilot Program to look at high-priority maintenance chambers on our combined sewer system that are in close proximity to our separated storm system, knowing that's where these types of connections would've been established."

Taking matters seriously

To its credit, Hamilton Water tackled the issue of undocumented cross connections very aggressively. Within four months of the Enhanced Sewer Inspection Pilot Program being launched in December 2022, Hamilton Water staff had completed inspecting 100% of its specified locations.

The target area for inspections was the city's Ward 3, which discharges combined sewer overflows from four primary storm sewer outfalls into Lake Ontario. The city of Hamilton's Water Pollution Prevention website notes that, "Because of the prevalence of combined sewer overflows to these outfalls, the focus of the pilot program has been to thoroughly investigate the combined and storm sewer maintenance chambers upstream of these four outfalls."

To make this happen, 288 maintenance chambers within the combined sewer system were identified for inspection so that Hamilton Water could compare their actual conditions to the data recorded within its GIS.

As might be expected in a sewer system that was initially first laid down before the start of the U.S. Civil War, the inspection process uncovered problems. A case in point: Hamilton Water staff who were checking a combined sewer maintenance chamber at the intersection of Myrtle Street and Rutherford Avenue in January 2023 noticed an unpleasant smell emanating from a nearby storm sewer maintenance chamber and discovered a combined sewer pipe was discharging into the chamber. Based on the unexpected finding, 339 storm sewer maintenance chambers were added to the inspection program.

In total, 288 combined sewer maintenance chambers and 346 storm sewer maintenance chambers were inspected during the program, and two additional cross-connected sewers were identified.

"What our staff did was to lift chamber lids and trace back every single pipe connection that was discharging in that chamber," Winters says. "In doing so, they answered questions like do we know where that comes from? Does it look right to us based on historical records drawings? If it didn't, they checked the connections using dye testing or camera inspections."

The Payoff

The pilot program's results were worth the effort. "Since the launch of the program, Ham-

ilton Water staff have identified previously uncharted cross connections within the sewer system where flow from the combined sewer is diverted to the storm sewer during heavy rain events," Winters says. "These connections regulate sewer flows and are necessary to prevent localized flooding and sewer backups. The city's GIS system has been updated to capture these connections and they have also been added to the city's maintenance inspection program. Hamilton Water staff have also identified improper cross connections, which have been corrected preventing additional spills to the environment."

At the same time this work was going on, Hamilton Water received orders from the Ministry of the Environment and Conservation and Parks to do a thorough review of its operating practices and identify any gaps that would've allowed these types of cross connections to develop.

"What we found, quite frankly, is that in a lot of areas, the inspection and maintenance programs in Hamilton are leading edge in our industry, but there was certainly a gap between the accuracy of historical records and decisions that have been made based on those," Winters says. "And so building from that, we took a report to our municipal council here in September of 2023, recommending they make the Enhanced Sewer Inspection Pilot Program permanent. And they did."

Today, Hamilton Water's permanent sewer inspection program has two elements. The first being physical inspections of every maintenance chamber across the combined and storm sewer system in Hamilton — "making sure we know that everything's connected properly or identifying where things aren't," Winters says. The second is a dry weather sampling program where staff collect samples from the separated storm sewer system to see where any unexpected flows are coming from. In doing so, staff try to answer questions such as, "Is it only groundwater getting into the system, [either] on a dry day or on a regular basis? Is there a water main break that's causing flow into the separated storm sewer system? Or is there a cross-connected sewer in some capacity?"

One thing is certain: Hamilton Water is determined never to be surprised by an undocumented cross connection ever again.

"We will be doing a thorough review of all of our pipes to make sure that any inaccuracies have been identified and fixed," Winters says. "Thankfully, our city council has approved funding a team of 12 to staff our Enhanced Sewer Inspection Program into the foreseeable future." ♦

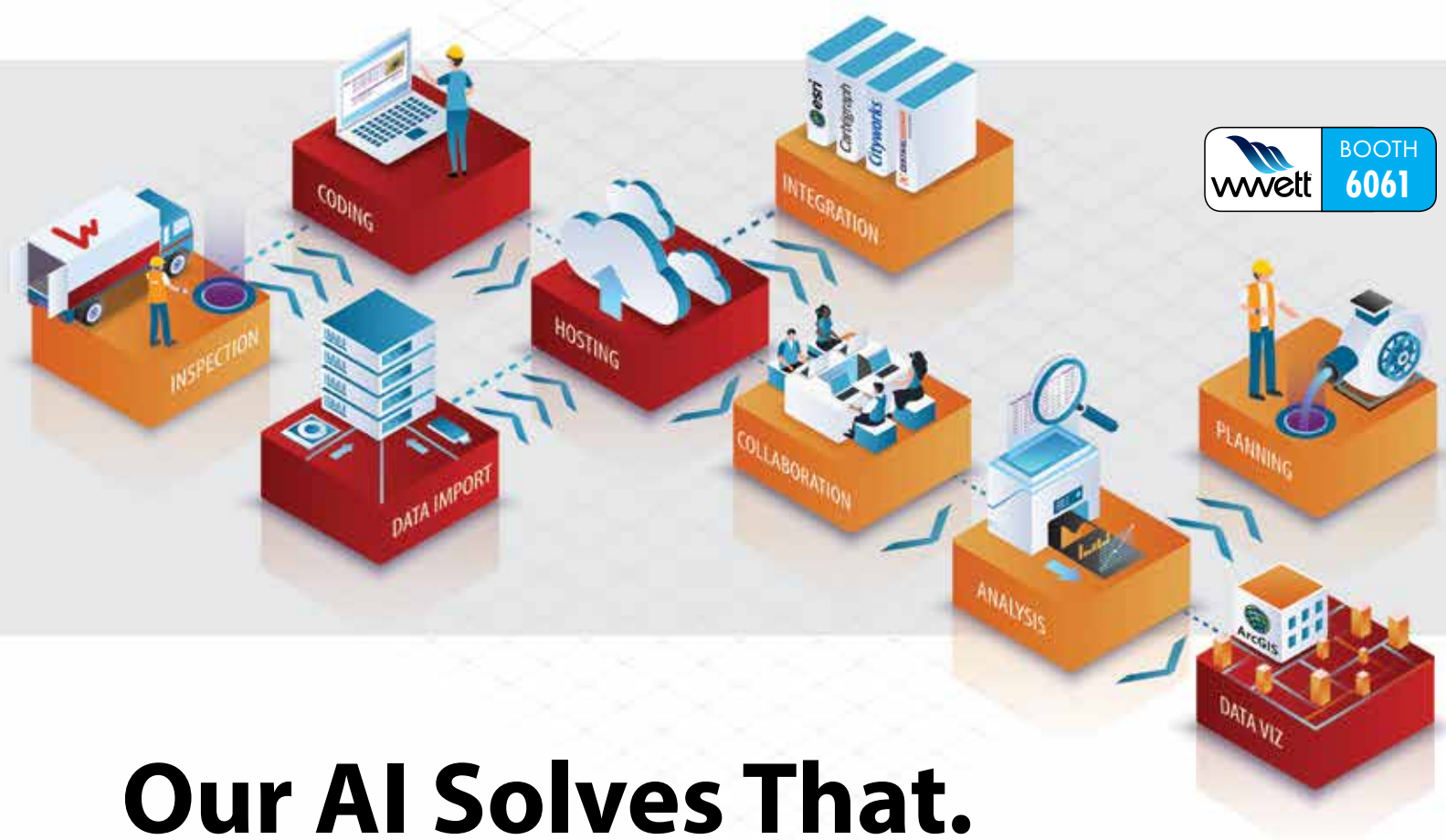
"The inspection and maintenance programs in Hamilton are leading edge in our industry."

Nick Winters



Donald Young, superintendent of the Wastewater Collection & Stormwater Operations for Hamilton Water's Enhanced Sewer Inspection Program, at a sewer inspection site in the west end of Hamilton.

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Monitoring & Enforcement Operations
Supervisor Muhammad Mujtaba analyzes a water sample taken from a manhole chamber after a video inspection revealed an uncharted connection.



The management staff of Hamilton Water's Enhanced Sewer Inspection Program includes (from left) Mark Wozniak, supervisor of Wastewater & Stormwater Collection Systems; Mike Spicer, superintendent of Environmental Monitoring & Enforcement; Donald Young, superintendent of Wastewater Collection & Stormwater Operations; and Muhammad Mujtaba, supervisor of Monitoring & Enforcement Operations.



Alex McKechnie (left) and Levi Willie use a smartphone to view the live video feed of a manhole chamber inspection from a Quickview AirHD QV-AHD camera.

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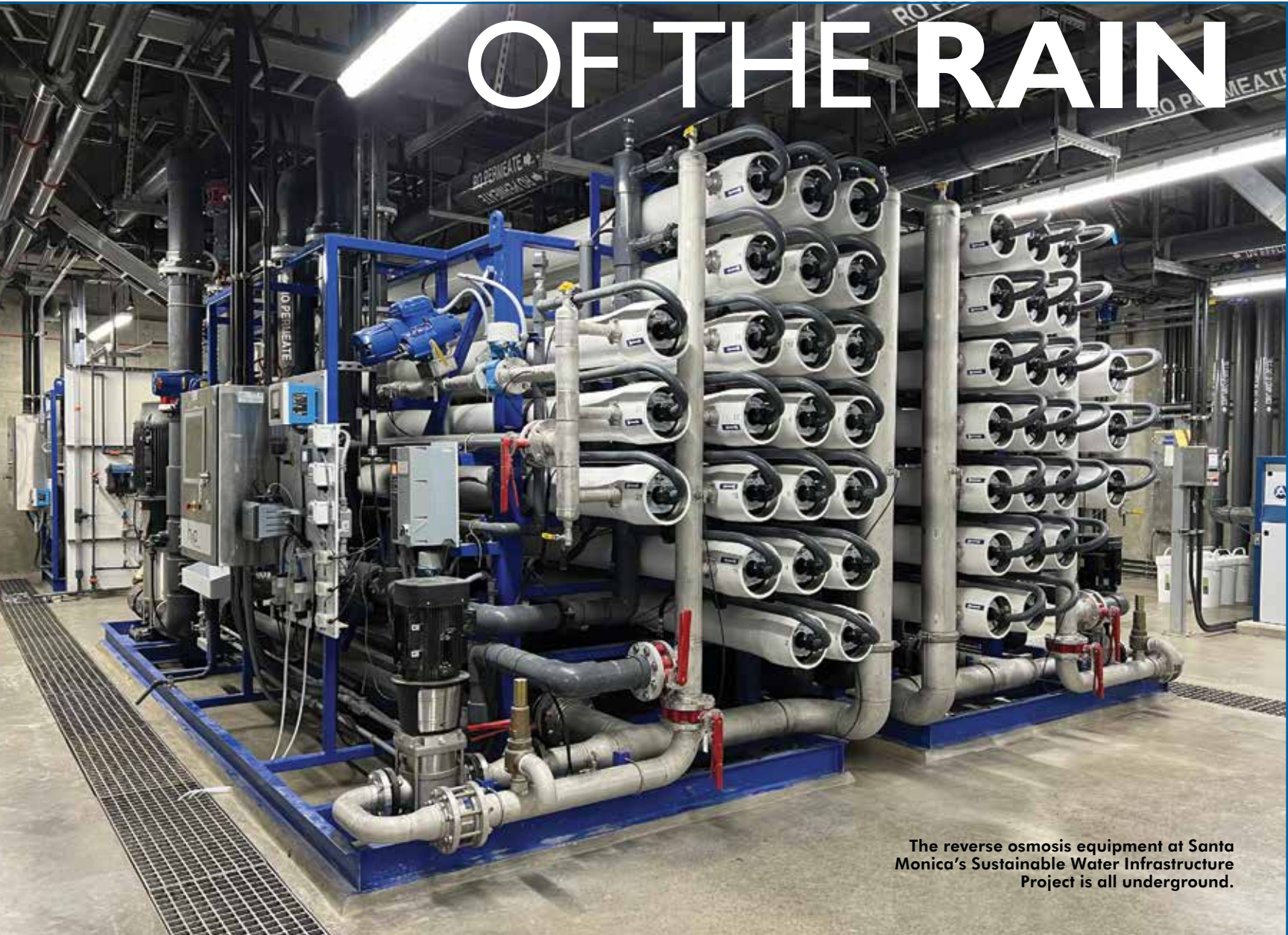
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The reverse osmosis equipment at Santa Monica's Sustainable Water Infrastructure Project is all underground.

Santa Monica captures stormwater, mixes it with wastewater and treats it for aquifer recharge and potable reuse

By **Steve Lund**

Santa Monica built a facility that can produce 10% of the city's water demand by treating wastewater and stormwater for indirect potable reuse. And it's practically invisible.

"The bad joke my staff gives me a hard time about is that we spent \$96 million on a parking lot," says Sunny Wang, water resources manager. "Because essentially that's all we have to show for it on the surface."

The facility, known as the Sustainable Water Infrastructure Project, received a 2023 Helen Putnam Award for Excellence from the California League of Cities. The treatment system came online in November 2022.

The project consists of a 1 mgd advanced water treatment system, a 1.5 million-gallon stormwater collection tank, and upgrades to the city's urban runoff treatment facility. The advanced treatment plant can process a mix of 30% stormwater and 70% wastewater, 100% wastewater during dry weather.



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The treated water is piped to injection wells that recharge an aquifer, from which water then can be drawn out and be treated for drinking water. On the way to the injection well, some of the treated water is used for irrigation or for toilet flushing in dual-plumbed buildings.

The recycled water is suitable for nonpotable and potable reuse. “The water that comes out of that facility actually meets or exceeds all drinking water standards,” Wang says.

No room on the surface

The treatment plant and the stormwater storage tank were built under a parking lot next to the Santa Monica Courthouse. Wang observes, “Santa Monica is a highly urbanized community. We’re completely built out. There’s just no space on the surface for this type of facility.

“We put everything underground to be a good neighbor and to be supportive of the facilities around us. We have very efficient odor-control systems. Even within the facility, you don’t have a strong sense of wastewater, and definitely aboveground you don’t smell any hint of it at all.”

The only visible indications that the water treatment plant is there are two small buildings that provide access to the underground facilities.

Multi-step process

Treatment starts with screening. The stormwater-wastewater mixture then goes to a membrane bioreactor that consists of an anoxic zone, an aerobic zone and filtration.

“Anything larger than 1 millimeter will get screened out,” Wang says. “After that, it goes to biological treatment. That’s actually the most effective treatment process we have in removing both organic and inorganic industrial contaminants. And then we have ultrafiltration. So the biological process and the ultra-filter membranes work together.”

After the membrane bioreactor, the flow goes to cartridge filtration, reverse osmosis, UV advanced oxidation and finally disinfection with free chlorine. The cartridge filters protect the RO membrane from fouling. The UV advanced oxidation process destroys chemicals such as pharmaceuticals and personal-care products.

“People take painkillers, for example, and that is in our wastewater,” says Wang. “We’ve got to make sure we destroy those before we can use the water to recharge our aquifer. The UV and chlorine zap out industrial contaminants. After that we carry a chlorine residual to provide traditional chlorine disinfection. The quality of the water coming out of the facility is above and beyond typical surface water or groundwater treatment.”

Protecting the bay

Under California regulations, water injected into an aquifer must remain there for two to six months before being pumped to a water treatment plant. “We have to conduct a tracer test,” Wang says. “We have monitoring wells. We monitor and confirm through tracer testing that we provide the required retention time.”

The raw wastewater being treated at the SWIP is a small portion of the city’s flow. The rest is treated at the Hyperion Water Reclamation Plant, a regional facility operated by the city of Los Angeles. The stormwater now treated at the SWIP previously ran untreated into the Pacific Ocean at the Santa Monica Bay.

“The original motivation for this project was to divert the urban runoff and stormwater away from the Santa Monica Bay to improve water quality there,” Wang says. “Then it became, OK, if we divert all that water, what do we do with it? So then we decided to recover it for beneficial use.”

The hard part

During the heavy rains that hit Southern California in the winter of 2022-23, the stormwater collection system diverted 20 million gallons that would have flowed into the ocean. That stormwater was mixed with wastewater, treated and reused.

“We use wastewater to dilute the stormwater,” Wang says. “Stormwater is actually harder to treat than wastewater. Wastewater is organic and easy to biodegrade, versus the heavy metals and oil and grease that stormwater picks up in the streets. That’s why

we only treat up to 30% stormwater. Otherwise, it would affect our biological treatment basins.”

In its first year of operation, the SWIP did not run at full capacity, because the injection well couldn’t absorb as much water as expected. The city is developing two more injection wells to enable use of the plant’s full capacity, which is about 10% of Santa Monica’s water demand.

That’s a big step toward the city’s goal of reducing reliance on water imported from Northern California or the Colorado River. The city hopes to become water self-sufficient, meaning 99% of its water would be locally sourced.

Keeping stormwater out of the bay is also a goal, and the amount collected and treated at the SWIP is a small percentage of what is available. Another underground collection tank is under consideration. “It’s doing great,” Wang says. “But there’s definitely more to be done.”

Wang thinks what Santa Monica has accomplished with the SWIP can be a model for other communities: “We spent quite a bit of time and money to investigate and negotiate with the regulators about how to treat this water to the highest beneficial use, so we hope that this is an example that other communities could follow.

“They don’t have to go through the same exercise we did. We established what those treatment requirements and regulations look like, and others could just follow our lead. We’re really hoping for more utilities to pick up on these ideas and implement this type of project.” ♦

Two buildings that provide access to the underground Sustainable Water Infrastructure Project in Santa Monica are the only visible signs of the RO facility at ground level.





American Water Works
Association

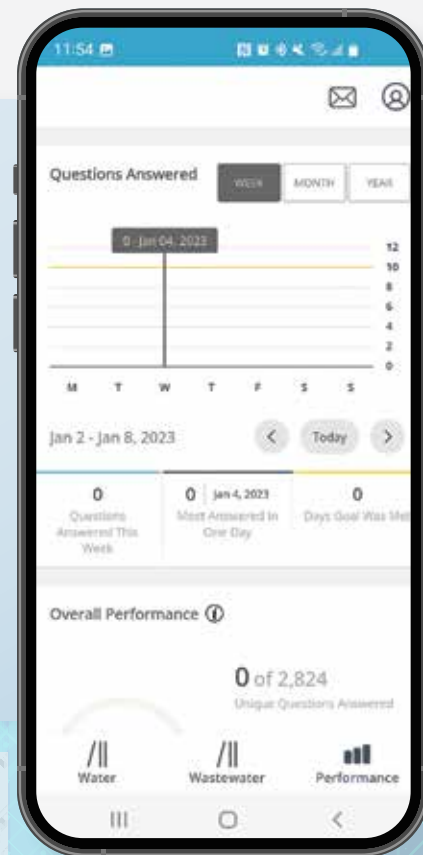
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TRAINING FOR THE FUTURE

California city's training program harnesses institutional knowledge to build consistency and improve performance

By Suzan Chin-Taylor and Mary Shafer

The small town of Watsonville, California, is nestled between Santa Cruz on the north and Monterey on the south. The hilly agricultural area thrives on tourism through nearby redwood forests and majestic mountains.

The Watsonville Wastewater Treatment Facility, first constructed during the 1920s, has seen its mission grow from servicing a small agricultural community to treating wastewater for tens of thousands of residents, as well as commercial and industrial businesses.

In the ensuing century, the staff has developed its own way of doing things, as happens in many American cities. The team is primarily responsible for preventive maintenance of the city's sanitary sewer system and maintaining the city's stormwater system. It is also contracted to maintain 12 storm stations, owned by the Pajaro Regional Flood Agency, that sit along the levee within the city limits. These pump stations push water out of the city during rain events.

Post-pandemic blues

Since the 2020 pandemic, another common characteristic has come to be shared by Watsonville: a shortage of long-term employees. In the wake of this disruptive global event, the city finds itself struggling to compete with outside forces — who lure potential workers with better salaries and benefits — to attract and retain operators and CDL drivers. This has made training an ongoing nightmare, since new people are constantly coming aboard to cover these departures.

Watsonville had never had a documented training process that kept messaging and techniques consistent across disciplines, and this only complicated matters. Collection Systems Manager Ruben Tellez noticed through interaction with different staff that there was a wide enough variation in the operational knowledge base to become a significant problem.

Tellez was also challenged by another familiar scenario: needing to develop greater operational efficiencies within increasingly limited budgets and tighter staffing.

Brain Drain

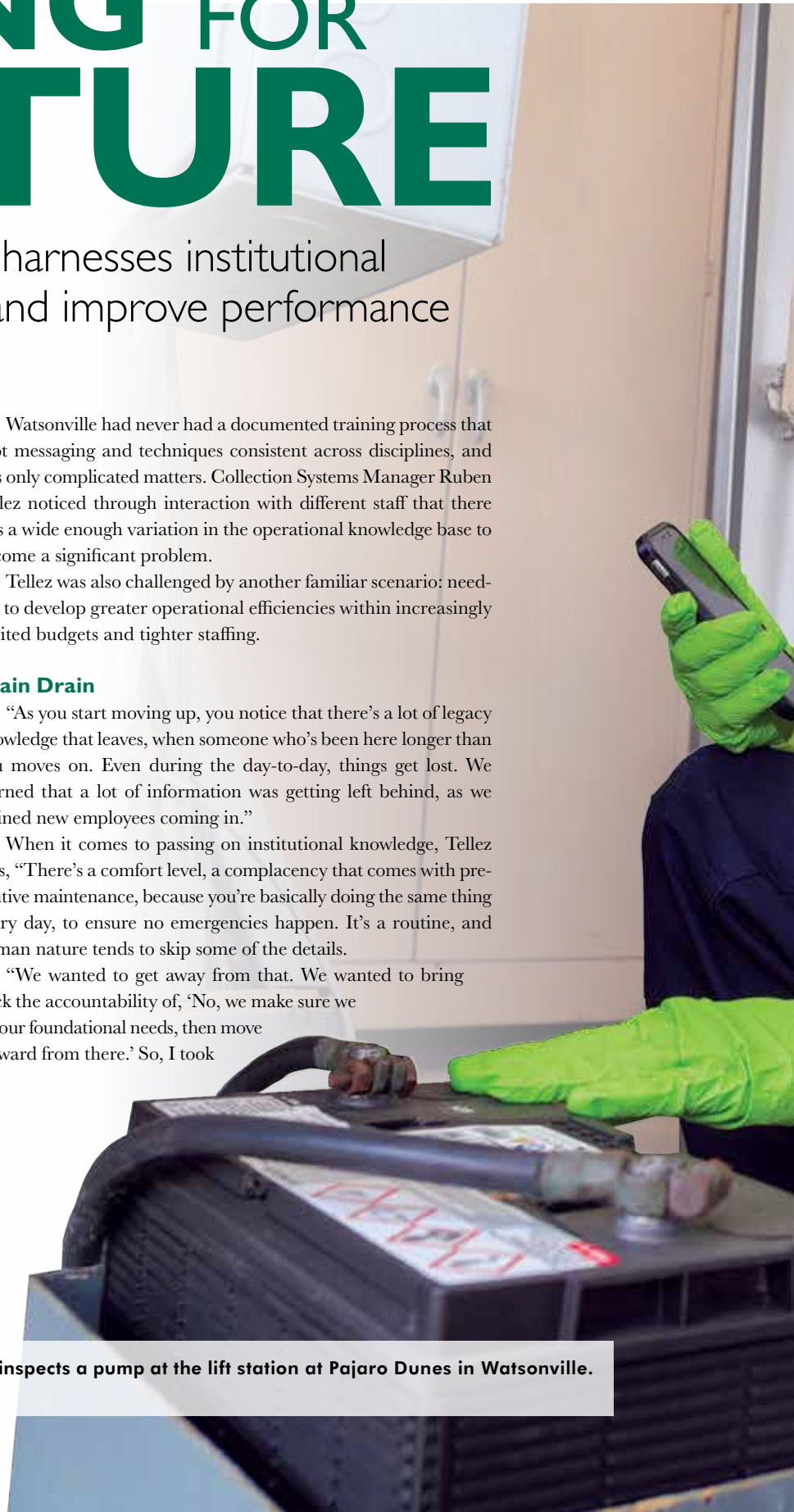
“As you start moving up, you notice that there's a lot of legacy knowledge that leaves, when someone who's been here longer than you moves on. Even during the day-to-day, things get lost. We learned that a lot of information was getting left behind, as we trained new employees coming in.”

When it comes to passing on institutional knowledge, Tellez says, “There's a comfort level, a complacency that comes with preventive maintenance, because you're basically doing the same thing every day, to ensure no emergencies happen. It's a routine, and human nature tends to skip some of the details.

“We wanted to get away from that. We wanted to bring back the accountability of, ‘No, we make sure we hit our foundational needs, then move forward from there.’ So, I took



Collections systems operator Armando Navarrete inspects a pump at the lift station at Pajaro Dunes in Watsonville. PHOTOGRAPHY BY DAVID ELKINS





“The knowledge, the notes are never lost. They’re always there. You can pull them up at any time.”
Ruben Tellez

a step back. When I became manager, we started writing down the things we did, creating standard operating procedures for those things. Because of the turnover in our positions, we wanted to create something that would last longer than us; basically, for as long as we were using the same equipment.”

Even the creation of the SOPs has been clarifying, he says. “We remember, ‘Oh, wait, no! This needs to happen, and this needs to happen.’” So the process itself sparked valuable content, but that content needed to be delivered in a way that was both easily accessible, and likely to actually be used. Typed notes can be easily updated, but not everyone learns best by reading.

Format matters

Tellez thought about how to maintain a virtual knowledge base that could be accessed from anywhere, was engaging and immediate, and supported visual/audio learners. He considered his own applied learning experience.

“Anytime I have to do something around my house, I go immediately to YouTube. I watch a 10-minute video, then I can refer back to it as I’m working through that process. The joke is [people calling it] ‘YouTube university,’ but we use that a lot.”

As he mulled this, Joseph Blackman — a former combination truck sales representative he’d worked with — approached him about working with his new company, Vitendo Training Solutions (vitendo.us). According to its website, “Vitendo Training Solutions is a workforce development system for cities, counties, utilities and manufacturers.” The company’s mission is “to get the knowledge from the people who have it to the people who need it ... with Just In Time training.”

Essentially, Vitendo offers the immediacy of video that can be posted to Vitendo’s indexed, searchable servers, making it easy to access from anywhere, anytime. Blackman, whose background makes him familiar with the industry,



PROFILE:
City of Watsonville, CA
Public Utilities Department
– Wastewater Division

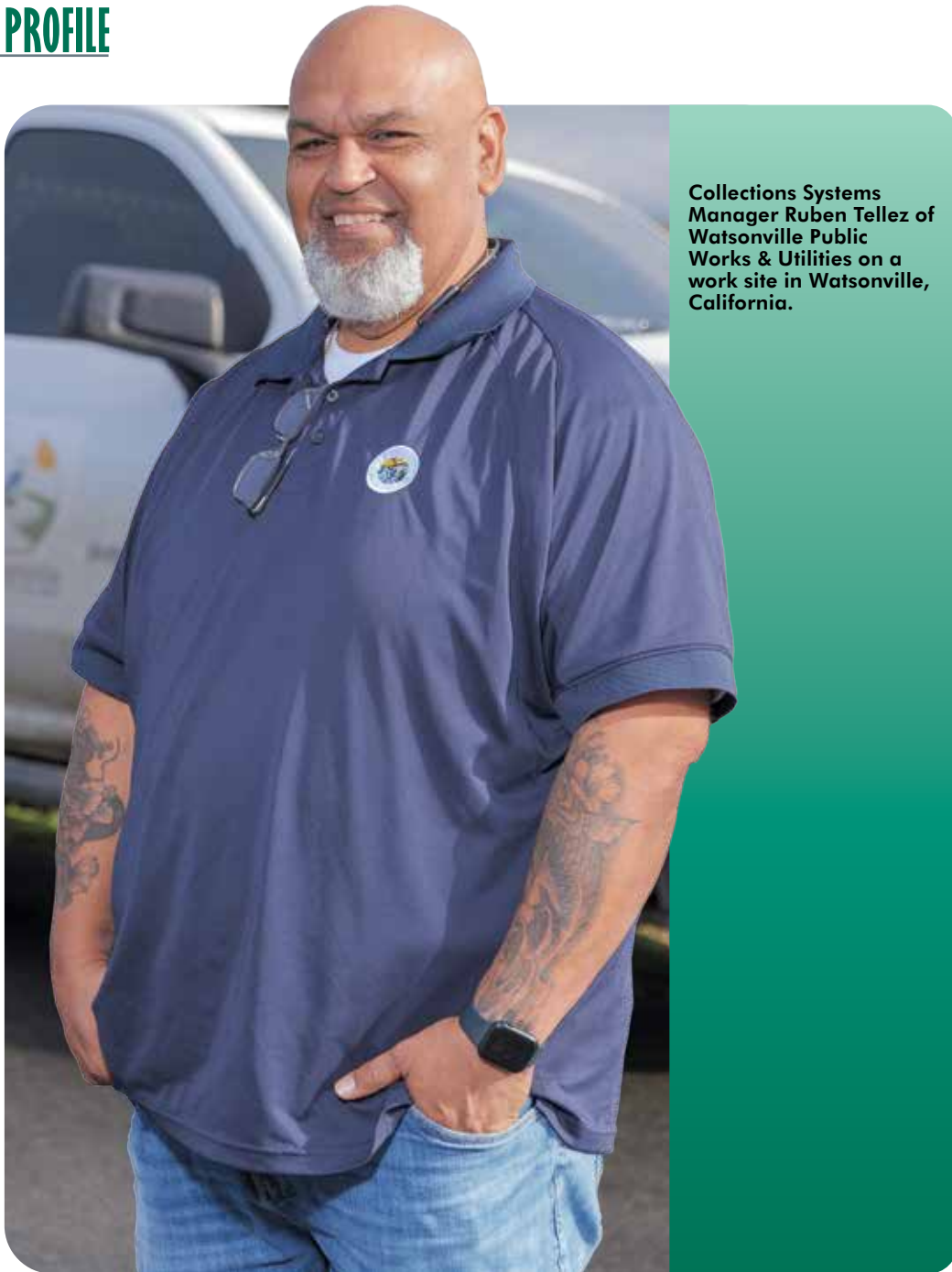
POPULATION SERVED:
 Approximately 60,000 customers

SERVICE AREA:
 21 square miles

EMPLOYEES:
 20

COLLECTION SYSTEM:
 146 miles of gravity sanitary collection mains, comprised of 6- to 36-inch-diameter pipes. Roughly 75% are composed of trussed pipe; 12 lift stations, 4 pump stations and 2,900 manholes.

WEBSITE:
 watsonville.gov



Collections Systems Manager Ruben Tellez of Watsonville Public Works & Utilities on a work site in Watsonville, California.

helps clients write their scripts, choose locations and angles, shoots the video, and edits it into final form. These videos are fairly easily updated when new equipment is added, or processes change.

The process

Due to their previous business dealings, Tellez had a great deal of confidence in Blackman’s understanding of his operational needs. This gave him trust in bringing Blackman in to guide the planning process, and Blackman was thorough.

“We had around four preliminary calls to prep for the shoot,” Blackman recalls. “These calls consisted of what needed to be captured on video, how we were going to find the jobs, tools and equipment to capture, and who was going to do the training.”

That choice was fairly easy for Tellez. “It was the guys who were the most vocal and OK with doing it. A lot of people are camera shy or don’t want to hear themselves talk on video. The ones who did weren’t necessarily the ones who had been here very long. They were actually fairly new, but because they were being walked through the process, and [could refer to] the SOPs we developed, they were able to at least look like they knew what they were talking about.”

As videographer, Blackman helped Tellez create a shared “Asset List,” to make sure all parties were on the same page about what needed to be covered, and all locations that needed to be included. This allowed them to efficiently plan where each part had to be shot.

“We gave him a list of where we needed to go,” Tellez says. “He’s really good about just following along.”

Some footage was shot at the treatment plant, especially for segments on trucks and equipment. Though the detail of the finished sessions appear as though the crew went to every external location, they didn’t. Six of the lift stations are exactly the same, so Blackman shot one of those, as well as those that had anomalies, then the footage was spliced and condensed.

End product

Blackman was able to gather all needed footage in a single-day shoot. It took two weeks to edit down to a total of 2.4 hours of content that was delivered for viewing through a proprietary portal on Vitendo’s server. The client owns the edited video.

Watsonville technicians are issued digital tablets with mobile cell service, allowing them to access the training portal through the internet. There, all training sessions are cataloged in a searchable database according to title/subject. Technicians have this site bookmarked on their tablets, providing easy access to the videos as needed.

When the portal first went live, Watsonville technicians were using the videos a lot, and management were reviewing them often. Now they get reviewed mid-year. “We’ll go through them again,” says Tellez. “We do them for both truck safety, and how to use the equipment.”

“What we revisit the Vitendo videos for is, ‘Hey, remember? We’re at these stations, this is what and how we check these.’ We’re still evolving as a department. The guy that’s been here the longest besides me has six years; after that it’s three years, two years, and then we just hired a guy who’s been around since January — so the youth of knowledge is a lot, and these come in really handy with that. We’re also fairly young in the development of how we do our preventive maintenance, so this is really helping that evolution. You can pick a pool of that training whenever it’s needed.”

Extending the value

Tellez says the video training concept holds value for the department’s future, as well as its present. One of the lift stations is currently going through an upgrade, as part of a capital improvement project, including new equipment.

“We have planned on getting Joseph back out here and making updated videos, as things become obsolete. He had given us the option to add video as needed. There was an option to do our own video, but I really liked the way he came out and interacted with the guys, and the way he edited the video. Preferably, I would rather have Joseph involved.”

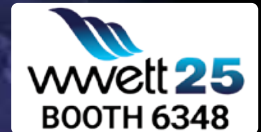
Tellez also has his mind even farther forward, in succession planning for department leadership.

“When I came in, there were a lot of things left out of the training that we need to cover, as far as day-to-day operations, safety meetings, things like that.

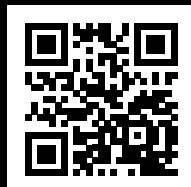
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“We learned that a lot of information was getting left behind as we trained new employees coming in.”

Ruben Tellez

We haven't really broken down the most efficient way to do that training for succession planning. We're trying, but it's more outside vendors coming in and doing managerial and finance trainings, and things like that.

“I think that'd be a little harder to put on video, because you have all the finance rules and you have the regulations that come with it. But if there was something we could do to speed up at least the process of becoming a lead, that would be nice. But it would take some brainstorming.”

He'd very much like to commit as much training as possible to the video format, for some very sound reasons. “The knowledge, the notes are never lost. They're always there. You can pull them up at any time, during a discussion or maybe a disagreement on a piece of equipment. ‘Well, now. Let's go to the training video and look at it.’ That gets away from opinion and only deals in facts, and that's huge when it comes to preventive maintenance.”

Embrace the change

Tellez is a big supporter of embracing new technology, despite its inevitable discomfort levels.

“Our job certification [training] talks about always trying to look for the latest and greatest, for some-



Collections systems operator Grant Lawrence pulls floats to inspect them.

VIDEO TRAINING CONTENT: THE NITTY-GRITTY

Recording training videos for operators and technicians sounds like a great idea. But where do you start?

City of Watsonville's Wastewater Division Collection Systems Manager Ruben Tellez went through his backlog of written notes and, with the help of a colleague, gathered them into a semblance of order.

From there, he worked with Vitendo Training Solutions' owner and videographer, Joseph Blackman, to refine them into basic scripts that Watsonville technicians would follow in narrating the training videos.

Those considering doing the same for their facilities and staff might find their topic list helpful as a place to start in addressing their own training needs through video creation:

TRUCK OPERATION

- Pre-prip walkaround
- Pre-trip lights check
- Pre-trip engine check
- Proper way to enter and exit truck
- Water plumbing on vactor
- Nozzle feature and functions
- Front controls
- Side controls
- Remote belly-pack controls
- Inside controls and display functions
- How to check the Y-strainer filters
- How to check the vacuum filters

LIFT STATION MAINTENANCE

- How to perform a station check
- Station overview check
- Station check log
- Submersible station check
- How to perform a station check on open-air wet well
- SCADA check
- Checking pump in enclosed wet well
- Setting up the washdown gun
- Transfer test
- How to put panel in test mode
- Propane tank check
- High and low water test
- Water pump drain valve check
- How to fix a pump
- Different types of grease

SAFETY

- Safety preparation
- Cone setup variations
- Two-person manhole setup roles
- Function of safety props on vactor
- Importance of hydration
- Proper PPE while at work

EQUIPMENT

- Proper Way to wear sonetics
- Sonetics Bluetooth capability
- Sonetics controls
- Sonetics introduction
- How to extend sonetics range

thing that's going to help you be more efficient, more effective in management. If you're always trying to look for that, and the way you go about it is by training your crews the best way possible, you should want to embrace things that are going to make you more effective as a department. So it's hard for me not to sing the praises when you run into a training device like this. It's successful, and moving forward it's how our future training is going to be done.”

The elephant in the room, in any modern conversation about technology, is artificial intelligence. It's something Tellez and his colleagues have looked into. Specifically, they've been eyeing an AI software package that can categorize types of defects that occur during a CCTV line inspection, which his department is required to do for every system assessment.

He's open to the idea, but so far, the execution hasn't impressed him.

“Maybe I'm getting old, but I still like the human element of that. I can look at a crack and see something a little bit more than that it's just a crack. I know to ask, ‘Well, why is it a crack?’”

He feels that perhaps AI still needs time to build up its own knowledge base before it can compete with the library of human experience. It'll come, he says, but “I think right now, the AI system that they have, you still have to go back and review what it's done, to make sure it's doing it correctly.”

For now, the proven technology of streaming video posted to an Internet portal for 24/7 accessibility is sitting right in the sweet spot of the intersection of efficiency and effectiveness in Watsonville. ♦

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WATER AND WASTEWATER SYSTEM REHABILITATION *By Craig Mandli*



Flow restored and repairs averted on a critical water main

Problem:

A critical 2-mile raw water main in De Soto, Kansas, was experiencing reduced flow, leading to water shortages. The 16-inch ductile iron pipeline, installed in the 1940s, was the city’s primary water source. Population growth and ongoing development

increased the demands for water. The objectives for **American Pipeline Solutions (APS)** and Blue Water Solutions Group were to improve the flow rates and conduct a condition assessment of the raw water main.

Solution:

To remove sediment and debris that had reduced the effective diameter of the pipe from 16 inches to 12 inches, pigs in different sizes and densities were launched into the pipeline and propelled by water pressure. When there

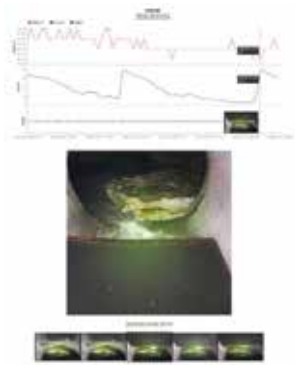
wasn’t enough water pressure to propel the pig effectively during the day, the team quickly adapted by switching operations to nighttime hours. Following this, APS conducted a pipeline condition and integrity assessment using i2i’s SmartFoam Pig. Equipped with eddy current sensor technology, the smart pig assessed the pipe’s internal conditions, including corrosion, geometry and wall thickness.

RESULT:

Flow rates and operating pressures were restored to satisfactory levels, ensuring that the city could meet the demands. Data from the smart pig’s condition assessment confirmed the pipeline was in overall good condition, with no leaks and minimal levels of corrosion and debris. The pipeline was deemed to have decades of remaining service life, negating the need for immediate rehabilitation or costly repairs.

201-525-0088; www.americanpipelinesolutions.com

Underground camera system now includes machine learning analytics



Problem:

TREKK Design Group operates from 11 offices in Missouri, Kansas, Nebraska, Arkansas and Tennessee, employing 227 professionals on public and private sector water resources, civil and transportation projects. TREKK needed machine learning-capable analytics software to power its Waterspout data collection and delivery system that collects data from its PreView underground storm and sanitary sewer pipe viewing technology.

Solution:

Some members of the TREKK team were already familiar with **infinittii ai** flowworks from previous jobs. It’s renowned for its ability to easily accept varying internal and public data inputs and outputs, from underground camera images tied to sensor data, to satellite weather data inputs from far overhead. After a successful project to integrate infinittii flowworks with TREKK PreView, Waterspout powered by infinittii ai has been rolled out to 11 TREKK clients that include municipalities and other engineering services companies.

RESULT:

“With machine learning capability, it’s no longer ‘out of site, out of mind,’” says TREKK President Trent Robinett. “We can pinpoint and avoid problems without having to send crews into sometimes dangerous environments. This new way of doing things completely replaces the old way of delivering a PDF report of a site inspection that might have been done a month ago and isn’t relevant anymore. We’re excited by the ability to help clients operate based on live data that can include predictive analytics – what could happen versus what did happen.”

778-379-0275; www.infinittii.ait

High-build lining allows rapid emergency repair of splitter box



Problem:

Positioned early in the wastewater treatment process, splitter boxes are subject to significant abrasive force and exposure to highly corrosive influent. At the Lake City (Florida) Wastewater Treatment Plant, a splitter box’s prior coal tar epoxy lining system failed, resulting in widespread pitting of the underlying

steel. An immediate repair was necessary, and plant managers sought to minimize the impact of any potential disruptions that would result.

Solution:

Plant managers chose the spray application of **Carboline’s Hydroplate 6500**. Hydroplate 6500 is a premium-grade, ultra-durable epoxy lining suited for use on both concrete and steel surfaces in aggressive, hydrogen-sulfide-rich municipal and industrial wastewater environments. Two features were crucial to this project: First, its rapid-cure formula minimized the length of time plant operators needed to partially shut down the splitter box. Second, it achieves film builds as high as 250 mils on a single pass at comparatively low pump pressures — around 3,000 psi, and often less than that. The result is a significant reduction in fatigue of spray applicators, leading to overall faster and higher quality work for time-sensitive projects.

RESULT:

Only short partial shutdowns of the splitter box were necessary. With no full shutdown, there were no disruptions to wastewater treatment.

800-848-4645; www.carboline.com

Three construction firms join forces to deploy large pipe plug at theme park



Problem:

Universal Studios is developing Universal Epic Universe, a new theme park in Orlando, set to open in 2025. The project faced a significant challenge: replacing 18 underground chiller line valves in the parking lot. This complex task involved three specialized companies: Comprehensive Energy Services for mechanical contracting, National Trench Safety for trench and traffic safety equipment, and GPH Services for site development and underwater installations. The valves, buried 18-25 feet deep, required excavation near a major drainage pipe, demanding innovative

solutions for water flow management and safety. NTS provided the necessary equipment to block the storm drain, CES handled the valve servicing, and GPH, subcontracted by CES, managed the underwater aspects of the installation, ensuring the project's success despite the challenging conditions.

Solution:

NTS acquired a 72- to 120-inch **Cherne I-Series Test Ball Plug** for a project and rented it to Comprehensive Energy Services, who hired GPH Services for its installation due to their diving expertise. GPH ensured the plug's correct placement, vital for CES's repair work. This plug, notable for its size and made from 100% natural rubber, is designed for durability and conformity to pipe surfaces, making it ideal for underwater use. GPH's preparation included extensive testing and cleaning of the pipe to prevent damage. The installation, conducted by a diver in zero visibility, emphasized safety, using a five-point harness and backup air supplies, with constant team communication. The plug remained installed for four months, successfully providing the necessary access for repairs.

RESULT:

Cody Crawford, vice president of operations for GPH Services, praised the plug's performance, saying, "The plug worked great, just like any other Cherne plug. Its performance was exceptional, and it met all our expectations." Similarly, Tim Kelce, an account manager for National Trench Safety, expressed excitement about a significant project, saying, "I'm installing the largest plug in the world, and that's a pretty big deal." The project, notable for its use of premium materials and strict safety measures, set a new standard for future large-scale engineering projects. **800-843-7584; www.cherneind.com**

CIPP solution stops groundwater leaks at dam



Problem:

The Barkley Dam Power Plant in Grand Rivers, Kentucky, faced a serious issue when groundwater began leaking into the powerhouse tunnel through eight rigid steel conduits. These conduits had been installed by an electrical contractor, but the steel couplings became compromised, allowing water to seep

into the conduits and the tunnel. This posed a significant risk to the power plant's operations, requiring an immediate and effective solution to stop further water intrusion. The conduits in question were extremely narrow, with diameters ranging from only 1 to 2 inches. This small size made accessing and lining the pipes extremely challenging. Additionally, the conduits were located 350 feet from the tunnel entrance, complicating access and debris removal during cleaning.

Solution:

To resolve the issue, **NuFlow Services** utilized **NuDrain CIPP** technology, which involved lining the conduits to create a watertight barrier. The conduits were first cleaned using high-pressure air abrasive blasting with a silica carbide aggregate. Evacuating the debris posed a challenge due to the 350-foot distance from the tunnel entrance, but a 2-inch suction hose was used to successfully remove the debris. Once the cleaning was complete, eight NuDrain liners were consecutively installed within the leaking conduits. To successfully rehabilitate the pipes, the application and curing pressures exceeded 100 psi, ensuring a durable, watertight seal despite the challenging pipe configuration.

RESULT:

All conduit lines were fully lined, and the tunnel wall was sealed effectively, addressing both the initial groundwater intrusion and the unexpected tunnel wall leak. The electrical contractor was highly satisfied with the innovative and swift solution provided by NuFlow Services. The final inspection by the U.S. Army Corps of Engineers confirmed the repair met all standards, with no wrinkling in the conduit bends and minimal loss of internal diameter, ensuring the cables had sufficient space to pass through. **866-430-2134; www.nuflow.com**



Lining system allows for swift and silent sewer rehab

Problem:

The wastewater pipes under an apartment complex in Hollywood, Florida, had to be repaired. The challenge was that there was only one access point available for the 68-foot section.

Solution:

Pipelining Technologies rehabilitated the wastewater pipes in the building using

BRAWO SYSTEMS equipment, installing **BRAWOLINER** using the **BRAWO Magnavity SX** light-curing system. The wastewater pipes to be rehabilitated were first thoroughly cleaned to ensure optimum adhesion of the liner. Then the liner was inverted into the pipe through the single access point. The liner was cured using special lighting technology that ensured that the liner cured quickly and evenly within 60 minutes.

RESULT:

The rehabilitated wastewater pipe could be put back into operation quickly. Using only one access point and not having to carry out any demolition work, the tenants and residents of the apartment complex were hardly disturbed. There was no construction site noise to speak of. **240-796-5007; www.brawosystems-usa.com**

Lift station retrofit into existing footprint



Problem:

Santa Barbara County needed a wastewater lift station retrofit to effectively replace an existing lift station. A nearby restaurant sewer flowed into this station, creating difficult water conditions with the potential for grease and other suspended solids. The site was small and could

not be excavated without becoming prohibitively expensive. The lift station retrofit needed to handle medium flows of municipal sewer from two inlet lines and make use of limited site space without a huge excavation plan.

Solution:

The low head conditions were met with 2 hp BJM submersible shredder pumps in a duplex configuration. These pumps were needed to handle difficult water conditions from the nearby restaurant. Pump maintenance and accessibility were improved through the addition of a Thern Commander 1000 crane to lift the 150-pound pumps from the well. This is useful for dealing with clogs in the pumps or other service needs. The retrofit utilized a fiberglass insert to install directly into the existing well. This prevented site excavation where there was limited space and difficult dewatering requirements. In addition, the fiberglass acted as a new coating, providing an extra level of protection for the existing structure. A separate valve vault comprises check valves, shut-off valves and an accessible pumping port for emergency bypass pumping. **Romtec Utilities** also provided the retrofit control panel for this system with a tie-in for a mobile generator.

RESULT:

Romtec Utilities met these requirements and developed a retrofit specification while keeping the project on budget, completing the project with limited space, difficult water conditions and dewatering requirements. This all allowed the retrofit lift station to work seamlessly. **541-496-9678; www.romtecutilities.com**

Asset management and maintenance play vital role in water treatment protocol



Problem:

Located in Vermont, Champlain Water District is nationally recognized for excellence in drinking water treatment. It operates as a wholesale water supplier of water to 12 municipal water systems located in eight communities covering approximately 70 square miles, accounting for approximately

24,000 connections with 75,000 customers. Over the past few years, proactive asset management and maintenance has become a cornerstone to management and maintenance of key assets in the treatment and distribution system.

Solution:

USG Water Solutions was charged with restoring CWD's 15 water tanks to like-new condition and maintaining them over the long term. Its success encouraged the district to explore using asset management for other parts of its water treatment system, and today, USG is also responsible for asset management and maintenance covering the three adsorption clarifiers and eight filters that are critical components in CWD's water treatment system.

RESULT:

Regarding the CWD's experience with asset management and maintenance programs, Joe Duncan, P.E., general manager of CWD, noted, "We strongly recommend looking at this model. Putting aside money for future repairs doesn't always work as the money that's been put away might be diverted to other needs. I believe this model has extreme value, because you know that once you're in the program, maintenance and repairs will move forward." **855-526-4413; www.usgwater.com**

Epoxy resin used to rehab large corroded pipes



Problem:

The San José-Santa Clara Regional Wastewater Facility had 1,800-plus feet of massive 120- and 102-inch-diameter pipes with severe crown corrosion. Several areas had extensive concrete spalling with exposed rebar. An assessment estimated the remaining service life of the pipe between 0 and 12 years. A high priority was given to coating the pipes to lengthen their life span.

Solution:

As part of the WTP Yard Piping Improvements Phase 2 project, Michels Pipeline patched badly deteriorated spots with cementitious geopolymer mate-

rial, followed by coating the pipes with **Neopoxy** high-strength corrosion-resistant **NPR-5303 Epoxy Resin**. The project owner decided to line only the top 200 degrees of the pipe due to the more serious corrosion in that area. The Michels crew applied epoxy at a thickness of 150-250 mils using plural component spray equipment.

RESULT:

The project was completed successfully. The coating successfully passed spark and pull testing. Several of the pull test results were over 1,500 psi (project specs required 250 psi minimum), with a clean concrete break rather than a separation of the coating and substrate. The pipes were back in service within a few days. Through the application of the Neopoxy NPR-5303, the life span of the large-diameter pipe was extended by approximately 50 years. **510-782-1290; www.neopoxy.comt**

PVC liner the choice for city's sanitary sewer rehabilitation



Problem:

Murrysville, Pennsylvania, was facing the deterioration of its 50-year-old terra-cotta sewer pipes, causing sanitary overflows during rain events. With joints every 4 feet, these pipes were prone to blockages and failure points, taxing the wastewater treatment plant. The Franklin Township Municipal Sanitary Authority needed a solution to prevent inflow and infiltration. Complicating matters, the project required working through a forested area, making conventional trenching methods impractical.

Solution:

The municipality selected IPEX's NovaForm PVC liner, a trenchless, expand-in-place solution that repairs pipes without the need for excavation. Unlike CIPP methods, NovaForm does not rely on chemical curing or styrene, making it environmentally friendly. The product offers a joint-free, durable liner that can handle various pipe materials, including terra-cotta and asbestos cement, and install depths of up to 30 feet. It also allows fast installation, with up to 800 feet of pipe relined per day.

RESULT:

NovaForm was installed quickly with minimal disruption, eliminating the need to dig and preserving the forested area. The project provided immediate results, reducing system strain and preventing overflows. Murrysville has used NovaForm multiple times, with public works officials praising its efficiency and durability.

800-463-9572; www.ipexamerica.com



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STEWARDS OF WATER EFFICIENCY

California utility helps residents save money with one-stop shopping and a three-step program for water-saving landscapes

By Sandra Buettner



The Eastern Municipal Water District started its Landscapes for Living Program during the COVID pandemic, when residents were home more and spending more time with their yards.

The program lets residents save money and water while creating beautiful drought-resistant landscapes. The utility makes it as easy as 1-2-3: they just visit the district website, choose a contractor to help with the redesign and start saving.

Easy peasy

The district provides water (86 mgd), wastewater treatment (43 mgd) and recycled water to nearly one million people in a 558-square-mile service area

in western Riverside County. Utility staff members created the landscape program to promote outdoor water efficiency through expanded services under a single umbrella.

The district at first offered device rebates to promote water efficiency, but the residents wanted more, including help with landscape plans and recommended contractors to help them transform their yards. In 2021, during the pandemic, the team created tutorial videos to show contractors how to create water-efficient landscapes.

The program is promoted through the district's website, print and electronic newsletters, social media, print and electronic advertising, and flyers provided

at events. When residents transform their yards, neighbors often ask questions, and the program spreads through word of mouth.

Rules of engagement

"Transforming a yard can be a big project to undertake if you don't have help," says Jennifer Shimmin, director of water use efficiency for EMWD. "That's why we created the program in three easy steps."

Using the website (www.emwd.org/landscapes-living), residents apply for a free landscape evaluation and sign up for a free weather-based irrigation smart controller. Once they are approved, a con-



The Eastern Municipal Water District's Landscapes for Living Program helps residents save money and water while creating beautiful drought-resistant landscapes.

tractor visits the yard for a survey to help create a plan and to install the controller. Residents then download the controller application on a smartphone or laptop.

After the plan is set up, residents can work with a featured contractor or plant the water-saving vegetation themselves. Rebates for turf removal are available, and contractors can assist with that. Before and after pictures are required for the rebate. Turf has to be removed before the water-efficient landscape can be created and installed.

For the do-it-yourselfers, the district has online instructional videos and a demonstration garden at the utility's office for residents to view. "Historically,

we held in-person workshops for residents who want to transform their yards or learn about it," Shimmin says. "Because of the pandemic we stopped those, but we plan on starting them up again soon."

A list of water-efficient plants, perennials and succulents is available for six basic designs:

- Succulent garden
- English garden
- California native garden
- Japanese garden
- Mediterranean low-maintenance garden
- Modern desert garden

Residents can choose the design that best fits their preference, lifestyle, house style and yard shape. The designs are family-, child- and pet-friendly. Recommended plants are listed on the website.

Rewarding experience

Customers who transform their yards can compete in a landscape contest within the Inland Empire region in the district's service area. Pictures of the

landscapes are judged by a panel of landscape architects and sponsors.

About 10 entries receive rewards of \$500; they are then entered in a social media competition known as the People's Choice campaign sponsored by *Inland Empire Magazine*. The winner is featured in the publication. The next landscape contest will be held in spring 2024.

Besides being popular with residents, the program was recognized for excellence in 2022 by California Association of Public Information Officials. It also received an Excellence in Public Information and Communications Award from CAPIO for the Landscape for Living microsite.

Feedback from residents includes praise for the ease and professionalism of working with contractors, accolades for district leadership in helping residents save water and money, and for the ease of going digital. "We are very focused on being a steward of water efficiency," says Shimmin. "This program is just one component of how we are doing that." ♦



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.

A BIGGER ANNUAL CONFERENCE

NASSCO has four big days of business and fun planned for April conference

By *Sheila Joy*

Per NASSCO bylaws, an Annual Conference is required to bring NASSCO business such as its annual report, operational budget and other important issues before NASSCO members. While association business is the primary purpose of NASSCO's Annual Conference, the event also provides an opportunity for education, committee meetings and networking.

NASSCO's 2025 Annual Conference is scheduled for April 7-10 at the Hyatt Regency

Huntington Beach Resort and Spa in Huntington Beach, California. In years past, post-event attendee surveys revealed that NASSCO members would prefer more time to meet in person to discuss committee goals and activities. In response, for the first time ever, the 2025 NASSCO Annual Conference will cover a period of four days, with an additional day set aside preconference for meetings by NASSCO's board of directors.

Day 1: Monday, April 7

The day will begin with optional participation in a golf tournament at Rancho San Joaquin Golf Course in Irvine, California. In the afternoon members and their invited guests can relax with lawn games at the resort. That evening, NASSCO will provide a special reception for all first-time attendees, followed by a welcome reception for all members and their guests.

Day 2: Tuesday, April 8

Tuesday will be all business. A general membership meeting will kick off the day, followed by committee meetings throughout the afternoon. While NASSCO members help direct the future of the organization, invited guests will enjoy an optional whale-watching excursion in Newport Beach. That evening, a sponsored cocktail hour will be a great way for members to wind down while the Executive Committee hosts a special private dinner for NASSCO's past presidents.

Day 3: Wednesday, April 9

Kicking off the morning with an optional yoga class or fun run on the beach, NASSCO members will get back to business with committee meetings scheduled throughout the day. That evening, after dinner on their own, members and invited guests will come together for s'mores at sunset on Huntington Beach, adjacent to the resort.

Day 4: Thursday, April 10

After another morning of group exercise options, the final day of the conference will begin with a special presentation by Dr. Lisa Kobos, associate service fellow at the National Institute of Occupational Safety and Health. She will present NIOSH's findings on a study of styrene used in the cured-in-place pipe process. NASSCO will also award the first-ever NASSCO Safety Recognition Award to one of its members. Following an afternoon of more committee meetings, members and invited guests will enjoy an awards banquet honoring our outgoing board of directors, welcoming our new board and providing special recognition to NASSCO trainers and volunteers, followed by dinner and dancing.

The 2025 NASSCO Annual Conference is open to all NASSCO members in good standing. To register, visit nassco.org/events. If you are not yet a NASSCO member, we hope you will become part of the NASSCO family by visiting nassco.org/join. ♦



NASSCO's vision to build awareness of aging underground infrastructure relies heavily on educating the industry of this critical need and providing viable solutions. Certification programs such as PACP™ and ITCP™—which ensure conditions are assessed accurately and rehabilitation projects are done properly—are the cornerstone of this objective. To achieve its mission to set standards, NASSCO also provides regional Exchange events as well as a variety of supplemental learning formats including webinars, educational videos and eLearning opportunities.



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ANALYZING HAZARDS ON THE JOB

We should be constantly evaluating how we can do our jobs safer

By Ronnie Freeman



This is essentially a job hazard analysis. It helps you take that step back and analyze what you are doing and provide you with the knowledge you need to work safely. By identifying and then mitigating hazards or potential hazards you are significantly reducing your risk of injury. It also provides a great opportunity to increase your overall safety program at work.

The employees who perform these hazardous job tasks are the perfect people to perform a job hazard analysis as their insights and knowledge are key to identifying the hazards others might miss or not recognize as hazards.

So, what are the steps in performing a job hazard analysis? The good news is that you can go online and simply type in job hazard analysis in the search engine and you should be able to find basic forms you can use. You can also customize them to your needs. It is vitally important that you document this procedure so that you have documentation to review in the future. This will come in handy when training new employees as well. This can also be a morale booster because employees will see that their safety is taken seriously.

Step one begins when you identify the task to be analyzed. Whether it is heavy equipment operation or conducting a line break repair, you can then begin your analysis. Take a step-by-step approach to identifying potential hazards. You can also review past incidents and lessons learned from these incidents, near misses involving these tasks are great to learn from, too. Sometimes, procedures can become outdated, and this is an opportunity to identify those procedures and improve them.

The next step would be to break down the task step by step to ensure each step is properly accounted for and analyzed. This is where the job hazard anal-

ysis form will come in handy. Writing down the steps of the task and then writing down the hazards or potential hazards will not only provide documentation, but it eliminates the memory loss that might occur over time if it is not documented. You can also video or take photos of the employee performing their task and review it together to ensure that the task was performed properly and all hazards are identified.

Once hazards are identified, the next step would be to decide what control measures are required to protect the employees from injury. Who does this hazard affect? What is the root cause of this hazard? Where does the hazard occur in the process of the job task? Sometimes it is how the task is being performed. Is the employee following proper safety protocols? Has the employee had proper training? Sometimes it might be outdated equipment or a procedure. It could also be where the task is being performed like near a roadway or under power lines. This is part of the process in identifying hazards or potential hazards. This is where OSHA's Hierarchy of Controls can be very helpful.

Once you have identified the most effective control measures your next step is to implement the control measures. This is where documenting the process comes into play as you can share this information with your colleagues and help them maintain a safe working environment as well. You should also seek to continually improve the process to determine the control measures you've implemented are still working.

OSHA regards using job hazard analysis as an important part of your workplace safety program. OSHA's website has some great information to help you get started. Making our workplaces as safe as possible and incorporating employee input is a great way to keep employee morale at a high level. ♦

Employees in the water and sewer industry are sometimes asked to perform certain hazardous tasks. These tasks, like trenching, confined-space entry, lockout/tagout and others involve putting our safety at risk if we are not performing the tasks in the safest possible manner.

We all know the risks, but have you ever taken a step back and looked at your work tasks and wondered if there was a safer way of performing your tasks? Asking the "What if?" questions that can provide you with the knowledge you need to become aware of a potential hazard on the job site can save you from a needless injury.

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cure are free of styrene and amines (and the odor) so projects are much less disruptive to communities and businesses. There are no working time considerations, liner can be wet-out remotely further saving time at the job site. The contractor simply turns the light on and off any time to stop or start the cure. The system has a 328-foot reach and produces thinner and stronger installations than steam, hot water or non-LED UV systems.

866-936-8476; www.pipelinert.com

Excavating Equipment

Valley Industries VIPower

The **VIPower** electric motor family from **Valley Industries** is designed to transform how industries manage maintenance, operational costs and environmental impact. Powered by Grade A LiFEPO4 batteries, these motors deliver more power than comparable gas engines, while offering durability and safety. With a universal mounting plate, replacing traditional gas engines is hassle-free. Enjoy savings on fuel, labor and maintenance while benefiting from quiet, fume-free operation — ideal for indoor jobs or noise-sensitive areas. The motor features a 3/4-inch drive shaft for quick compatibility with existing pumps, pulleys and other equipment. It offers adjustable motor speeds from 600 to 3,600 rpm for optimized performance. The IP65-rated TEFC motor provides protection from moisture, dust and contaminants, ensuring long-lasting reliability. Additionally, the centralized and removable control panel enhances ease of access and operation. **800-864-1649; www.valleyind.com**



CIPP



EMAGINEERED SOLUTIONS THE SHOOTER

THE SHOOTER from **EMAGINEERED SOLUTIONS** is a continuous air-inverter for CIPP. **THE SHOOTER 12** has a range of 4 to 12 inches and up to 15 inches with the conversion kit, as well as a knife gate for after the liner tail passes. It comes with either the self-lubricating hand truck or basic non-oiler cart. **THE SHOOTER 24** for 15 to 24 inches is trailer-mounted and comes with a knife gate and remote operating station on the fender. An optional conversion kit expands its range

from 6 to 24 inches. Additional equipment offered includes full steam packages with portable dry steam generators, steam hose, A and B stations, water cure flanges and LED UV Y adapters. **541-504-0416; www.theshootercipp.com**

HammerHead Trenchless Bluelight LED

The **Bluelight LED CIPP** lining system for laterals and small drainpipes from HammerHead Trenchless uses a specially formulated resin that only cures under light in the “blue” wavelength, giving installers a significantly longer working time between liner wet-out and curing. Once installed, the automated curing system pulls the LED light head through the liner, curing the resin almost instantly — up to five times faster than other methods. Instead of waiting hours for the liner to cure, a 50-foot sewer line could be fully cured in under 10 minutes. **800-331-6653; www.hammerheadtrenchless.com**



Grouting



Avanti International AV-100

AV-100 chemical grout from **Avanti International** is used to rehabilitate storm and sanitary sewer systems by eliminating infiltration in manholes, mainlines, joints, laterals and lateral connections, and before or after various forms of CIPP lining. It is injected after lining seals in the annular space between host pipe and liner, and lateral reinstatement, which are the primary sources of infiltration. It is an ultra-low viscosity, chemically reactive gel with a similar viscosity to water. It can permeate anywhere water can travel and has adjustable cure times from seconds to hours, creating an effective, long-lasting water barrier while providing soil stabilization. **800-877-2570; www.avantigrout.com**

CUES Easy Grout System

CUES offers a full line of portable, truck and trailer mounted grout rehabilitation systems for mainline, manhole and lateral joint sealing. The **Easy Grout** graphical user interface leads the contractor intuitively through the grouting process. The computerized grout control system is designed to consolidate all the valves, electrical controls, etc., into



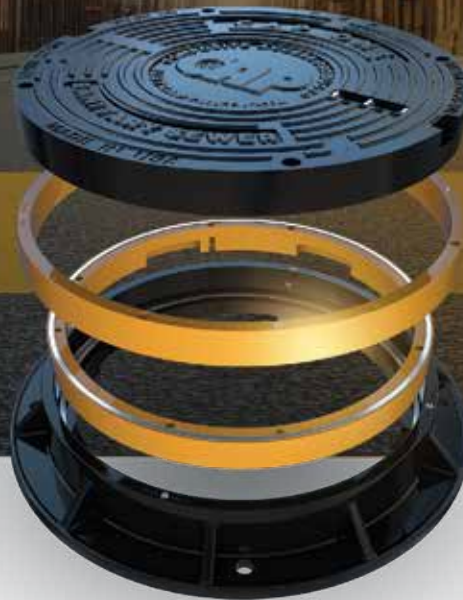


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an instrumentation cabinet that can be mounted in any location. The system and user interface includes help files and tool tip descriptions to assist new users and refresh users who have been away from operating for some time. Automated entry logic provides recommended settings for the grouting process automatically based on the basic inputs of pipe size, depth etc. Because the grout panel is now a computer user interface, it is no longer physically tied to the grout process equipment and can be located virtually anywhere a computer connection, wired or wireless, can be made. **800-327-7791; www.cuesinc.com**



Prime Resins PR10L Liquid Acrylamide Gel
PR10L Liquid Acrylamide Gel from Prime Resins is a super low viscosity acrylamide grout that yields a gel upon reaction. The grout solution is as thin as water, allowing it to follow infiltrating water for sealing leaks or to deeply penetrate soils for stabilization. The gel time is adjustable for a few seconds to several hours. The cured grout provides an economical water barrier or soil stabilizer. **800-321-7212; www.primeresins.com**

High-Pressure Water Pumps

Cat Pumps Hydroexcavating Pumps

Cat Pumps designed the models 2560 (16 gpm at 3,000 psi) and 2565 (20 gpm at 2,500 psi) to meet the hydroexcavating market needs. Constructed for continuous-duty applications, the pumps are available in versions with a machined bearing cover to mate with the 76SAEC.25FR hydraulic bell housing, allowing them to be directly driven by an SAE C hydraulic motor. The compact direct drive allows for a space-saving footprint, and being direct driven; it's simple to install and maintain. **763-780-5440; www.catpumps.com**



Dynablast Pratissoli KFR25

The **Pratissoli KFR25** water pump, distributed by Dynablast, offers 19.4 gpm at 3,200 psi at 1,000 rpm. It is available on a coupler-driven hydrovac skid or T14 female spline shaft input and SAE C 2/4 bolt flange for direct mounting to the hydraulic motor. It has run-dry seals, Kevlar graphite rope, a 420 stainless steel manifold for protection from cavitation, stainless steel valve cages for protection from cavitation, a self-lubricating design with no weekly oil lubrication required, a symmetrical crankcase that makes it easy to reverse-shaft the pump, a tapered roller bearing for improved lateral loading, and two bore ceramic plungers that are thicker ceramic on the water end to prevent from thermal shock. The hydrovac skid is designed to fit on a Danfoss 90M motor with 13/8-inch shaft. **905-867-4642; www.dynablast.ca**

Tsurumi Pump AVANT Series

The **Tsurumi Pump AVANT Series** offers reliable, high-efficiency, explosionproof pumps tailored for the needs of the wastewater industry. Engineered with modern wastewater challenges in mind, this line of submersible pumps is designed for optimal performance. The line features IE3 premium efficiency motors, helping to reduce energy consumption — a critical factor in long term wastewater applications.



Their robust stainless steel body ensures durability and resistance to corrosive environments. The MY and MQ Series offer five impeller types, ensuring the efficient handling of solids while preventing clogging. Both have a wide range of specifications including 2- to 16-inch discharge bore diameters and 4 to 215 hp motor output. The MQ Series boasts a closed-circuit cooling system that utilizes a water-glycol mixture, preventing contamination of the system while cooling the motor. The line combines high efficiency, solids handling, and low maintenance operations for wastewater operations. **888-878-7864; www.tsurumipump.com**

Point/Spot Repair



Infrastructure Repair Systems Infragard

Infragard concrete and manhole rehabilitation products from **Infrastructure Repair Systems** include Top Coat and Chim-Coat, which are nonhazardous ambient-cure epoxy systems for a small patch, entire manhole or retaining wall. This cost-effective solution requires no expensive equipment as it has an easy trowel-on application. They are corrosion-resistant and high strength with an impermeable structural bond to the substrate or to almost any concrete or metal surface. Chim-Coat is engineered with a flexible feature that maintains adhesion while expanding or contracting with changing temperatures and traffic loads. **877-327-4216; www.irs.net**

Pipe-Bursting Tools

PE Equipment PE-10

The **PE-10** from **PE Equipment** is a multifunction trenchless machine, primarily built for water and lead line replacement, utilizing a single chassis with interchangeable modules and a no-weld structural design. The modular chassis allows it to perform the functions of multiple machines, providing speed and flexibility when on job sites with difficult situations typically requiring multiple machines. The no-weld structural design allows for the replacement of any part by the user. It has the ability to change functions from a pipe bursting to rod-pushing module in 10 minutes. It has a small footprint under 4 by 2 feet, along with a lightweight chassis that can be carried by two people. It has a fast push/pull speed, capable of up to 13 feet per minute depending on conditions. **406-499-8136; www.pe-equipment.com**



Pow-R Mole Trenchless Solutions PD-33M

The **PD-33M** pipe-bursting machine from **Pow-R Mole Trenchless Solutions** is designed to replace existing underground pipes 2 to 6 inches in diameter. Its nonslip, cylinder-activated jaws prevent cable damage while providing 60,000 pounds of pulling force. It offers a cost-effective alternative to open cut excavation, reducing customer disruption and increasing company profits. The process replaces the existing pipe with a fused HDPE pipe, which eliminates all joints and allows the operator to pull through bends such as 45-degree fittings. This system is modular and can be easily disassembled and reassembled for manhole and basement applications. With a compact design and very small footprint of only 20 by 20 inches, this unit can be used in tight locations. **800-344-6653; www.powrmole.com**

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PRODUCT FOCUS

TRIC Tools E24

The **E24** revisits the essential **TRIC Tools 4-inch** lateral bursting package that created the industry of trenchless home sewer replacement decades ago. Redesigned with economy and practicality in mind, it is geared primarily toward residential bursting jobs up to 4 inches in diameter. The standard system includes a portable and reliable 10,000 psi electric pump plus lightweight 5/8-inch compact swaged cable. It is suitable for indoor use, difficult backyard easements and very tight spaces with limited access.

888-883-8742; www.trictools.com



Pipe Cutter



Reed Manufacturing Guillotine Pipe Cutters

Guillotine Pipe Cutters from **Reed** are designed to cut PE pipe within 1/8 inch of square on medium and high-density pipe. Manual, guillotine-style cutter slices smoothly through polyethylene. Three models cover from 1 1/2- to 12-inch pipe diameters. Accurate cuts mean no facing is needed for electrofusion and only minimal facing for butt fusion joints. These tools leave

a super smooth cut surface. A durable, nonstick-coated blade makes many square cuts with no chips to clog valves and small openings. A slight taper on the blade allows an easy start to the cut, and holds form for a nice, straight cut. Blades are easy to sharpen or replace. 814-452-3691; www.reedmfco.com

Pipe Lining

Epoxytec Series 456 CPP Sprayliner

Series 456 CPP Sprayliner from **Epoxytec** is a highly specialized product designed for water and wastewater environments, including the rehabilitation and lining of culverts. This two-component, 100% solids epoxy coating and lining system can be applied at an ultra-high build of up to 3/8



inch. It has high moisture tolerance and is engineered to protect against hydrogen sulfide corrosion. It also serves as a barrier to protect against I&I. It offers comprehensive defense against the challenges posed by water and wastewater environments. 877-463-7699; www.epoxytec.com



PPG Protective & Marine Coatings Raven 405

Raven 405 from **PPG Protective & Marine Coatings** is an epoxy coating designed to rehabilitate and protect concrete and steel structures exposed to the most severe wastewater conditions. It provides corrosion resistance in sanitary sewer systems and

ensures long-term durability, helping to extend the service life of aging infrastructure. Featuring high build capabilities and chemical resistance, it can be applied to structures such as manholes, wet wells, lift stations and pipe linings, preventing further degradation from hydrogen sulfide gasses and other corrosive agents.

888-977-4762; www.ppgpmc.com



Sealing Systems Flex-Seal 2.0

Flex-Seal 2.0 from **Sealing Systems** is an all-purpose sealant that adheres to many surfaces and has over 800% elongation. It is designed to prevent I&I and to provide corrosion protection at the grade adjustment ring section or joint section of manholes and catch basins. It is 100% safe and Prop 65 compliant.

The internal seal is manually applied using a paint brush and the kit is designed to cover 12 vertical inches on a 27-inch-diameter manhole.

800-478-2054; www.ssisealingsystems.com

The Strong Company Storm Seal

Storm Seal from **The Strong Company** is a cost effective solution for structural fatigue and corrosion in stormwater pipes. This system stops I&I and exfiltration, and restores structural integrity. It is a fiber-reinforced cementitious mixture designed for rehabilitating corrugated metal pipes, culverts, concrete pipes, catch basins and other stormwater structures, and is recommended in applications where there is no evidence of sulfide conditions. It is a high-strength mortar, reaching compressive strength of over 9,000 psi, and its erosion resistance is comparable to concrete pipes and culverts. It was evaluated by the AASHTO National Transportation Product Evaluation Program and is approved by DOTs across the United States. It is a monolithic liner (free of any joints) and can be applied to a variety of shapes and structures. It may be centrifugally cast or it may be sprayed manually.

800-982-8009; www.strongseal.com



Warrior Trenchless Solutions Thermoform

Thermoform from **Warrior Trenchless Solutions** is a PVC-alloy structural pipe lining system designed for the trenchless rehabilitation of failing sewer and culvert pipes. It is an environmentally friendly, styrene-free thermoplastic. There are no

harmful emissions, and it does not rely on any chemical reaction during installation. Factory-controlled production with rigorous material testing ensures a consistent quality product that conforms to and exceeds the expected standards. The material is highly flexible, allowing it to expand and fit tightly to the host pipe, including changes in shape and dimensions. It is produced in sizes ranging from 4 to 36 inches in diameter, and the wall thickness can be varied according to the application. All installers must be accredited and audited to ensure the highest quality work possible. 716-601-7760; www.thermoformliner.com

Reinstatement Cutter

RapidView IBAK North America MicroGator GT

The **MicroGator GT** from **RapidView IBAK North America** creates new possibilities for the controlled removal of large, resistant deposits in the pipeline. The rotating water-jet nozzle can be attached to a MicroGator tractor, with an additional high-pressure water hose, to transform the cutting and grinding robot into an ultra-high-pressure water jetting system. It has adjustable working pressure from 9,000 to 37,000 psi and 3 to 13 gpm. The CutterCam provides a constant view of the operating area so you can see exactly what you are cutting/jetting. It has a large range of motion with a 400-degree rotating elbow, full pan-and-tilt functionality,





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PRODUCT FOCUS

as well as 4th-Axis articulation, giving operators ultimate control during operations. There are a variety of different nozzle types available for purchase, including point blasting. **800-656-4225; www.rapidview.com**

Trenchless Relining Equipment



ACME Trenchless Pipe Winch

The **ACME Trenchless Pipe Winch** makes trenchless pipe pulling quick, and routinely easy. It delivers the pulling power needed — 20,000 pounds breakout force — applied to MAX 7/16 pulling cables which have a minimum rated breakpoint of 24,000 pounds. The pulling cables are reusable, and tensioned pulling cable remains inside the confines of the winch frame. It attaches to a compact excavator or backhoe via a quick coupler and will dispatch to the access pit at any approach angle, allowing for the preservation of the original bury depth of the existing waterline. It works with lead, galvanized, copper and plastic piping. **920-376-4222; www.acmetrenchless.com**

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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. They can be used for service laterals,



mainline sewers and wet well drops. The stainless brackets are easily installed adjustable clamping pipe brackets available in no-corrosive 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. Clamps are stocked for 1.5- to 30-inch SDR35, Schedule 40, HDPE, C900 and DN pipe. Modular Manhole Invert Channels improve manhole hydraulics, reducing maintenance, turbulence and odor.

800-508-6001; www.reliner.com

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Assisted Inspection Coding from **Itpipes** leverages artificial intelligence to streamline the inspection process. It automates defect detection and classification, boasting a 97% accuracy rate. The system rapidly processes footage, enabling cities to inspect larger portions of their networks faster,

with significant improvements in efficiency, productivity and accuracy. By reducing the time spent on manual coding, it allows operators to focus on high-priority issues flagged for human review. This AI-powered tool not only minimizes human error but also enables proactive maintenance strategies, helping municipalities reduce emergency repair costs and extend the life span of their infrastructure. Ideal for cities of all sizes, it offers scalable and adaptable solutions for improving asset management. **877-487-4737; www.itpipes.com** ♦



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Product Spotlight



Pipe fusion machine combines features into one innovative product

By Craig Mandli

Time is important. And there are several aspects of pipe fusion that take it — including loading pipe, cooling fused joints and moving the machine from one fusion site to another. Now an innovative fusion machine from McElroy reduces all of those time-takers — the Tritan 560.

The Tritan 560 offers a combination of rugged utility, operator safety and new technology to boost efficiency and reliability in the field. With its full 360-degree rotation and boom that can raise, extend and curl the carriage to approach and load pipe, the Tritan eliminates the need to top-load pipe into a fusion machine.

“As the needs of our customers continue to change in size and scope, McElroy is committed to providing the world’s most dependable pipe fusion equipment to ensure that each job is done right the first time,” says Chip McElroy, president and CEO. “It’s always an exciting opportunity to see how the

industry is evolving and discover how we can better meet the needs of the market.”

The Tritan 560 combines features from three of McElroy’s previous fusion models, including the rugged portability and technology of the Trac-Star iSeries, pipe loading capabilities of the Talon 2000, and the ability to meet the pipe where it lays, found in the company’s Acrobat QuikFit carriages. It can travel to and along the pipe where it lays, reducing or eliminating the need to pull pipe through the carriage in the field. With a full 360-degree rotation and a boom that can raise, extend and curl the carriage to approach and load pipe, it boosts job site efficiency and improves workplace safety by eliminating the need to top-load pipe into the fusion machine.

The Tritan’s bottom-loading carriage eliminates the need to lift pipe into the machine for standard fusions. The carriage is also fully removable

and able to operate in a 2+2 or 3+1 configuration, in both a top loading or bottom loading setup. In confined spaces or in-ditch applications, the carriage can be loaded directly onto the pipe from above, minimizing the amount of excavation required under the pipe.

The Tritan 560 was designed with operator safety in mind. All functions are wirelessly controlled with the DataLogger — a touchscreen tablet that captures the most important information related to fusion operations in real-time. No second remote is needed, as all controls have been integrated into the DataLogger tablet, allowing a single operator to control all parts of the pipe loading and fusion process.

918-836-8611; www.mcelroy.com

SPECIAL REPORT

OZ Lifting Products Alumi-Lite davit crane



OZ Lifting Products’ portable Alumi-Lite davit crane is constructed from lightweight, aerospace-grade aluminum, and boasts exceptional strength while being easy to transport. At just 24 pounds for the 500-pound-capacity model and 47 pounds for the 1,000-pound capacity, the crane is a game-changer for on-site lifting needs. The Alumi-Lite offers effortless assembly with no tools required, and its 360-degree rotation and adjustable boom height provide superior versatility. All OZ Lifting Products’ davit cranes come equipped with a

manual brake winch and a drill drive adapter, and AC and DC electric winches are also available. These cranes are made in the USA and each one is individually tested and certified at 125%, ensuring safety and reliability. **800-749-1064; www.ozliftingproducts.com**



KROHNE ENVIROMAG electromagnetic flowmeter

KROHNE’s ENVIROMAG is an advanced electromagnetic flowmeter engineered specifically for the water and wastewater industry in North America. Certified with NSF approval for potable water, the ENVIROMAG ensures safety and compliance with stringent North American standards. It features a robust design suitable for direct burial installations, with a NEMA 6P rating that guarantees protection against water ingress and environmental challenges. The ENVIROMAG comes equipped with multiple communication options, making it versatile and compatible with a wide range of control systems. It offers short inlet and outlet runs, remains unaffected by contamination, solids, fibers and slurries, and requires no maintenance. Each unit is wet calibrated, complete with a calibration report, and comes with continuous self-diagnostic features. Additionally, the ENVIROMAG is NSF approved with a hard rubber liner and is available with a “virtual reference” that eliminates the need for grounding rings. It is also hazardous-area approved for added safety and compliance.

800-356-9464; www.us.krohne.com

PRODUCT NEWS



Franklin Electric Minetuff Series submersible pumps

The Minetuff Series utilizes submersible pump and motor engineering technology from Franklin Electric, including a rugged construction with robust materials and adjustable hydraulics. The products are fully wet-tested in-house for quality control and are designed to handle small abrasives like sand, small stones and clay. Each pump is manufactured with a Class H insulation system and thermal overload protection for heavy-duty applications and extended pump life. As part of the Pioneer Pump portfolio, the pumps are fully supported with Franklin Electric resources like FranklinTECH Online and replacement parts kits. **866-271-2859; www.franklinwater.com**



Vermeer MX150 mixing system

The new Vermeer MX150 mixing system offers contractors a compact, powerful solution designed to optimize productivity in tight spaces. Featuring a Kohler 7 hp gas engine that delivers a maximum flow of 150 gpm, the MX150 mixing system provides quick yield times to get drilling faster.

Its slim profile and customizable configuration options make it an ideal companion for small to mid-size utility HDD projects. The mixing system can be paired with 300- or 500-gallon narrow or 500-gallon wide tanks, allowing contractors to customize setup based on job requirements. Its 24.4-inch narrow tank width enables the MX150 to fit alongside mid-size utility directional drills, making efficient use of trailer space. The system features a specially designed tank shape that allows for efficient fluid mixing and minimizes solids settling at the bottom. The unit also includes a convenient garden hose fitting for easy cleaning of the hopper and machine. **641-628-3141; www.vermeer.com** ♦



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Felling Trailers names two new sales managers for western U.S.

Felling Trailers has appointed Kevin Maves and Carl Thigpen to its outside sales team to represent the company in the western U.S. Maves will serve the Southwest, covering California, Nevada, Arizona and New Mexico. Thigpen will serve the Northwest, covering Alaska, Oregon, Washington, Idaho, Montana, Wyoming, Utah and Colorado. They will be responsible for all sales development, activity and dealer support in their respective regions.



Carl Thigpen Kevin Maves

Franklin Electric realigns water systems expertise and manufacturing

To support the availability of configured-to-order pumping solutions, packaged systems and aftermarket re-bowling services for turbines, Franklin Electric is realigning Headwater Companies' Engineered Systems facility in Abernathy, Texas, to its Global Water Systems segment. The move will allow Franklin Electric to increase its investment in water systems product innovation. The 84,000-square-foot manufacturing and testing facility near Lubbock Preston Smith International Airport will support commercial, industrial, municipal, agricultural and irrigation markets.

120Water welcomes Jennifer Fulk as CFO and COO

120Water has appointed Jennifer Fulk as the company's new chief financial officer and chief operating officer. Fulk joins 120Water with a wealth of experience in finance and operations, having most recently served as the CFO of Talkspace and having held several senior leadership roles at Eli Lilly.

Hultec announces strategic brand alignment

Hultec announced a strategic brand alignment that brings together several companies it owns under a singular global name called Hultec. Incorporated in the new unified Hultec brand are S&B Technical Products serving the water, wastewater and stormwater industries; RieberLok self-restraining gaskets; and Terramix, the company's primary research and manufacturing arm in Costa Rica. The brand consolidation — which includes a new Hultec identity, logo and website — completes a year of strategic analysis and creative development following Industrial Growth Partners' acquisition of Hultec and its affiliated brands in September 2023.

Duperon appoints new regional sales manager

Building on its international growth, Duperon Corp. is expanding its focus to the industrial sector, welcoming John Charlton as regional sales manager. With over 20 years' experience with water and wastewater technologies, Charlton will work with key partners in sectors like food and beverage and pulp and paper to promote Duperon's solutions, known for optimizing process wastewater treatment, reducing costs and ensuring regulatory and environmental compliance. Over the past decade, Charlton held the role of regional sales manager at a leading manufacturer and supplier of specialty chemicals and nature-based materials.

Brandt Hydrovac launches high-output unit in U.S. market

Brandt Industries has released its hydrovacacs to contractors across the U.S. The units will help contractors work more efficiently with maximized legal load weights, quicker debris loading and unloading time, and the capacity to take on larger jobs without load weight concerns.

EnBiorganic Technologies completes trial in Illinois

EnBiorganic Technologies announced the successful completion of a wastewater treatment trial in North Utica, Illinois, utilizing the EBS-Di system. This trial, conducted in collaboration with the town of North Utica, focused on addressing key compliance and operational challenges in the town's wastewater treatment infrastructure. The EBS-Di system, designed by EnBiorganic Technologies, integrates organic bacillus soil bacteria into the wastewater treatment process. This approach was aimed at improving compliance with NPDES permits, reducing total suspended solids and managing fecal coliform levels. The system was fully commissioned in December 2023, and has since demonstrated improvements in wastewater quality.

McElroy adds to its Fusion Hall of Fame

McElroy has added Bob Biffle, Mike Lee and David Lee to the 2024 Fusion Hall of Fame. Created in 2019, the Fusion Hall of Fame recognizes the innovators whose commitment to development and acceptance of fusible plastic pipe has significantly advanced the fusible plastic pipe industry over the past 50 years. Inductees are individuals whose contributions have been particularly notable and whose impact and influence on the industry lives on today.



Mike (left) and David Lee

Through his nearly 33-year tenure with McElroy, Biffle developed a reputation for being a patient teacher, a skilled technician and a committed member of the McElroy team. Mike and David, owners of Pennsylvania-based Lee Supply, diversified its products to include industrial, municipal and environmental markets, introducing high-density polyethylene pipe, specialty fittings and custom fabrications.



Bob Biffle

Phase 2 of sewer program completed in Maspeth, New York

The NYC Department of Environmental Protection and the NYC Department of Design and Construction announced the completion of a \$106 million infrastructure project in Maspeth, Queens, that is the second of three that are creating a new drainage network through Central Queens. The project also upgraded over a mile of watermains and replaced smaller, local combined and sanitary sewers. DDC managed the project for DEP and DOT, and successfully used micro-tunneling technology throughout large parts of it to minimize construction impacts during work. A third project is currently being designed in-house at DDC and is expected to start construction in mid-2026 with an estimated budget of roughly \$80 million. ♦



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WORTH NOTING

PEOPLE/AWARDS

The city of Marysville (Idaho) Downtown Stormwater Treatment Park received the Innovative Stormwater Project Award from the Pacific Northwest Clean Water Association. The facility, which treats 460 acres of urban runoff, takes up only a half-acre of size by using new media – the Filterra Bioscape system – for the first time at this scale.

The city of Griffin (Georgia) hired Jeremy Kenway as the director of its stormwater department. He previously served as the department's superintendent.

The city of Wilson (North Carolina) received an \$875,331 grant from the Golden Leaf Foundation as part of the organization's \$25 million Flood Mitigation Program. The grant will be used to design and construct stormwater flood control measures at Carolina Street Park and Freeman Park.

The town of Bourne (Massachusetts) received a \$375,000 grant awarded by the Buzzards Bay National Estuary Program through the Massachusetts Office of Coastal Zone Management. The grant will be used to construct a stormwater treatment system to address contaminated runoff from a parking lot at Queen Sewell Pond beach.

The town of Nags Head (North Carolina) received a \$2.3 million grant from the North Carolina Department of Environmental Quality to address stormwater and flooding issues in the northern part of the town. ♦

CALENDAR

Feb. 2-4

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

Feb. 11-14

The Utility Management Conference, presented by the Water Environment Federation and the American Water Works Association, Hilton Anatole, Dallas. Visit awwa.org.

Feb. 24-25

Stormwater USA 2025, Anaheim Convention Center, California. Visit usa.stormwater-summit.com.

Feb. 25-28

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

March 5-7

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

April 8-10

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

May 8-9

Ohio Stormwater Association 2025 Ohio Stormwater Conference, location TBA. Visit ohstormwaterconference.com.

May 18-22

Association of State Floodplain Managers National Conference, Sheraton New Orleans Hotel. Visit floods.org.

May 20-21

Washington State Municipal Stormwater Conference, Hilton, Vancouver, Washington. Visit wastormwatercenter.org.

June 8-11

American Water Works Association ACE25 Conference, Colorado Convention Center, Denver. Visit awwa.org.

June 15-18

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

Aug. 26-28

StormCon 2025, Gaylord Palms Resort & Convention Center, Orlando, Florida. Visit stormcon.com.

Sept. 15-17

California Stormwater Quality Association Annual Conference, Pasadena Convention Center. Visit casqa.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.

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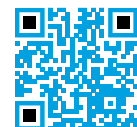
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