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February 2018

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# SEEING GREEN IN THE SILICON VALLEY

San Jose is ahead of the curve  
in adopting new techniques  
to control stormwater and  
reduce pollution

PAGE 26



Kerrie Romanow  
Environmental Services Director  
City of San Jose, California

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**SHOW ISSUE**



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# INSIDE:

PIPELINE AND INFRASTRUCTURE, HYDRANTS



ON THE COVER: San Jose Environmental Services Director Kerrie Romanow has helped her department evolve into an environmentally sensitive stormwater management agency and a leader in innovative green infrastructure initiatives. (Photography by David Elkins)



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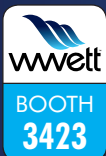


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


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# LEARNING FROM THE INDUSTRY

The perspective of your peers and knowledge of equipment manufacturers can make you more successful

One of my best friends is the foreman at a local water department. Talking shop with him is a great reminder of all the things I don't know.

I probably read more about industry trends and developments than he does because that's my job, but he's the one in the field every day. His knowledge is based on years of experience with his water department. Mine comes mostly from reading and conversations with people like you. But I'm sometimes amazed at how much I've learned from those conversations.

You're in the field every day and have plenty of perspective on the work you do. But, how often do you talk to other utility operators, contractors or equipment manufacturers to gain their perspective? We try to do that with every issue of this magazine, but sometimes you have to ask your own questions.



## FROM THE EDITOR

*Luke Laggis*

There's no better place to do just that than the Water & Wastewater Equipment, Treatment & Transport (WWETT) Show.

This year's WWETT Show, once again being held at the Indiana Convention Center in Indianapolis, gets underway with Education Day on Feb. 21. The exhibit hall opens the following day and gives you three days' worth of opportunity to see and discuss all the tools that can help you do your work more efficiently.

And, of course, there's no bigger gathering of your peers and no greater opportunity to compare notes and gain the perspective of other successful operators. Think of it as four fun days of training and education to make your utility stronger.

I've met a lot of people at the show — a lot of people, like my buddy, who have given me a better understanding of the jobs you do every day and what it takes to be successful in this industry. I'm always appreciative of that.

It might not be a full escape from winter, but the WWETT Show is a chance to get away from the day to day and do something that will pay dividends in the long run. Plus, you can move around a lot of downtown Indy without ever going outside, and the shrimp cocktail at St. Elmo Steak House will put you in a warmer frame of mind.

I'll be at the show again this year, and I hope you will be, too. If you see me out on the floor, feel free to introduce yourself. I'm always interested in hearing your stories. And if I don't see you, I appreciate your calls and emails as well. Your stories are what make this magazine work, and they help others do their work better.

Enjoy this month's issue. ♦

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

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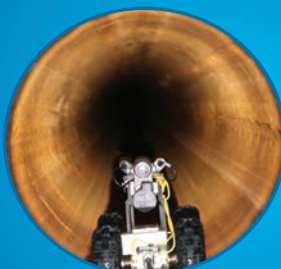
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## OVERHEARD ONLINE

“If you find ways to spend shrinking funds better by targeting prioritized areas, a condition assessment program will always pay for itself and deliver a return on investment.”

— *Maximizing the Value and Benefit of Your Utility's Buried Assets* [mswmag.com/featured](http://mswmag.com/featured)

## CAUSE AND EFFECT

### How California Wildfires Impacted a Drinking Water Source

For a decade, scientists at the Lawrence Berkeley National Laboratory have studied the factors behind the success of Sonoma, California's riverbank filtration system, which feeds a groundwater system that serves as the main source of drinking water for 600,000 people. Scientists were already looking at the potential impact of fires on the delivery of nutrients, solutes, and metals to the river. October's catastrophic wildfires turned that hypothetical into a real-world situation to be studied. [mswmag.com/featured](http://mswmag.com/featured)

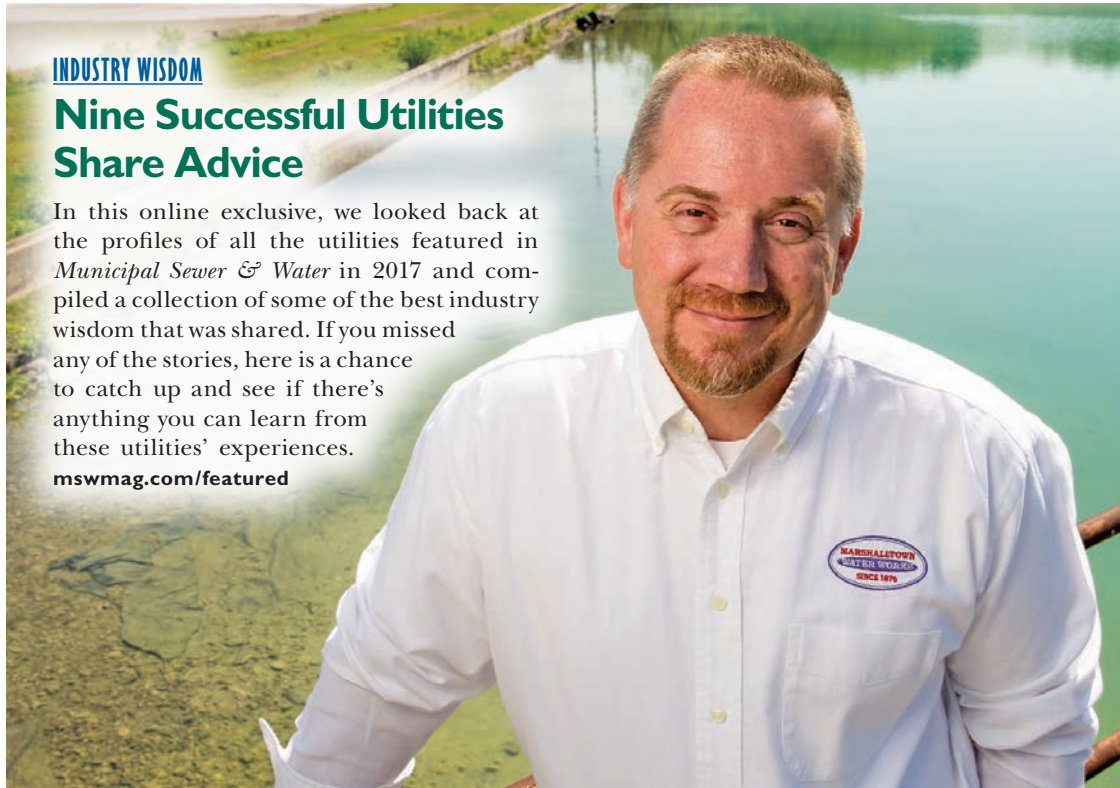


## INDUSTRY WISDOM

### Nine Successful Utilities Share Advice

In this online exclusive, we looked back at the profiles of all the utilities featured in *Municipal Sewer & Water* in 2017 and compiled a collection of some of the best industry wisdom that was shared. If you missed any of the stories, here is a chance to catch up and see if there's anything you can learn from these utilities' experiences.

[mswmag.com/featured](http://mswmag.com/featured)



## AWARD WINNER

### Utility Directs Federal Funds to Customers' Sewer Lateral Replacements

The EPA identified 28 projects in 2017 as part of an annual awards program recognizing innovative projects that have made use of the federal low-interest loan program, the Clean Water State Revolving Fund. Here's a look at one of five projects that was given "exceptional" honors — a sewer lateral replacement program in Little Rock, Arkansas. [mswmag.com/featured](http://mswmag.com/featured)



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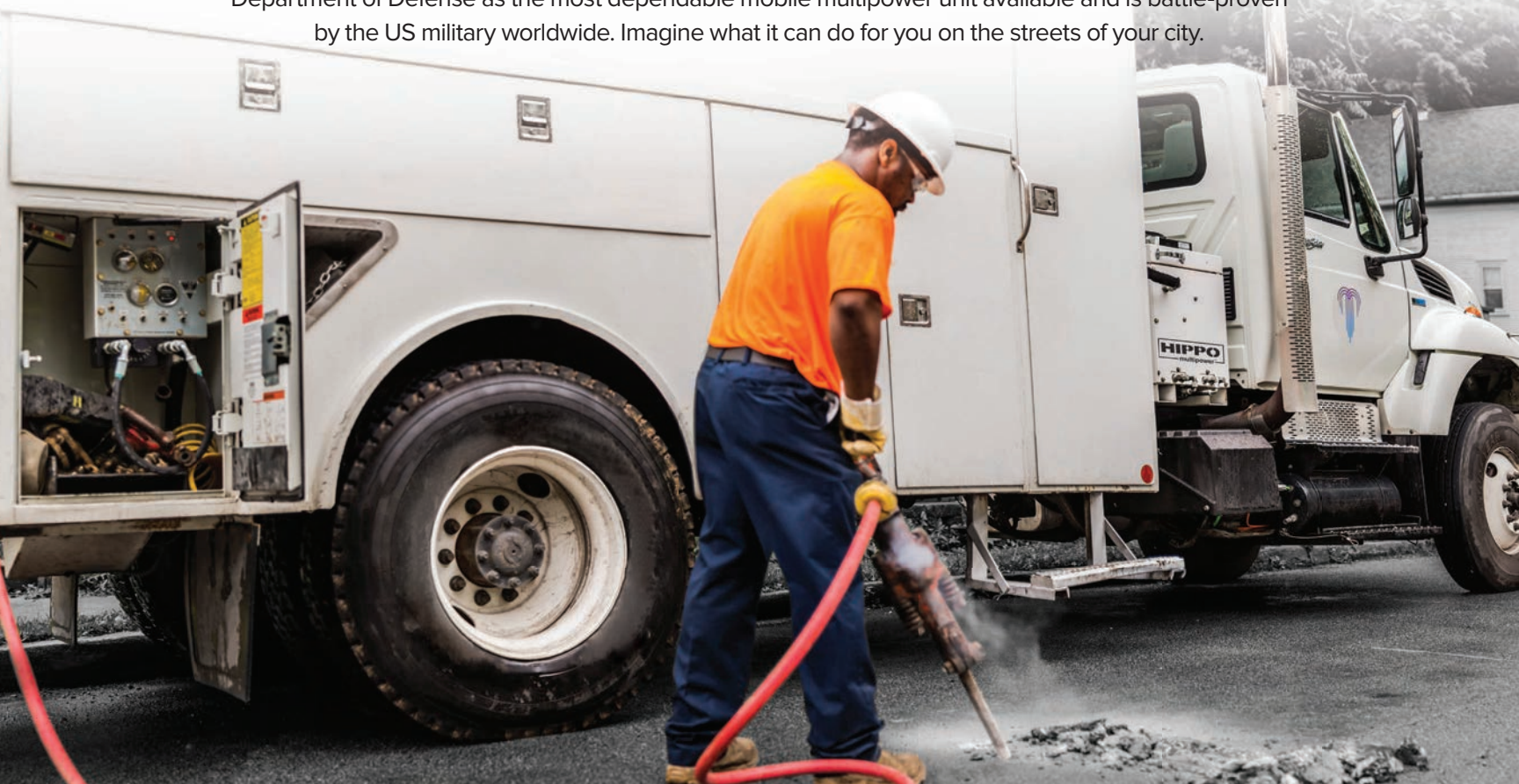




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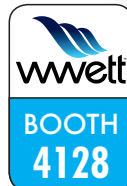
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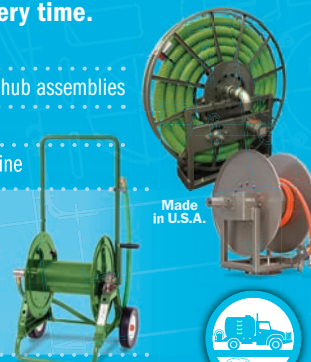
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# EMBRACING THE CHALLENGE

Collections operator elevates inspection program to new level and takes away top honors

*By Jared Raney*





Dean Ronk replaces a manhole cover after using a Camel jet/vac truck to clean the sewer line.

Giving 110 percent is the clichéd territory of coaches and bad managers. Giving 150 percent is Dean Ronk's territory.

That's essentially what Ronk, a collections system operator with the Roseburg (Oregon) Urban Sanitary Authority, was asked to do when he was tasked with taking the 160-mile system from a 10-year inspection cycle to a seven-year cycle.

That equates to 23 miles per year — just shy of a 150 percent increase from the previous 16-mile-per-year goal. And that's not counting the 4,100 manholes that are also part of the seven-year cycle.

"A 10-year program, that's really nothing," Ronk says. "I mean, anybody could get that done, but a seven-year, that was a big challenge."

It would be a lofty target for any small-utility operator, but Ronk not only hit that benchmark, he overshot it.

"Currently, he's working on about a 6.4-year completion," says Steve Lusch, collections system superintendent with the Roseburg Urban Sanitary Authority. "He basically does that all on his own; he runs that program, and we gave him a timeline."

**"Making sure that everything is done right ... that's something that was bred into me — that its gotta be done right. To me, if a job is worth doing, it's worth doing right — that's my feeling."**

Dean Ronk

No surprise then that in 2017 he was recognized locally and regionally as Collections Operator of the Year by the Umpqua Basin Operators Section and Pacific Northwest Clean Water Association.

It was a poignant end to Ronk's career, as the 64-year-old operator has decided to retire when he turns 65 in June.

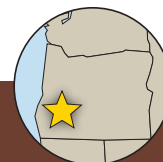
#### Doing it right

Ask around and you'll hear one word used over and over to describe Ronk.

"He's very meticulous in what he does — not only in the planning phase of it, but also when he's TV-ing. He's very meticulous," Lusch says. "So we can really be confident when we're working with contractors ... because we have confidence in what he tells us."

With that detail-oriented approach, he ascended through the ranks of the Roseburg Urban Sanitary Authority during his 16 years' service, culminating in the Collections Operator of the Year awards.

"Making sure that everything is done right ... that's something that was bred into me — that its gotta be done right. To



#### PROFILE:

Dean Ronk,  
Roseburg (Oregon)  
Urban Sanitary Authority

**POSITION:**  
1970

**EXPERIENCE:**  
16 years with Roseburg Urban Sanitary Authority

**MEMBERSHIPS:**  
Umpqua Basin Operators Section,  
Pacific Northwest Clean Water Association, Water Environment Federation

**CERTIFICATIONS:**  
NASSCO Pipeline Assessment Certification Program, Manhole Assessment and Certification Program and Lateral Assessment and Certification Program

**AWARDS:**  
2017 Umpqua Basin Operators Section Collections Operator of the Year, 2017 Pacific Northwest Clean Water Association Collections Operator of the Year

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Dean Ronk is an award-winning wastewater collections operator with the Roseburg (Washington) Urban Sanitary Authority. (Photography by Ethan Rocke)





**Above:** Dean Ronk sits at his operator's station, monitoring the camera's progress and coding defects during a sewer line inspection. **Left:** Ronk washes of an EnviroSight camera and transporter after completing the inspection.



me, if a job is worth doing, it's worth doing right — that's my feeling. And you just don't go at it doing something halfway," Ronk says. "That's the way I do my work."

### Getting it done

"What I enjoy most about this job is the challenge," Ronk says.

The Roseburg Urban Sanitary Authority has only been around 30 years, but the system itself is a century old in places. As anyone who manages aging infrastructure can tell you, staying on top of inspections is key to maintaining and getting the most out of the system.

"Going from a 10-year to a seven-year cycle has put a challenge on," Ronk says. "We gotta keep the (inspection van) up and running at all times in order to be able to meet that goal, and right now, I'm a little bit ahead of it."

Ronk worked in the timber industry before coming to the Roseburg Urban Sanitary Authority with no experience in pipeline inspection,

or with water systems in general for that matter. But with his inherent assets, like his meticulous nature and commitment to reaching goals, there was no surprise that he rose to such prominence.

"Dean is a very responsible individual, and I know that when I ask him to do something, it'll get done," Lusch says. "In a different situation, I'd probably be working for Dean. He's that type of employee. He comes up with a lot of good ideas, and I value his input on any kind of decisions that I have to make as well."

### Part of the family

Ronk is not the first Roseburg Urban Sanitary Authority operator to be awarded the Umpqua Basin Operators Section Collections Operator of the Year award. Thomas Nigh, a collections system foreman who was profiled in *Municipal Sewer & Water* in 2014, has also earned the honor.

It's not a coincidence that two operators from the small utility, which is comprised of only 15 full-



**“Dean is a very responsible individual, and I know that when I ask him to do something, it’ll get done. In a different situation, I’d probably be working for Dean. He’s that type of employee.”**

**Steve Lusch**

time collections system employees, have been recognized.

“We work really close here. We’re as much of a family almost as our own families. And we spend a lot of time together,” Lusch says. “I think that builds unit cohesiveness. And I think it makes employees really want to work for you, and they really want to do well, and they want to produce for you.”

That mindset isn’t an accident either, and it is promoted from the management level. “It comes from the top down; it really does,” Lusch says.

It’s a mentality, but there’s also a practical end to the employee-first approach. “(The general manager is) a very big proponent of operator training. So if our employees need some kind of training or they feel they need some kind of training, they just have to ask,” Lusch says. “He’s a proponent of that and hardly ever refuses the training, if it’s something we need.”

## HONORABLE DISCHARGE

After 16 years’ exemplary service to the Roseburg (Oregon) Urban Sanitary Authority, Dean Ronk has decided to cash in his chips. Fittingly, he closed out his last full year by being named 2017 Collections Operator of the Year by both the local Umpqua Basin Operators Section and the regional Pacific Northwest Clean Water Association.

“The award was a biggie. I’ve only got a short time before I’m actually turned out into the pasture,” Ronk says. “It was a shock to me and also to my wife. She was very excited about it.”

He and his wife, high school sweethearts of 45 years, plan to spend time traveling in retirement, camping and vacationing in addition to spending time with their two sons, 44 and 41, and five grandchildren. The pair are resort-hoppers — Disneyland is one of his wife’s favorite destinations — and have also visited Hawaii, with ideas of doing so again.

Ronk says his wife played a role in his recent success as well. “She’s always behind me 100 percent, whatever I do in my job,” Ronk says. “She’s a big help for me.”

### Going out on top

Ronk had already decided to retire when he found out about the awards, and they were a fitting reward for a dedicated career — though he remains modest.

“I’m not one for bragging on myself,” Ronk says. “It was a pretty good honor. I didn’t think I’d ever get something like that.”

Though a pleasant surprise for the veteran operator, he may have been the only one surprised by the nomination. “I felt like Dean deserved that, to be nominated for the award,” Lusch says. “I think he outshines any of the other operators in our area.” ♦

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# A BETTER VALUE IN MAIN REPLACEMENT

Prechlorinated pipe bursting provides value, longer service life, and reduced environmental impact

By Todd Grafenauer

When Englishman Andy Mayer first visited the U.S. in 1999, he was shocked that such an advanced country was still using 20-ton excavators with 4-foot-wide buckets to install 6-inch pipe through the middle of subdivisions. He immediately saw the need for prechlorinated pipe bursting.

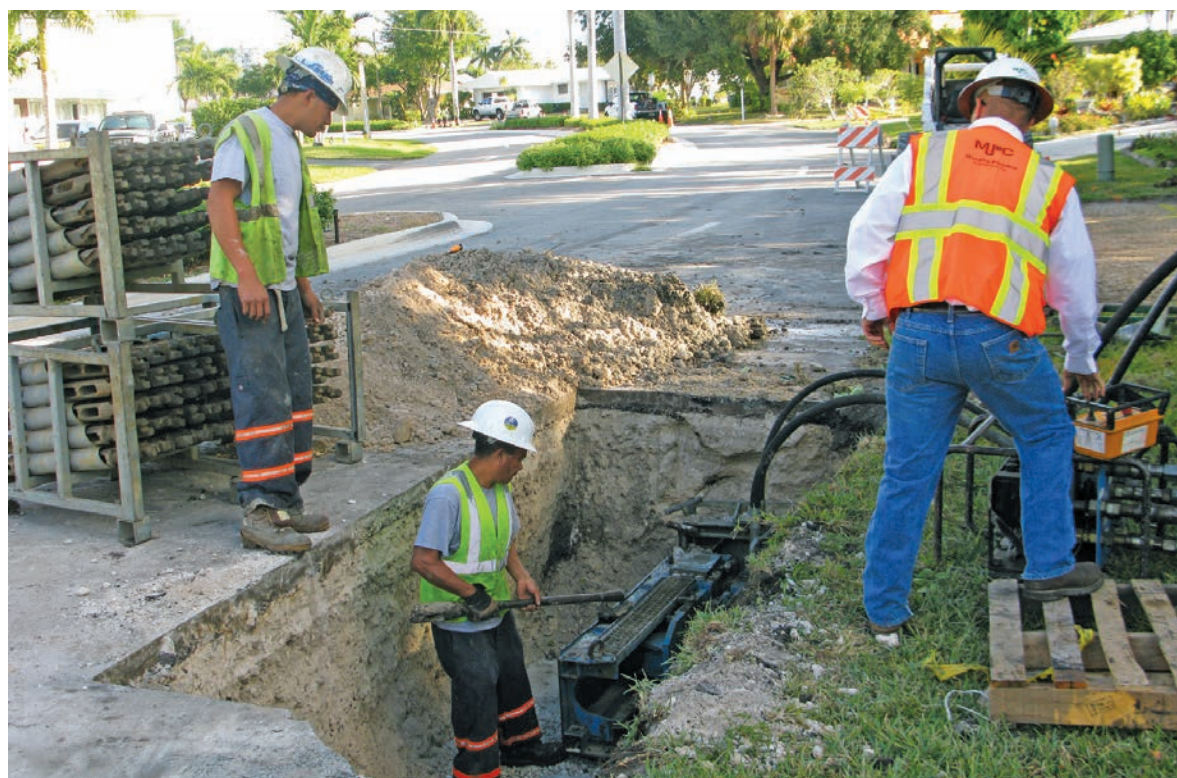
Shortly after Mayer's introduction of the technology to North America, he spearheaded the efforts through education. Over the past two decades, prechlorinated pipe bursting has transformed the landscape of water main replacement technology by delivering value not seen with other construction methods.

## A new way

Pipe bursting itself was developed in England about 40 years ago, the result of outdated pipelines and a few high-profile failures that led to a government mandate requiring the rehabilitation of aging gas infrastructure across the country. British Gas, owner of the largest gas distribution network at the time, was left with a dilemma of how to replace such a vast quantity of pipelines.

Replacing buried utilities was especially difficult in a city like London with its population of 13 million, swelling to 17 million during working hours, and its hundreds-of-years-old roads, sidewalks, and buildings. Limited easements and undersized distribution lines further complicated matters. British Gas needed an alternative to conventional open-trench work.

After much research and development, pipe bursting was born in the late 1970s, finally giving British Gas the tool to replace its existing pipelines in highly congested utility areas. With the success in pipe bursting natural



Static pipe bursting equipment is set up in the receiving pit where crew members send bursting rods through the host pipe to the launch pit. There, the rod string will be attached to the bursting head and new HDPE pipe before being pulled back through.

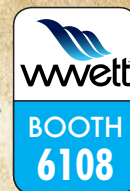
gas lines, other utilities began to take notice of the technology and began to examine whether it would work for their systems, specifically waterlines and sewer lines.

Anglian Water in England took the technology one step further, developing a way of testing and chlorinating the new pipe above ground, then pulling it into place, super chlorinating, flushing and commissioning the new line — all in one day. This spawned the term prechlorinated pipe bursting.

In 2000, Mayer moved to the U.S. full time to establish Murphy Pipelines Contractors and introduce prechlorinated pipe bursting to North America.

(continued)





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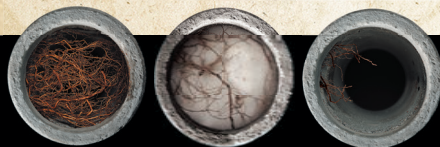


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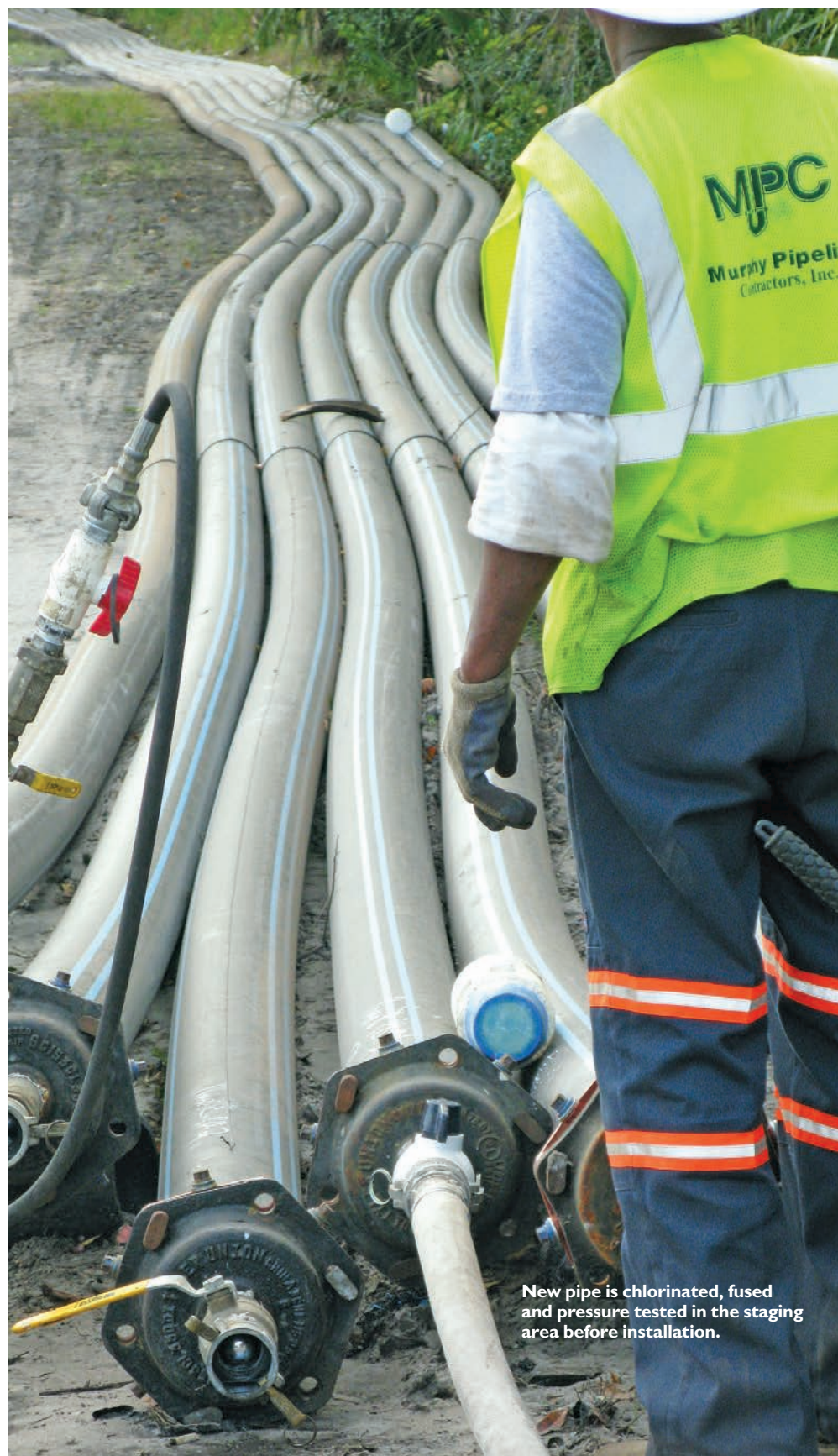
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New pipe is chlorinated, fused and pressure tested in the staging area before installation.

## The process

Prechlorinated pipe bursting utilizes HDPE pipe and entails the preassembly and testing of approximately 300- to 600-foot lengths of pipe above grade at a nearby staging location. The staging area is located away from the burst locations to further minimize the impact of construction on the community. Once the pipe is proven to be sound by the pressure and disinfection testing, a series of small excavations are made and the new pipe is pulled into place by bursting the existing main. A post-chlorination and flushing of the main is then performed, and the new line is connected to the distribution system.

Ultimately, all services are connected in the new main and the surface area is backfilled to preconstruction grade. The entire process is completed within a single day, six to eight hours.

## Less impact

Almost all communities have the need to replace old water pipelines, with limited resources. Today, we have multiple methods to pick from, ranging from traditional open cut to directional drilling, lining, and pipe bursting. When communities compare these methods and try to select the best option for a given project, they often find great value in prechlorinated pipe bursting.

As mentioned, the technology replaces 300 to 600 feet of pipe per day, which includes the main, services, hydrant, and valve, with pits backfilled. This speed of installation means large projects are completed in half the time of traditional methods.

Community impact is always at the top of the list when engineers compare water main replacement methods. Pipe bursting reduces excavation up to 86 percent. These surgical excavations lessen the environmental impact, saving trees, roads, front yards and landscaping. Because the process uses less and smaller equipment, it also helps the community be more environmentally friendly by reducing greenhouse gas emissions from heavy equipment by 70 to 80 percent versus open-cut projects. There is also reduced noise and dust for residents to contend with.

Methods that are customer friendly in the construction world have always been challenging. With prechlorination, services are maintained and connected the same day. Compared to traditional open-cut replacement, prechlorinated bursting reduces customer complaints by more than 95 percent on average, thanks in large part to less excavation and the reduction of social impact as traffic can continue to flow freely.





A crew member works at the entry pit, guiding new HDPE into the host pipe on a prechlorinated pipe bursting job.

Static pipe bursting also allows for the replacement of same or larger size pipe, all within the same utility path. Following the existing utility path allows communities to work off their existing GIS system for design, which requires less engineering than other construction methods and can fast-track projects to construction.

#### Overall value

High-density polyethylene pipe (HDPE/PE4710) has one of the longest design lives of any piping system available in the market, as tested by third-party labs and documented in multiple publications worldwide. The material is also fatigue- and seismic-resistant, moving with any ground movement, which eliminates a main cause of failure in more rigid or brittle piping systems. It also moves with freeze/thaw events and wet/dry cycles.

The constructability of utilizing HDPE pipe with trenchless applications is significant. The material is lightweight and flexible with an allowable bending radius of 20 to 25 times the outside diameter of the pipe. It also has high impact strength.

While many communities may select prechlorinated pipe bursting based on its overall value, cost is still a major factor in decisions. Traditionally, based on the evidence of reducing upfront engineering costs, completing projects faster, and requiring 86 percent less restoration, prechlorinated pipe bursting typically reduces cost as much as 25 percent over traditional open cut.

As communities demand more value from dollars spent, prechlorinated pipe bursting continues to deliver an efficient process with a reduction in cost and community impact.

"Any other method would require the contractor to be in front of homes for days, sometimes weeks," says Jessie Allen, a senior engineer with Arlington Water Utilities in Texas who has utilized the process on multiple projects. "And with efficiency, you can see how the process is aesthetically pleasing. As

many of the residents along our projects are at work during the day, when they return, they hardly notice that anything has been done on their street. Customer satisfaction is key. If homeowners don't know that their water main has been replaced and we don't get customer complaints, we are receiving the value that the method offers." ♦

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# SEEING GREEN IN THE SILICON VALLEY

San Jose is ahead of the curve in adopting new techniques to control stormwater and reduce pollution

By Giles Lambertson



San Jose's "green streets" program is aimed at treating stormwater naturally with soils and vegetation in shallow basins, removing pollutants before the runoff reaches the San Francisco Bay. (Photography by David Elkins)





**A cyclist speeds past a stormwater collection point on Park Avenue in San Jose. The green stormwater features have beautified local roadways and improved safety by eliminating pooling runoff water.**



San Jose fits snugly in the center of California's Santa Clara Valley, like an idyllic urban micro-chip. The so-called Capital of Silicon Valley is notably affluent and graced with a Mediterranean climate to the delight of its outdoorsy residents.

"We're very fortunate to have 300 days of sunshine every year," says Kerrie Romanow, director of the San Jose Environmental Services Department. "People spend a lot of time outdoors and are connected to the environment, so the (San Francisco) Bay and our creeks and streams are important to us. It's really important to keep those waterways clean."

The city receives just 16 to 18 inches of rainfall a year, which means that between rain events, pollutants build up on unwashed pavement, roofs, and other surfaces. "The concentration of pollution is higher when we do get those rains, so it's even more important that we manage the runoff."

Because its technology-powered economy makes the valley among the wealthiest urban areas in the U.S., the city and county jurisdictions have plentiful tax resources to draw upon in funding stormwater and sanitary sewer systems and solutions. Consequently, 'green' stormwater initiatives and prototype programs often spring up in San Jose or are adapted there and built out to a scale

beyond the financial reach of many jurisdictions.

"I would say we are one of the leaders in green initiatives," says Jeff Sinclair, the city's Environmental Services supervisor. "San Jose is known throughout the Bay Area as a leader."

### **Out of the gutter**

One example is San Jose's "green street" infrastructure projects, an idea actually imported from Portland, Oregon. In November, San Jose completed a second prototype of this stormwater runoff technique, targeting four intersections on Park Avenue. Asphalt was replaced with permeable pavement and curbside rain gardens. Each garden is a slightly sunken drainage area between street and sidewalk that runoff can enter through curb cuts.

In the decoratively planted garden, water is filtered through stones, mulch and a soil mix. In this way, the runoff is eased back into subsoil instead of accumulating on the surface and rushing into a stormwater gutter. An overflow drain in

**"I would say we are one of the leaders in green initiatives. San Jose is known throughout the Bay Area as a leader."**

**Jeff Sinclair**

the garden handles pooled water when a particularly heavy rainfall overpowers natural drainage.

Some 6,500 square feet of rain gardens were constructed on the street and 2,800 square feet of permeable pavers laid. The two features work together, with the pavers reducing runoff to volumes that the gardens can absorb. In another neighborhood where pooling was common after rains, alleys were repaved so that their centers





**“Environmental initiatives are just what we do and should not be isolated. They are not tracked separately. We look at what will help in the long term.”**

**Kerrie Romanow**

**San Jose Environmental Services Director Kerrie Romanow has helped her department evolve into an environmentally sensitive stormwater management agency.**

were lower than outer edges. Permeable pavers were laid in the center portion to allow rainfall to seep into underlying soil instead of accumulating on the surface. Some 36,000 square feet of alleyway was transformed.

### Just the beginning

“We’re at the very beginning,” Romanow says. “We needed to do a couple of preliminary projects to see what would work here, but we’ll continue to expand our green street program.”

Three of the pilot programs were funded from California State Water Resources Control Board grants totaling \$4 million, with the San Jose Department of Public Works providing design and engineering help. Romanow’s department administers the grant money and monitors completed projects to determine their effectiveness.

“We are still learning a lot. We are learning what is easier to maintain and what ones are more challenging,” she says. “We want to know what really works and what is really expensive to maintain. It is one thing to say we are allowing nature to work, but if crews have to go out there and spend a lot of time maintaining the gardens, it’s not realistic.”

There isn’t a rigid set of criteria for selecting which San Jose roadways get green street treatment, but there are several considerations. “Often-times the width of a street is a limiting factor,” Sinclair says. “Parking can be a limiting factor.

Underground and above-ground structures can be a factor.”

Sharon Newton, San Jose’s water testing program manager, says that coordinating the work with other departments is also a factor in choosing project locations. “One of the things we look at specifically in determining sites is the opportunity to collaborate with the public safety department. We always look to see where they are working on traffic improvement projects. There are benefits in combining construction projects.”

### Gaining support

Besides the obvious reasons for introducing the pilot projects where they did — the streets were beautified and made safer by eliminating pooling runoff water — the department also weighed the public relations value of a site, according to Romanow. That is, the department considered locations where excess water in streets and alleys was a long-standing aggravation. The locations were prime candidates for the initiatives because the department knew the work would be appreciated by neighborhood residents.

“In those areas, residents will notice the difference and appreciate the value of the projects, as well as the engineering that went into them,” she says. “They can see that it is transformational and truly benefits the environment.”

These testimonies help build public support for future environment-friendly solutions. Romanow

says the department enjoys widespread support, “but I’m not sure all the community understands how these solutions work. The concepts of green streets and green infrastructure are still new, so San Jose independently and in collaboration with Bay Area stormwater partners continues to conduct outreach and education efforts.”

The city’s Environmental Services Department has an operating budget this fiscal year of \$312.5 million, which is swelled by \$1.4 billion 10-year funding from a San Jose-Santa Clara Regional Wastewater Facility Capital Improvement Program. Romanow says the department doesn’t designate a specific percentage of the budget for so-called green initiatives.

“We actually don’t track things that way,” she says. “Environmental initiatives are just what we do and should not be isolated. They are not tracked separately. We look at what will help in the long term. If there is a project that’s projected to cost \$500,000 and 10 percent more will make it a green project, just as a matter of course, we will do that.”

### Environmental evolution

Not all San Jose stormwater falls within the purview of the Environmental Services Department. Some solutions still rely on old-fashioned regulations and traditional infrastructure. While the city has no heavy manufacturing, industrial centers that do operate within the city are monitored by a separate municipal storm sewer capital improvement and inspection regime. The city has 2,000 stormwater treatment units at 300 locations

*(continued)*



#### PROFILE:

**San Jose (California)  
Environmental Services  
Department**

**EMPLOYEES:**  
540

**INFRASTRUCTURE:**  
2,000 stormwater treatment units,  
28 stormwater pumping stations,  
1,200 miles of storm sewer mains

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**In November, San Jose completed work at four intersections on Park Avenue. Asphalt was replaced with permeable pavement and curbside rain gardens.**

around the city, 28 stormwater pumping stations, and almost 1,200 miles of storm sewer mains.

Romanow says the 540-person Environmental Services Department really began to hit its stride as an environmentally sensitive stormwater management agency about a decade ago. That happens to correspond to when she arrived and the department began developing a sustainable plan. She became director seven years ago.

Newton is a 27-year veteran of the department and has witnessed its evolution. “Our understanding has grown year by year. We want to learn more every year — want to try new things, and do new things, and be among the first in doing things. We try to think of ways to protect the environment and the natural resources we have.”

She says this openness to innovation tends to build upon itself. “With each stormwater permit,

**“We want to learn more every year — want to try new things, and do new things, and be among the first in doing things. We try to think of ways to protect the environment and the natural resources we have.”**

**Sharon Newton**

we add a list of things to accomplish, and then we start thinking about the next project. In the course of looking at how to expand protection efforts, we ask ourselves: ‘Is it possible to do this or do that?’ We try to incorporate all these new things as we move ahead.”

New projects aren’t always an overwhelming success, but Romanow says the department has never experienced a failed initiative. “Some things that we tried worked, but we decided not to expand them. We found we could tweak some things and make them work better, but chose not to do so.”

### **Renewed interest**

The Guadalupe River meanders north past downtown San Jose to the Bay 9 miles away. Coyote Creek ambles by on the other side of the city. Many of the management decisions made by Romanow and her staff target these two bodies of water. The city doesn’t have reservoirs so protecting such bodies of water is not a San Jose management concern. That falls under the auspices of the Santa Clara Valley Water District.

Burgeoning economies like San Jose’s mean lots of construction projects, housing develop-

## **PREPPING FOR THE STORM**

Routine stormwater management efforts in San Jose were interrupted in February 2017 when the upstream Anderson Reservoir reached capacity after heavy rains and overflowed into Coyote Creek. The result was 14,000 evacuated residents in downstream San Jose and some \$100 million in public and private property damage.

It was the worst flooding in the city in nearly a century and caught officials by surprise because the Santa Clara Valley Water District had told San Jose officials that Coyote Creek could handle more cubic feet per second than it, in fact, could.

As floodwaters were still flowing, San Jose Mayor Sam Liccardo warned residents that the water was contaminated with fuel, oil and possibly sewage. In the immediate aftermath of the creek overflowing its bed and inundating





**Each garden is a slightly sunken drainage area between street and sidewalk that runoff can enter through curb cuts. Water is then filtered through layers of stone, mulch and soil.**

ments, commercial structures, and repurposing of existing retail buildings. The primary concern of the Environmental Services Department with such developments is management of pollutant discharges and runoff. The city weighs the stormwater impact of proposed developments during a project review process and requires low-impact designs.

Droughts in the valley have yielded for now to more regular rains. Romanow says this has spurred new interest in stormwater management and, specifically, in green responses. "In our experience, residents have been receptive to the concept of green infrastructure," she says. That receptivity is expected to grow as more green projects are successfully implemented. ♦

adjacent areas, photos showed a significant amount of floating trash. In short, the waterways were polluted by the storm.

"That flood was not something the city could have controlled," says Environmental Services Director Kerrie Romanow, who is tasked with keeping the city's waterways clean. "I would say the February 2017 floods were the result of a number of situations happening all at once. Our city officials know what we want to do to prevent that from happening again."

Sharon Newton, the city's water testing program manager, says the city is working with partners, such as the water district, to ensure that future storms will not lead to Coyote Creek overflows. This includes measures such as properly maintaining streambeds during droughts so that they can handle the return of heavy volumes of water during rainy periods.



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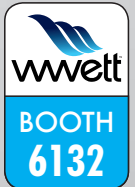
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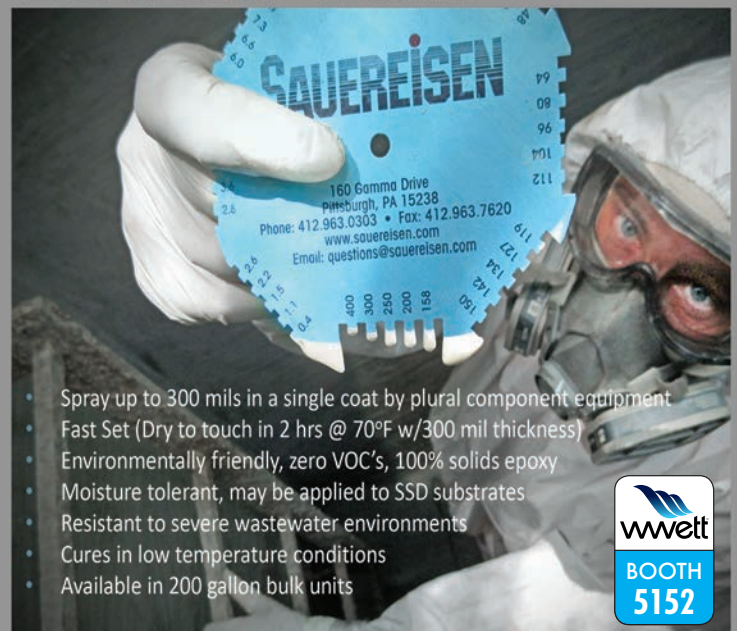
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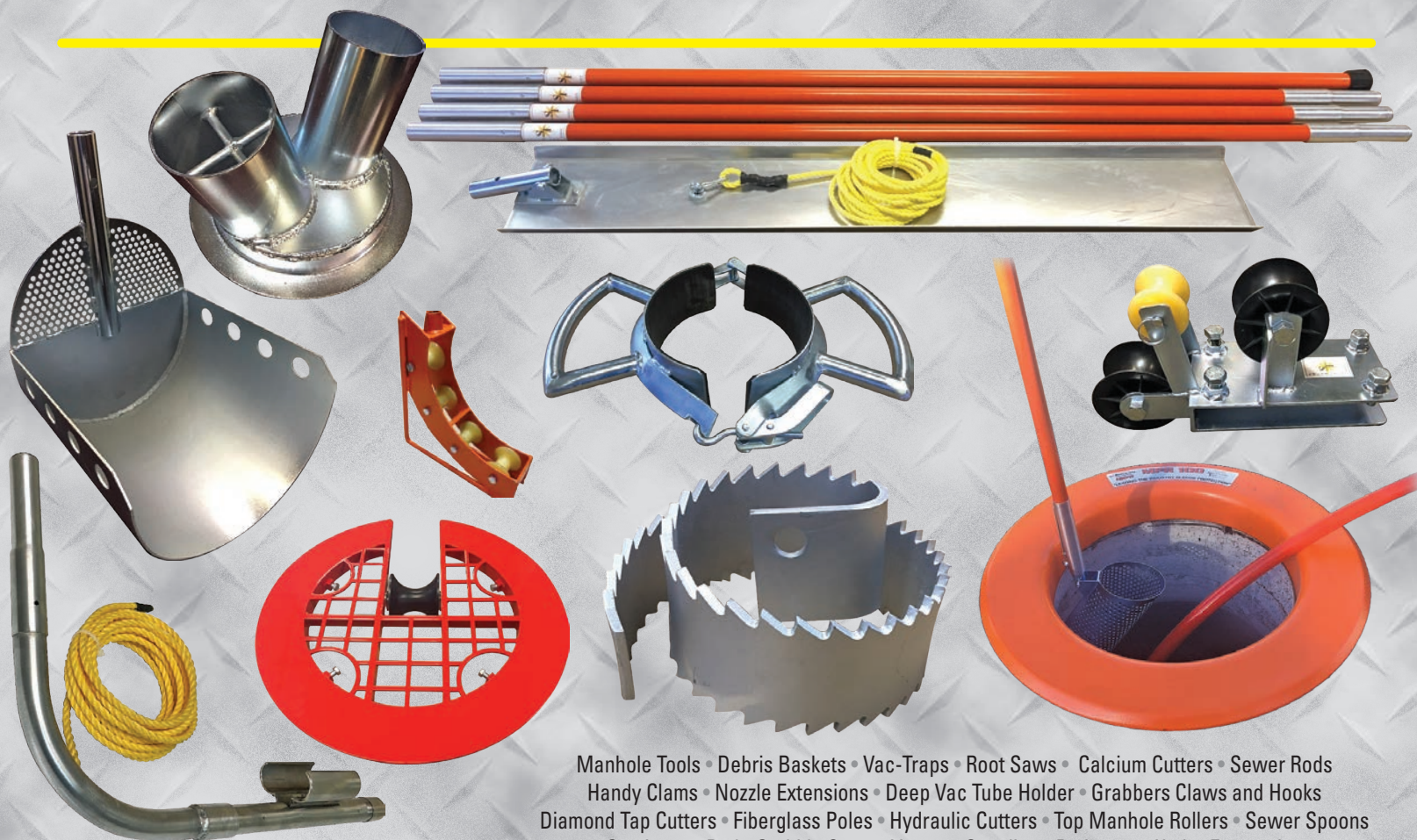


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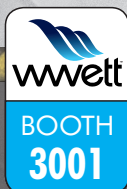
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# PUT STAGE BEFORE AGE

To craft effective engagement strategies, consider how long employees have been on the job rather than just their age

By Ken Wysocky

It's commonly accepted these days that different generations of workers — whether they're millennials, baby boomers or Gen Yers — require different approaches to keep them engaged in the workplace.

But new research suggests that age may not be the most important factor to use in determining how to best engage employees. Instead, organizations also should take their strategic cues from the length of employees' tenure, not just how many trips they've made around the sun.

"It's not all about generations," explains Dan Reilly, the vice president of SMS Research Advisors, a research and consulting firm based in Minneapolis. "The idea that millennials are engaging one way versus Gen Xers engaging another way, that literally tells you only half the story.

**"By looking at engagement just by age, not stage (of tenure), you're missing a good portion of the reasons for engagement or disengagement. You're fixing a problem with the wrong tools because you're looking at it through a different lens."**

Dan Reilly

"By looking at engagement just by age, not stage (of tenure), you're missing a good portion of the reasons for engagement or disengagement," he continues. "You're fixing a problem with the wrong tools because you're looking at it through a different lens. ... You miss the context of how years of service impact employees' thinking."

Reilly's assertions stem from a recent SMS Research Advisors study that explored how tenure at companies affects employees' motivations, career outlooks and other engagement-related factors. "We feel that engagement has several facets, and one that hasn't been studied is how heavily people's job experience weighs on their job satisfaction," he explains.

The study surveyed 1,500 employees of various ages and in different stages of their careers. The results showed that roughly 40 percent of employees polled say they're completely disengaged at work, regardless of their age. But perhaps more surprising was the study's finding that on-the-job tenure matters more than age when it comes to determining what keeps employees engaged. In other words, the things that drive engagement for a 40-year-old who's new on the job likely are very similar to the needs of a 22-year-old who's also a new employee.

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

## Four stages of tenure

The study divided respondents into four different groups: newbies (who have three years or less on a job), sophomores (four to seven years' experience), tenured (eight to 10 years), and sages (11 or more years). It's difficult to succinctly summarize the study's findings because it contains a dizzying array of data about employees' on-the-job attitudes and motivational factors as well as data about things employees feel would make them more engaged, compared to what they're actually getting from their employers.

But in a nutshell, here are some of the findings, starting with newbies. To keep newbies engaged, the greatest challenge is making sure they feel connected to a larger purpose. Because they lack experience in their new environment, they rely more than the other tenure-based cohorts on emotional and social clues to bridge their experience gap. "It's not about insecurity, but rather the need to know the lay of the land," Reilly says.

To keep newbies engaged, it's critical for managers to show them the career possibilities that exist. This can be accomplished short-term through onboarding procedures and long-term by providing them with regular feedback. "It's all about helping them make connections," he says. "Newbies feel a sense of isolation, which is why they rely on social and emotional cues. You need to assign them to teams that are collaborative, which is their preferred style."

But newbies aren't automatically millennials, he cautions; only about half of the newbies polled are actually millennials, Reilly says. (The average age of newbies polled in the survey was 34.)

According to the study, there's a distinct disconnect between the things that engage newbies the most — reward, tuition-reimbursement, student-loan assistance, health-and-wellness and mentoring programs — and what their employers actually provide.

## The moment of truth

After three years on a job, sophomore (the average age of those polled was 38) now can clearly see whether or not the company is interested in investing further in their careers. "They face what we call the moment of truth: Am I getting enough value from this position to make the investment in the company?" Reilly says. "This is where supervisors become really important. If they respect how employees have mastered a position, they should challenge them with new opportunities to grow their skill sets."

What if there's a lack of opportunities for advancement? Then don't



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expect engagement, he says. Here's where human resources can step in and adjust workflows so that employees with limited experience gain more opportunities to learn. "At this stage, it's not necessarily about a trophy, like an employee-of-the-year award," Reilly notes. "An award is not the same as a reward."

While sophomores who see limited opportunities may feel less engaged with their organization, they still feel strongly about their immediate team at this stage in their tenure. So, the team focus becomes much more important to them. The key engagement factor here: Help them to keep envisioning a future for themselves at the company, Reilly says.

## Reality sets in

For the cohort of tenured employees (average age of those polled was 42), an even stronger dose of reality has now set in. At this stage, managers need to make sure employees understand the career path that's before them. Candor is critical here; employees will see through false promises about supposed advancement opportunities that really don't exist.

"This is where we really start to see employees begin to focus more on the job they're doing and the job their team is doing," Reilly says. "They get that promotions may not be in the cards, but they still really like working with their team and retirement is looking attractive. Getting financial remuneration and building a nest egg for the next stage of their lives becomes more important."

To keep tenured employees engaged, organizations should help them understand that their contributions to their team are still vitally important.

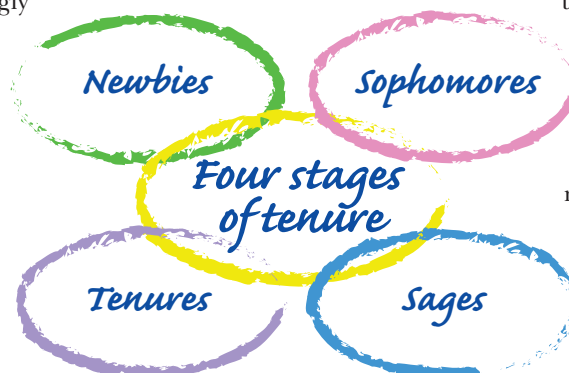
The key engagement factor here: Understand how employees perceive their own career success and act accordingly.

For sages (the average age of those polled was 50), the main work focus shifts to legacies — the kind of impression they'll leave on an organization after they retire. "They realize their time with the company is shorter, rather than longer," Reilly explains, "So, they want to be sure the legacy they leave for their organization is preserved."

Engagement can still be a problem for sages. The key to keeping them engaged is giving them opportunities to build their legacies. "Disengagement here stems from an inability to recognize they have a legacy to which they can contribute," he points out. "Managers need to help them identify that, help them understand that they can build on a piece of the company's future and contribute long-term."

So what's the upshot for companies? There's no one-size-fits-all solution for keeping employees engaged, so it requires a customized approach that looks beyond just age as a key driver. In fact, even if employees are similar in age but in different career stages, they will likely have entirely different preferences and motivations, Reilly notes.

The first step is understanding your own organization's level of engagement, then understanding the motivations and behaviors that contribute to that engagement — or lack thereof. "Once you have that info — the what, the how and the why — then you can create strategies and develop tactics that can improve engagement by allowing employees to contribute in positive ways to their team and to their company," Reilly concludes. ♦







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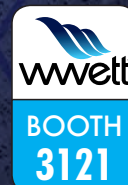


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# ATTACKING OVERFLOWS

Large capital program addresses the hassle and expense of emergencies and ailing infrastructure

By Greg Bates





A crew from Murphy Pipeline Contractors sets up to swageline a section of sewer line for the city of Ft. Lauderdale. The pipe is being pulled into a reduction dye at the start of the run.

Fort Lauderdale has adopted the motto, “Go Big, Go Fast!” The southeastern Florida city is going big on a \$15 million force main project that will improve, upgrade, and enhance its collections system and strengthen infrastructure. And it’s moving fast to complete the emergency project as quickly as possible.

The city didn’t have much of a choice in fixing its failing wastewater system. The issues Fort Lauderdale has endured since December 2016 have been well-documented. Sewer main breaks all over the city have meant sewage spills into the streets, canals and river. The city’s sewer pipes have spewed more than 20.6 million gallons of sewage into local waterways since January 2014.

“We can stop conquering sewage around the city, around the areas that are surcharged,” Holguin says. “That’s a huge thing for us. We need to get that done because it’s very expensive. ... I would say we’ve spent millions at this point.”

Not all of the city of Fort Lauderdale’s wastewater flows into that particular force main. Holguin estimates it handles about 11 of the city’s average 40 mgd flow.

Murphy Pipeline Contractors was working on the force main project when storms hit Fort Lauderdale in mid-August. The company was asked to help with cleanup for four days before it was able to resume the project.

“The work was somewhat affected by the storm, but we were able to recover,” Crow says.

**“It will be nice to make sure that our pipes will be rehabbed and we’re not going to have any more emergencies of this nature. It’s a long-term plan for us. We not only rehabilitated the pipes that broke, but even some that have not broken — we’re going to take care of them as well.”**

Jorge Holguin

“It will be nice to make sure that our pipes will be rehabbed and we’re not going to have any more emergencies of this nature,” says Jorge Holguin, city of Fort Lauderdale senior project manager. “It’s a long-term plan for us. We not only rehabilitated the pipes that broke, but even some that have not broken — we’re going to take care of them as well. It’s a pre-emptive manner to try to avoid breaking down in the future. And we also added some redundancy by adding two new interconnections to our existing transmission system.”

Murphy Pipeline Contractors in Pembroke Pines, Florida, was awarded the bid to repair the force main.

“I think some of the community is really happy we’re fixing it because they’re tired of seeing the bursts,” says Richard Crow, regional manager for Murphy Pipeline Contractors. “The patching just wasn’t working — patching that pipe there and have it go break (somewhere else).”

The failing force main became a dire situation for the city, and it was very expensive to continually have overflowing wastewater transported to the plant.

### City goes swagelining

When Murphy Pipeline Contractors presented its plan to the city of Fort Lauderdale representatives, the contractors laid out the advantages of swagelining. So, when the company won the project bid, it was full steam ahead to implement the trenchless technology.


To show that the city was serious about the project, it provided Murphy Pipeline Contractors with a \$1 million purchase order to buy the pipe before the contract was even finalized.

“We were contracted with them in about a month; it was a true emergency contract,” Crow says. “We were out there quickly.”

Murphy Pipeline Contractors was in Fort Lauderdale working on Aug. 15. The company has a crew of about 60 employees hammering out the project.

In Phase 1 of the four-phase project, the contractors were swagelining 22,000 linear feet of 30-inch pipe.

“Basically, under tension and through a dye, we shrink a 32-inch HDPE pipe to less than a 30-inch pipe and we slip it through,” Crow says. “Under a revertant process, it reverts back



### PROJECT PROFILE: Fort Lauderdale (Florida) Sewer System Improvement

**COST:**  
\$15 million

**COVERAGE:**  
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The HDPE passes through a reduction dye before entering the host pipe. Once in place, the pipe will return to its original diameter.

**“It’s kind of like sliplining, but with sliplining, you’re losing capacity. With swagelining, you basically lose no capacity, just the thickness of the pipe material itself.”**

**Richard Crow**

to its original size, giving it a tight, compression-fit liner.”

Murphy Pipeline Contractors has used swagelining quite a bit in past projects with large cities such as Houston and Tampa. It’s gaining traction as an effective method of trenchless rehabilitation around the country.

“We’re gaining ground,” Crow says. “It gives a better fit. It’s kind of like sliplining, but with sliplining, you’re losing capacity. With swagelining, you basically lose no capacity, just the thickness of the pipe material itself.”

Holguin says, “We thought that would be a very good fit for this particular project. So far, so good. It’s working out pretty well.”

Had Fort Lauderdale opted to dig and replace the pipe, the city would be turned upside down right now with construction everywhere residents look.

“To open-cut a 30-inch pipeline down these neighborhoods and down these businesses and to these streets, it’s a humongous price, but it also has a huge impact on the community itself,” Crow says. “That’s why they went trenchless, and that’s why they went with our technology.”

### **Ahead of schedule**

Using swagelining is going to be very beneficial for the city of Fort Lauderdale, Crow says. One key component: It’s a quick installation. Remember the city’s motto, “Go Big, Go Fast”? This is an important piece to the puzzle.

“The pipe material itself will last about 100 years,” Crow says. “Traditionally, they were using cast iron, but that corrodes — especially when you’re next to the river intercoastal. It’s highly corrosive.”

The first phase of the project, which covers a large section of failing pipe, wrapped up in late fall 2017, well ahead of schedule.

Phase 2 of the project is a 30-inch, 1,500-foot linear direction drill on Las Olas Boulevard right in the downtown area. Phase 3 consists of a 64,000-foot linear directional drill and force main

*(continued)*



**Fused lengths of HDPE pipe are pulled into the entry pit during the swagelining project.**



**A member of the Murphy Pipeline crew keeps an eye on the progress while another length of HDPE is fused to the new pipe with a McElroy fusion machine.**



interconnect on Sistrunk Boulevard. When that phase is completed, the fourth phase can commence — roughly 8,400 linear feet of pipe that will be swagelined.

Per the contract, Murphy Pipeline Contractors is scheduled to conclude the project on May 15, 2018. The company is shooting to have the project completed on April 25. Crow is optimistic the entire project will be finished plenty early since the crew will be a couple weeks ahead of schedule after a smooth Phase 1.

There are three active phases going on currently, so the project is progressing quickly.

“A couple weeks ago, we had three drill rigs going at the same time; now, we only have two drill rigs going at the same time,” Crow says. “It’s a 64,000-foot linear drill. It’s a huge drill rig.”

**“To open-cut a 30-inch pipeline down these neighborhoods and down these businesses and to these streets, it’s a humongous price, but it also has a huge impact on the community itself.”**

**Richard Crow**

#### United front

Crow has been very impressed working with Fort Lauderdale officials and their involvement with the project. He says he’s worked with plenty of cities before where city representatives and contractors clash on ideas and perspective, but not on this project.

“A lot of eyes are on it, and they’ve been really supportive,” Crow says. “There hasn’t been a divided front. We’re all talking; this will be project of the year (for the city). This is really huge, and it’s been really successful.”

Crow says the city has attacked the project with urgency and is looking out for the best interests of its residents.

“Do it right, do it safe, and it will last 100 years,” Crow says. ♦

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# JOIN US IN APRIL

NASSCO's Annual Conference is an opportunity to learn and network with your peers

By Ted DeBoda

Every year, NASSCO members gather for our three-day annual conference. It's one of the highlights of the year, and this year, we're doing something a little different.

Typically held in mid-February, a busy season for other conferences and trade shows, we decided to alleviate some of the stresses of intense travel during the winter season and hold our 2018 annual conference in the spring. This year's conference will be held April 11-13 in beautiful San Antonio.

The conference is an opportunity for members to learn about initiatives that impact our industry, accomplishments made in setting standards, and new technologies available to further promote trenchless methods as well as — of course — to network with peers and share opinions through committee participation and social events.

It all kicks off with a golf tournament and welcome reception Wednesday, April 11. Thursday will be an intensive day of member participation through our informative general meeting followed by committee breakout sessions where NASSCO members can get involved and have a voice in hot topics such as CIPP, government relations, pressure pipe, asset management and many others. For a full list of NASSCO committees, visit [www.nassco.org](http://www.nassco.org).

Friday, April 13 is Technical Day. Traditionally held in two tracks, this year we will provide one interactive session with presentations by repre-

sentatives from the Water Environment Association of Texas and the San Antonio Water System. We will also hear from the asset program manager from Meridian, Idaho; the director of Water and Wastewater from Framingham, Massachusetts; and others.

The session will allow for roundtable discussions and an open forum, providing NASSCO members the opportunity to ask questions regarding issues of specific importance to them.

The conference will conclude with a cocktail reception and banquet on Friday night when we will introduce the new NASSCO Board of Directors. Attendees will have the opportunity to socialize and connect with other members while line dancing, playing horseshoes and trying their skills at life-sized Jenga.

The locale for the 2018 NASSCO Annual Conference is the La Cantera Resort & Spa in San Antonio Hill Country. We encourage members to book their rooms now, as they do fill up fast. To make reservations and receive the special rate of \$259 per night, call 855-499-2960 or click [www.destinationhotels.com/la-cantera-resort-and-spa/resort](http://www.destinationhotels.com/la-cantera-resort-and-spa/resort).

If you are not yet a member of NASSCO and would like to join us next April, we invite you to apply for membership today at [www.nassco.org](http://www.nassco.org).

*Hope to see you there!* ♦

**NASSCO (National Association of Sewer Service Companies)** is located at 2470 Longstone Lane, Suite M, Marriottsville, MD 21104; 410-442-7473; [www.nassco.org](http://www.nassco.org)

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#### April 3

##### Tampa, FL

Includes: PACP, MACP, LACP

Trainer: Paul Booth

For more information or to register:

704-681-3989 or [woodsideenv@gmail.com](mailto:woodsideenv@gmail.com)

#### April 3

##### Northville, MI

Includes: PACP, MACP, LACP

Trainer: Brandon Conley

For more information or to register:

248-349-0904 or [pacp@dohenycompanies.com](mailto:pacp@dohenycompanies.com)

#### April 6

##### Northville, MI

Includes: PACP

Trainer: Brandon Conley

For more information or to register:

248-349-0904 or [pacp@dohenycompanies.com](mailto:pacp@dohenycompanies.com)

#### April 10

##### Covington, GA

Includes: PACP, MACP, LACP

Trainer: John Jones

For more information or to register:

678-760-5826 or [plumlineconsultant@gmail.com](mailto:plumlineconsultant@gmail.com)

#### April 16

##### Honolulu, Hawaii

Includes: ITCP - Manhole Rehabilitation

Trainer: Tim Back

For more information or to register:

513-253-8461 or [timbacktwo@gmail.com](mailto:timbacktwo@gmail.com)

#### April 16

##### San Francisco, CA

Includes: PACP

Trainer: Brandon Conley

For more information or to register:

248-349-0904 or [pacp@dohenycompanies.com](mailto:pacp@dohenycompanies.com)

#### April 17

##### San Francisco, CA

Includes: PACP, MACP, LACP

Trainer: Brandon Conley

For more information or to register:

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#### April 24

##### Santa Fe, CA

Includes: LACP, PACP, MACP

Trainer: Sammy Maestas

For more information or to register:

505-412-3362 or [sammymaestas@yahoo.com](mailto:sammymaestas@yahoo.com)

#### April 24

##### Greenville, SC

Includes: PACP, MACP, LACP

Trainer: Brandon Conley

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### ITCP TRAINING (CIPP and Manhole)

#### April 16

##### Honolulu, HI

Includes: ITCP - Manhole Rehabilitation

Trainer: Tim Back

For more information or to register:

513-253-8461 or [timbacktwo@gmail.com](mailto:timbacktwo@gmail.com)

#### April 25

##### Lethbridge, Alberta

Includes: ITCP - CIPP

Trainer: Rocky Capehart

For more information or to register:

916-834-2712 or [rcapehart01@comcast.net](mailto:rcapehart01@comcast.net)

### OTHER CLASSES FORMING

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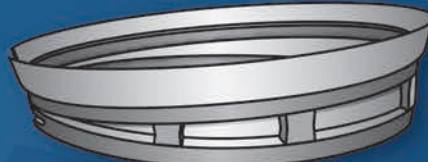
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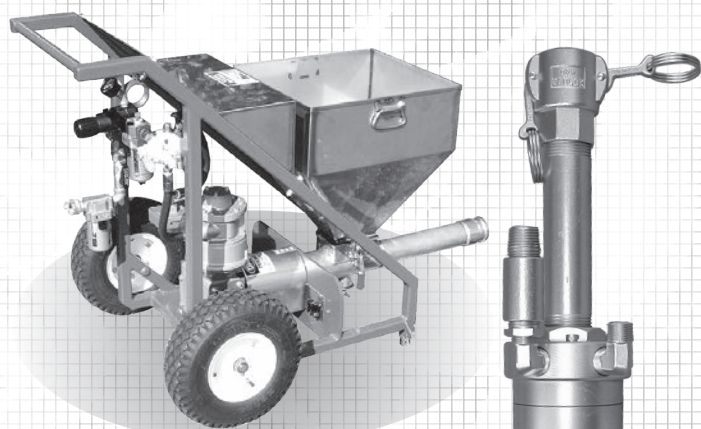
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## PIPELINE AND INFRASTRUCTURE, HYDRANTS

By Craig Mandli

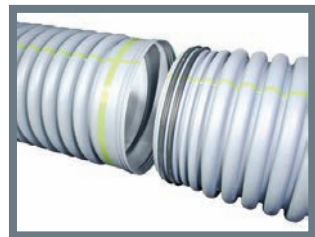
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### PIPE PARTS/FITTINGS

#### Dallas Specialty Double Barrel 2-way PVC Cleanout

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ASTM D2665 and ASTM D3311 approved for PVC; is ASTM D2661 approved for ABS; and meets code requirements for the International Plumbing Code, International Residential Code, and International Mechanical Code. **800-222-5644; www.dallasspecialty.com.**

#### Foundry Services Kempf Kollar

The ductile iron **Kempf Kollar** face-to-face positive restrained rotating pipe flange from **Foundry Services** offers 360-degree circumferential support on the rotating flange end. It includes an AMERICAN Toruseal low-torque NSF 61 gasket for the rotating flange end and is manufactured using ductile iron class 53 that conforms to C115/A21.15-08 and C151/A21.51-09. Its rotating flange conforms to ANSI/AWWA C115-11 and ANSI B16.5 Class 150/125 drilling patterns. It provides the ability to ensure proper wall spool alignment or to realign a run of pipe already in place, and it is pressure tested to 1,200 psi for 30 minutes without leakage. **402-451-0674; www.foundryservicesco.com.**



### VALVES



#### Asahi/America gate valves

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#### Proco Products ProFlex 790

The **ProFlex 790** low-headloss, in-line, rubber duckbill check valve from **Proco Products** allows for a passive flow and enables the valve to be installed without having to do any modifications to existing structures or pre-install planning. The foldaway design of the inner sleeve allows for a near full port flow, allowing for quick drainage. It provides rapid dispersion of head pressures, and with its low cracking pressure, it prevents upstream flooding. Its zero backflow design makes it a fit for combined sewer overflows, sanitary sewer overflows and outfalls. **800-344-3246; www.procoproducts.com. ♦**





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### City makes flood mitigation improvements

#### Problem:

In the summer of 2016, the city of Miami Beach, Florida, in partnership with the Florida Department of Transportation, implemented a flood-mitigation program along the Indian Creek Drive/SR A1A corridor. The improvement included the installation of a pump station and elevation of the existing roadway and sidewalks to implement enhanced flooding solutions to the area. The pumping station required a 72-inch pipe to convey stormwater runoff from the pump station in Miami Beach to a nearby outfall. The project site was in a very tight construction space, located adjacent to a roadway on one side and a canal along the other side.



#### Solution:

The consulting engineer, Ribbeck Engineering, and the general contractor, David Mancini & Sons, worked together to identify the most effective and cost-efficient solution. They selected 3,400 linear feet of 72-inch **DuroMaxx SRPE** pipe manufactured by **Contech Engineered Solutions** to convey the water from the pump station to the outfall. The pipe offers a watertight joint, laying lengths of 24 feet, a smooth interior for improved hydraulics, and durability. The drainage system included inline elbows, access risers, and lateral connections for 24-inch-diameter A-2000 PVC for an effective drainage solution.

#### RESULT:

Both the city and Florida Department of Transportation were satisfied with the result as the surrounding community will greatly benefit from these flood-mitigation improvements to Indian Creek Drive. **800-338-1122; www.conteches.com.**

### Swivel joint used to connect pipes buried at different depths

#### Problem:

The city of Myrtle Beach, South Carolina, has a population of approximately 27,000 and is growing. A 12-by-6-inch tapping sleeve was being installed with a new valve, along with the replacement of a section of 6-inch AC pipe using new 6-inch C900 PVC. The 12-inch main was buried at a different height and angle to the new pipe, creating a connection issue.



#### Solution:

Public Works Department crew supervisor Dean Roughton chose to use the **HYMAX GRIP SWIVELJOINT** from **Krausz USA**, a fitting that connects and restrains any two pipes at any angle from 0 to 90 degrees and allows dynamic deflection of up to 4 degrees per end. It connects and restrains piping materials including PVC, ductile iron and cast iron. Its hydraulic pressure-assisted gasket allows dynamic deflection of up to 4 degrees per end.

#### RESULT:

It took the Myrtle Beach service crew less than an hour to install the joint and return water service to customers. The quick repair also reduced labor costs along with less time in the ditch while providing a long-term solution. **855-457-2879; www.krauszusa.com.**

### Butterfly valves provide uninterrupted water flow during servicing

#### Problem:

The Foss Reservoir Master Conservancy District in southwestern Oklahoma had aging pipelines and no main valves in their distribution system to isolate the towns being served. Their water towers and storage tanks also required periodic maintenance, resulting in shutdown of their individual supply lines for emptying a tank. Drought also plagued the area, resulting in only one of the four intakes supplying water, which put more pressure on the reliability of that line. Over time, erosion of the concrete pipe caused leakages, and high pressure and reverse flows caused fittings failures. Whenever a leak occurred, standard operating procedure necessitated shutting down the entire system to make repairs. It was clear that greater control of water delivery within the system was critical.



#### Solution:

Class 150B 18-, 24- and 30-inch 150 psi **Pratt** butterfly isolation valves from **Mueller** were installed at each point where a line enters a city. These valves are rugged and reliable for buried service. The body-mounted elastomeric seat has ridges, which provide multiple sealing lines and permit higher levels of radial compression. Thus, stress in the seat material is reduced, allowing lower seating torques and optimal sealing action. The valves were also installed at tees within concrete vaults, where transmission lines lead to water towers and tanks. This arrangement permits continual flow of water throughout the rest of the system while supply lines to water tanks can be independently closed.

#### RESULT:

Water is now flowing uninterrupted to consumers when maintenance is performed at any point within the water system. **800-423-1323; www.muellercompany.com.**

### Upgraded treatment plant calls for new valve configurations to maintain water pressure

#### Problem:

Patoka Lake, Indiana, nearly doubled the size of its treatment plant's capabilities with a complex network of pipes, booster pumping stations, elevated tanks and reservoirs. In order to keep the water flowing smoothly, they needed different control valve solutions to maintain the pressure in each district-metered area.



(continued)



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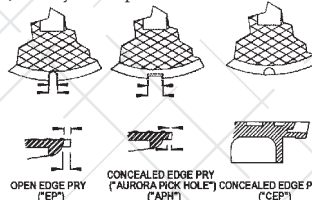
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## CASE STUDIES PIPELINE AND INFRASTRUCTURE, HYDRANTS

### Solution:

Two bypass pump control valves from **Singer** were put in between the pump discharge and check valve to prevent surges when starting up the pumps and increase the pipeline flow. In addition, two 12-inch flowmetering valves with internal drop check were put in downstream of the pumps to prevent reverse flow situations and eliminate the need for a check valve downstream. Coupled with a Multi Process Control Panel, these valves have the ability to measure and control the flow, giving the user the ability to program varying set points of flows during the day. A 24-inch control valve partnered with an EPC-4XF control panel and X156 position transmitter for valve position indication was used to handle additional flows to multiple water plants equally.

### RESULT:

By choosing the right valves for each application and having the ability to tweak each valve with various backup features and remote control options, Patoka Lake gained the flexibility to manage their water distribution effectively. The upgrades will allow the city to grow and welcome new residents with reliable water flow. 888-764-7858; [www.singervalue.com](http://www.singervalue.com).

## Bell encapsulation sleeve used to repair new main

### Problem:

The city of Olean, New York, needed to accept a new 6-inch-diameter ductile iron water main for immediate service. The line failed to pass the pressure test required for city acceptance due to a leaking push-on joint. The city could either replace the joint by performing a cut-in repair or encapsulate it.



### Solution:

The city decided on a bell encapsulation sleeve manufactured by **Total Piping Solutions**. The **Quick-Sleeve** allowed for the line to remain under pressure and eliminated the need for installation of two new joints and a section of pipe, and the need to disinfect the line. There was no disruption of service.

### RESULT:

In less than 30 minutes, the city repaired the leaking joint. The bell sleeve allows for 4 degrees of deflectional movement per end and is rated to 200 psi working pressure for water or sewer service conditions. 716-372-0160; [www.tps.us](http://www.tps.us). ♦

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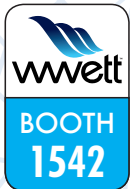
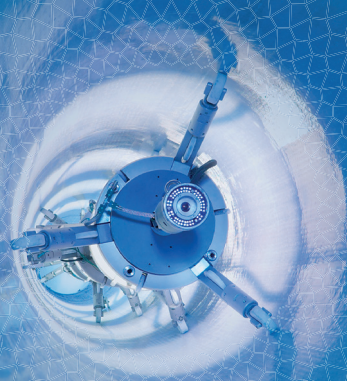


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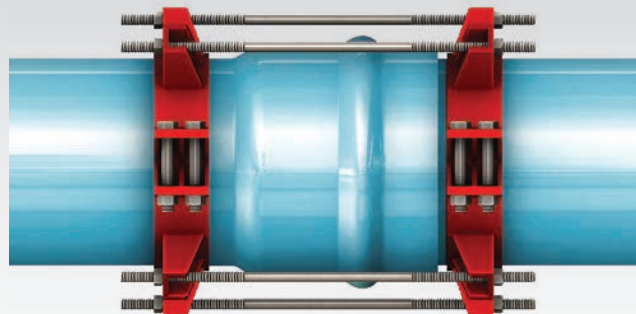
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## Product Spotlight

Chain cutter provides effective, environmentally friendly cleaning power

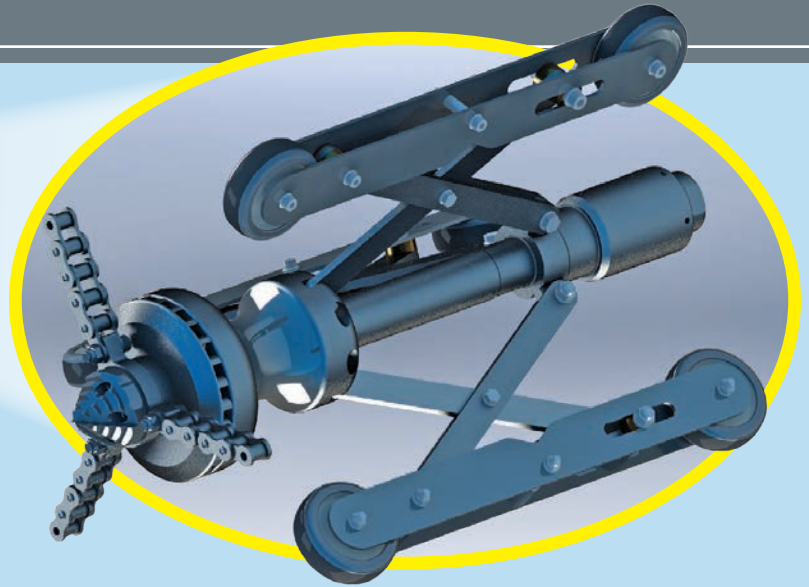
By Craig Mandli

Cleaning roots and calcium deposits off pipe walls can be difficult, tedious work for a sewer cleaner. The tools used to perform the task need to be efficient and durable enough to stand up to harsh conditions. The makers of the Turbo S600 chain cutter designed the unit specifically for those challenges.

The newest chain cutter from USB-USA is made of high-quality stainless steel and has a continuously adjustable guide skid. Turbine technology powers the durable chain retainer on a robust body to remove concrete, calcium deposits, hardened grease and tuberculation from 12- to 24-inch sewer lines.

"USB designed this unit to be extremely aggressive," says Patrick Savio, USB-USA president. "A large, heavy-duty shaft and sealed internal bearings, combined with the eco-friendly turbine, create tremendous cutting power."

According to Savio, the Turbo S600 employs turbine technology as its drive system. "This eco-friendly technology immensely reduces the water consumption while maintaining its superior cutting power." In addition, he



says, "The cutter requires practically no maintenance and can be adjusted down to 1/16 of an inch with a simple turn of the rear spindle."

The target market is centered around both municipal and industrial sewer work. "The cutter's reliability, easy operation, and minimal maintenance are major selling points," Savio says.

If pieces of the unit do wear out or break, the company has designed all wear parts with a modular focus, and all can be easily removed and replaced. "With a little guidance, the average person can quickly and easily replace all of the wearable parts," Savio says.

The unit's 3-D fluid mechanics — in conjunction with one-piece, ceramic nozzle inserts — allow the cutter to be used with recycled or clean water. The unit improves on previous models by offering six jets on the front, as opposed to three.

"Enhancements to previous models helped create the Turbo S600, and the people are very excited to see this powerful cutter in action!" Savio says. **844-285-5770; [www.usb-usa.com](http://www.usb-usa.com).**

## WinCan VX sewer assessment software

When integrated with Esri's ArcGIS platform, WinCan VX sewer assessment software allows for navigation and analyzing of inspection data using a rich GIS interface. Map features can be linked to section and defect information, or a tabular record in an inspection can be clicked on to jump immediately to its mapped location. With this bidirectional link between GIS and WinCan, inspections can be prepopulated with data residing in GIS, eliminating manual data entry. The ArcGIS integration allows for filtered results, report creation, browsing of media and building of heat maps according to defect type or severity. **877-626-8386; [www.wincan.com](http://www.wincan.com).**



## CUES Pullback Inspection Camera System borehole inspection camera

The CUES PICS 2- to 4-inch borehole inspection camera helps eliminate cross bores in directional drilling operations. The PICS is compatible

with the entire CUES cross-bore inspection platform that includes GraniteNet Gas software, sewer main and lateral inspection, and robotic lateral launch for pre- and postinspection of sanitary and storm laterals. In addition, it features sonde and line locating, digital video and picture recording, and wireless integration with GraniteNet asset management software. **800-327-7791; [www.cuesinc.com](http://www.cuesinc.com).**



## Schneider Electric PowerPact B circuit breaker



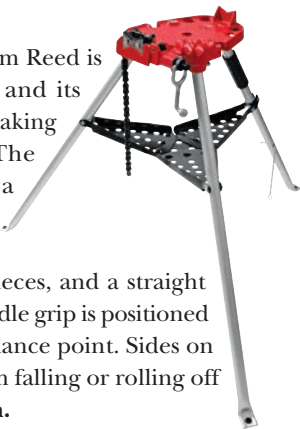
Schneider Electric's PowerPact B-frame circuit breaker replaces the legacy FA/FH series with upgraded features, including an expanded amperage range of 15-125A, and field installable accessories, while keeping the same mounting space dimensions. Everlink wiring lugs maintain constant contact with fine-stranded conductors, and every breaker includes a QR code to pro-



vide access to online product information and customer care center contact information. The breakers meet global electrical standards including UL, CSA, NOM, IEC and CCC. 888-778-2733; [www.schneider-electric.us](http://www.schneider-electric.us).

## Reed Carry Light tripod vise

The Carry Light R450PAL tripod vise from Reed is designed primarily for plastic pipe loads, and its aluminum legs reduce the carrying weight, making the vise ideal for weight-critical field use. The reversible, double-sided bow-tie jaws have a neoprene side for plastic pipe and steel jaws on the other side for metal pipe. The chain vice adjusts to pipe and odd-shaped work pieces, and a straight cranking handle is included. A cushioned handle grip is positioned so the folded tripod can be carried at the balance point. Sides on the folding tray keep tools and parts safe from falling or rolling off the edge. 800-666-3691; [www.reedmfgco.com](http://www.reedmfgco.com).



## Water Cannon Inc. - MWBE Easy Start Unloader Plumbing Kit

The Easy Start Unloader Plumbing Kit from Water Cannon Inc. - MWBE ensures water goes where it should and keeps excess water inside the pressure washer. The preassembled unit includes a brass valve body with a stainless steel ball and seat. It adjusts from 100 up to 5,650 maximum psi and has an easy-to-adjust ergonomic handle that features a tamper-resistant setting. The kit has two inlet and bypass ports and a built-in easy-start feature so the pump can start without static backpressure. It must be mounted in a vertical position. 800-333-9274; [www.watercannon.com](http://www.watercannon.com).



## Petersen Products Multi-Flex CIPP Packer/Carriers

The Multi-Flex CIPP Packer/Carriers from Petersen Products are available for virtually any diameter and length using ambient, hot water and steam cure. There are standard items; and the company also makes many custom configurations. They are available with or without a flow-through bypass. A fixed, inflated diameter — independent of the pipeline — bridges across broken sections of pipe, allowing for a continuous, smooth repair. The small-deflated diameter, light weight, and flexibility makes for easier installation and removal through a small opening and confined or manhole spaces. 800-769-4973; [www.petersenproducts.com](http://www.petersenproducts.com). ♦








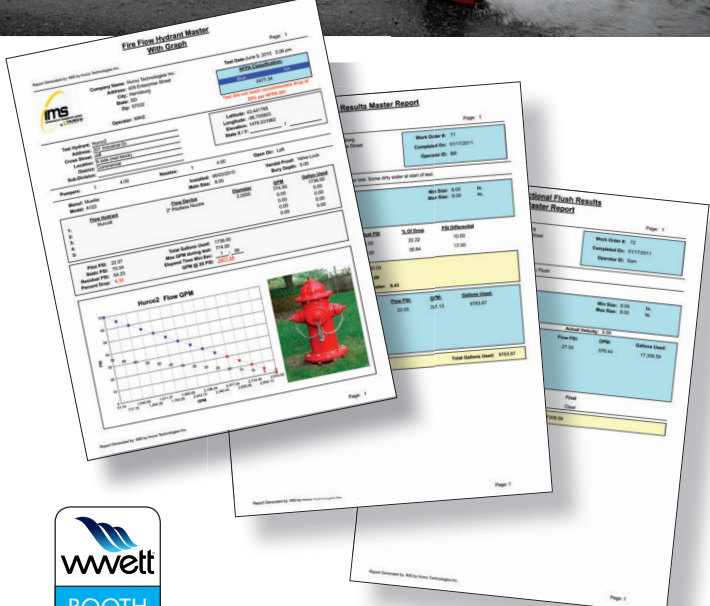
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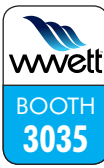
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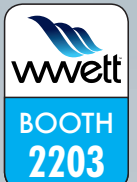
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## Owner of Doheny's Equipment and Supplies passes away

Tom Doheny, owner of Doheny's Equipment and Supplies in Island Lake, Illinois, died unexpectedly on Nov. 17. He was well-known for his 30-plus year history in the sewer cleaning industry, to which he made significant professional contributions and had a true entrepreneurial spirit. He had a passion for customer service, and all who knew and worked with him considered him a friend.

A statement from the company: "He will be remembered as a highly respected salesman and valued leader and mentor. His memory will forever live on at Doheny's Equipment and Supplies. The company will continue providing customers with world-class service and maintain its customer-focused business practices, which Tom so strongly believed in and instilled in everybody at the company. John Wichmann, general manager for Doheny's Equipment and Supplies, will be available to answer any questions customers may have regarding equipment sales, rentals, parts, service or any other needs."



Tom Doheny

## USB-USA offers expanded line of sewer cleaning equipment

Patrick Savio, president, and Dan Long, vice president, announced the formation of USB-USA. In addition to an expanded line of sewer nozzles, turbo chain cutters, specialty tools, and accessories, the company will sell and service USB equipment. The company is located at 7565 Owl Creek

Drive, Douglasville, Georgia, and it can be reached at 844-285-5770. A full catalog of available products is viewable at [www.usb-usa.com](http://www.usb-usa.com).

## ShopTRENCHLESS.com launches new website

ShopTRENCHLESS.com announced the launch of its website, targeting residential and commercial plumbing contractors and suppliers as well as utility contractors and municipalities' maintenance divisions. The site offers on-demand delivery of a wide range of materials and equipment, focusing on trenchless pipe and sewer repairs.

## Epoxytec announces new sales manager and technical consultant

Epoxytec announced John Thompson as its newest sales manager and technical consultant. He has a master's degree in business administration and has more than 20 years' sales and management experience in the industrial and commercial coating industries.



John Thompson

## Avanti International names Frank Aguilar as president

Avanti International announced that Frank Aguilar has been appointed president, and Angela Magill has been elected director. Aguilar joined the company in 1999 and has served in many roles, including inside sales, regional sales manager, technical product manager, vice president of customer service and, most recently, vice president of operations.



Frank Aguilar

## Val-Matic Valve's Ballun elected to Valve Manufacturers Association of America Board

Val-Matic Valve announced John V. Ballun, president and CEO, has been elected to the VMA board. He joined Val-Matic Valve in 1995 as vice president of engineering and previously worked in various engineering management roles.



John V. Ballun

## Trident Processes receives 2018 Canadian Business Excellence Award

Trident Processes has received the Canadian Business Excellence Award for Private Businesses, given annually to 25 private businesses in Canada. The award is presented by Excellence Canada and PwC Canada and is in recognition of Canadian businesses that demonstrate exemplary performance of strategic plans and exceptional achievement of their business goals. ♦

## What's New With You? Send In Your Industry News To Us!

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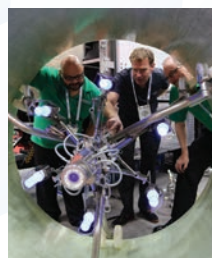




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## BIDS

**DBE SUBCONTRACTING OPPORTUNITIES.** SOUTH COAST WATER DISTRICT. SEWER TUNNEL STABILIZATION AND PIPELINE REPLACEMENT PROJECT. South Coast Water District located in Laguna Beach, California will be releasing a construction bid for Phase 2 of its "Tunnel Stabilization and Sewer Pipeline Replacement Project" in January 2018. This Project is funded by a loan from the Clean Water State Revolving Fund (CWSRF) Program. As such, State and Federal Requirements including Disadvantaged Business Enterprises (DBE) participation and Davis-Bacon prevailing wages (California, if California wages are higher) apply to the project. Categories for DBE subcontractors and suppliers opportunities include concrete and shotcrete, rebar and structural steel, sewer pipe, spoil and waste hauling, surveying, security, and office supplies. Under the SFR Loan requirements, Contractors bidding on the District's project must demonstrate a good faith effort to hire DBE firms. Please note, DBE firms will not be contracting directly with the District. To learn more about the Project and the contractors approved to bid on the Project, you can visit the District's website at [SCWD.org/bids](http://SCWD.org/bids), to register and view information on the Project. You can also e-mail questions to [mcollins@scwd.org](mailto:mcollins@scwd.org). (M02)

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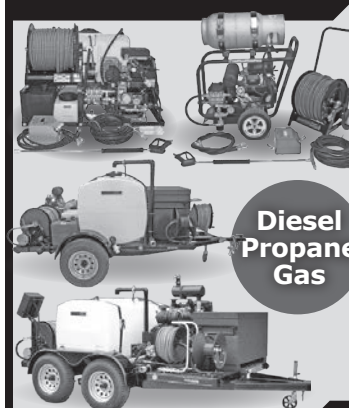
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## PEOPLE/AWARDS

**Jon Haukaas** was hired as the Public Works director for the city of Blaine, Minnesota. He spent the last 10 years in Colorado, including eight years as a utilities operations manager for the city of Fort Collins.

**Kenneth Locke** — an employee of the city of Brewer, Maine, since 1992 — received a 2017 Governor's Award for Environmental Excellence from the Maine Department of Environmental Protection. The honor recognizes "extraordinary efforts to protect and improve Maine's environment." Locke became the city's director of environmental services in 2000. Since 2003, he has taken a proactive approach to maintaining Brewer's stormwater management program.

The **University of Tennessee Stormwater Management office** was recognized as the Organization of the Year by the Tennessee Stormwater Association. The university was honored for its efforts to incorporate effective and inventive stormwater management strategies into every construction project on campus.

The **Upper Gwynedd Township** in Pennsylvania received the 2017 Municipal Award from the Perkiomen Watershed Conservancy for its efforts to keep a local watershed clean. For the past several years, Upper Gwynedd Township has developed and implemented a Skippack Headwaters TMDL Abatement Program, meant to reduce the maximum daily load of sediment entering local waterways during heavy rain. The program focused on three projects: stream bank restoration along a tributary of the Zacharias Creek, retrofitting of a stormwater basin near Conrad Avenue with native-plant material, and restoration of 600 feet of banks along the Zacharias Creek.

The **Water Environment Federation** honored the city of Corpus Christi (Texas) Storm Water Division with gold-level recognition in both innovation and program management. The division has implemented several programs, including the Inlet Basket Program that is designed to protect the bays from debris, fats, oils and grease.

## LEARNING OPPORTUNITIES

### Virginia

The American Society of Civil Engineers is offering a Young Member Leadership Symposium Aug. 3-5 in Reston, Virginia. Visit [www.asce.org](http://www.asce.org).

### Wisconsin

The University of Wisconsin-Madison is offering a Using WinSLAMM: Meeting Urban Stormwater Management Goals seminar Feb. 27-28 in Madison, Wisconsin. Visit [www.epd.wisc.edu](http://www.epd.wisc.edu). ♦

## CALENDAR

### Feb. 20-23

Water Environment Federation-American Water Works Association Utility Management Conference, Hyatt Regency Riverwalk, San Antonio. Visit [www.wef.org](http://www.wef.org).

### March 1-3

American Society of Civil Engineers CI (Construction Innovation) Summit, Hilton Fort Worth, Fort Worth, Texas. Visit [www.cisummit.org](http://www.cisummit.org).

### March 6-9

National Utility Contractors Association Annual Convention, Wyndham San Antonio Riverwalk, San Antonio. Visit [www.nuca.com](http://www.nuca.com).

### March 26-28

American Water Works Association Sustainable Water Management Conference, Renaissance Seattle Hotel, Seattle. Visit [www.awwa.org](http://www.awwa.org).

### April 19-21

American Society of Civil Engineers Structures Congress, Fort Worth Convention Center, Fort Worth, Texas. Visit [www.structurescongress.org](http://www.structurescongress.org).

### April 22-24

American Society of Civil Engineers Surveying and Geomatics Conference, Cal Poly Pomona university, Pomona, California. Visit [www.surveyingconference.org](http://www.surveyingconference.org).

### April 22-25

American Water Resources Association Spring Specialty Conference: GIS and Water Resources, Rosen Centre Hotel, Orlando, Florida. Visit [www.awra.org](http://www.awra.org).

### May 6-9

American Public Works Association North American Snow Conference, Indianapolis. Visit [www.apwa.net](http://www.apwa.net).

### May 22-24

National Utility Contractors Association Washington Summit, Holiday Inn Capitol, Washington, D.C. Visit [www.nuca.com](http://www.nuca.com).

### June 3-7

American Society of Civil Engineers World Environmental and Water Resources Congress, Hyatt Regency Minneapolis, Minneapolis. Visit [www.asce.org](http://www.asce.org).

### June 11-14

American Water Works Association Annual Conference & Exposition, Mandalay Bay Convention Center, Las Vegas. Visit [www.awwa.org](http://www.awwa.org).

### July 9-11

American Water Resources Association Summer Specialty Conference: Managing Transboundary Groundwater, Worthington Renaissance Fort Worth Hotel, Fort Worth, Texas. Visit [www.awra.org](http://www.awra.org).

### July 29-Aug. 1

American Society of Agricultural and Biological Engineers Annual International Meeting, Cobo Center, Detroit. Visit [www.asabe.org](http://www.asabe.org).

### Aug. 12-16

StormCon, Hyatt Regency Denver at Colorado Convention Center, Denver. Visit [www.stormcon.com](http://www.stormcon.com).

### Aug. 26-29

American Public Works Association Public Works Expo: PWX, Kansas City Convention Center, Kansas City, Missouri. Visit [www.apwa.net](http://www.apwa.net).

### Sept. 17-19

National Rural Water Association WaterPro Conference, Fort Worth, Texas. Visit [www.nrwa.org](http://www.nrwa.org).

### Oct. 12-15

American Society of Civil Engineers 2018 Convention, Hyatt Regency Denver at Colorado Convention Center. Visit [www.asce.org](http://www.asce.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](mailto:editor@mswmag.com).

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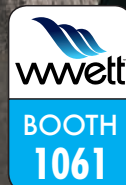
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