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August 2021

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HUMAN SIDE: PROCRASTINATE
NO MORE

PAGE 16

SUPPLY SIDE: WINCAN MAKES
THE MOST OF DATA

PAGE 20

WATER: CATSKILL COMMUNITY
FOCUSES ON SYSTEM RENEWAL

PAGE 24

LAYING THE GROUNDWORK

A 'green' mindset informs
sewer district's approach
to reducing overflows

PAGE 12

Diana Christy
Executive Director
Metropolitan Sewer District
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CONTENTS

PIPELINE INSPECTION, SURVEYING
AND MAPPING



ON THE COVER: Executive Director Diana Christy and the Metropolitan Sewer District of Greater Cincinnati are leaning on green infrastructure initiatives to reduce combined sewer overflows. (Photography by Amy E. Voigt)



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FEATURES

12 **STORM: Laying the Groundwork**

A 'green' mindset informs sewer district's approach to reducing overflows.

By Ken Wysocky

24 **WATER: Focused on Renewal**

A legacy water system in upstate New York serves beyond municipal boundaries.

By Giles Lambertson

COLUMNS

8 **FROM THE EDITOR: Keeping Pace**

The work never stops, and once you fall behind it's easy to get stuck in catch-up mode.

By Luke Laggis

10 **@mswmag.com**

Visit daily for news, features and blogs. Get the most from *Municipal Sewer & Water* magazine.

16 **HUMAN SIDE: Procrastinate No More**

If you want to break the bad habit of putting things off, don't wait to read this.

By Ken Wysocky

18 **BETTER MOUSETRAPS: Moving in the Right Direction**

Specialized software helps Miami-Dade run an efficient backflow prevention program.

By Kurt Ferrell

20 **SUPPLY SIDE: Making the Most of Data**

The right software solution can help utilities raise the value of sewer inspection data.

By Luke Laggis

22 **NASSCO CORNER: Introducing the NASSCO Training Source**

New portal provides streamlined access to training and educational resources.

By Sheila Joy

28 INDUSTRY NEWS

30 **PRODUCT FOCUS: Pipeline Inspection, Surveying and Mapping**

By Craig Mandli

34 **CASE STUDIES: Pipeline Inspection, Surveying and Mapping**

By Craig Mandli

36 PRODUCT NEWS

Product Spotlight: Jetter line designed for simplicity and ergonomics

By Tim Dobbins

38 WORTH NOTING

People/Awards; Calendar

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ADVERTISER INDEX

COMPANY PAGE

	American Highway Products, Ltd.29
	Cam Spray35
	Cloverleaf Tool Co.27
	Composite Access Products (CAP)17
	CUES9, 23
	Envirosight LLC2
	GapVax, Inc.39
	Halliday Products, Inc.11
	InfoSense, Inc.19
	Jack Doherty Company27
	McElroy Manufacturing, Inc.8

COMPANY PAGE

NuFlow Technologies	3
	RapidView IBAK North America5
Reed Manufacturing.....	6
RELINER/Duran Inc.	11
	T&T Tools, Inc.29
VECTOR	
Vactor Manufacturing.....	40
Vivax-Metrotech Corp.....	29
WEQ Fair	28
	WinCan7
CLASSIFIEDS.....	35
MARKETPLACE	38

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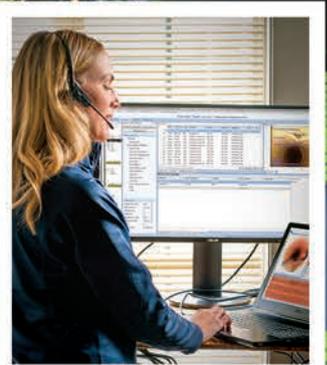
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Luke Laggis



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KEEPING PACE

The work never stops, and once you fall behind it's easy to get stuck in catch-up mode

There's a story about backflow prevention in this issue of *Municipal Sewer & Water*. Backflow prevention is important, but it goes beyond your water systems.

Think of backflow prevention as the gate between progression and regression. No one — and no project or process — moves continually forward at a constant pace. There are dips in momentum, and at those low points, it becomes much easier to slip backward instead of preparing for the next surge forward.

In a water system, whatever backflow prevention device you're using prevents water that has entered a private system from flowing back into your utility's distribution system. It's designed to prevent potential contamination. Simple and effective.

Your jobs are challenging, and the work never ends, so there really isn't time to take it easy.

In life, backflow prevention isn't as simple as installing a valve. There's no universal solution or failsafe that allows you to keep progressing without fear of regression. It takes vigilance and constant effort. You have to work. You have to take care of yourself physically and mentally.

Professionally, you have to apply these strategies to your utilities as well. In addition to the mechanical devices that prevent literal backflow in your systems, you have to fight figurative backflow in your overall operations.

It's easy to complete a project or reach a goal and then back off. When you focus and push until you complete the task at hand, it's only natural to want to relax a bit. But relaxing immediately puts the next deadline or goal in jeopardy.

It happens to me all the time with deadlines. Once I miss a deadline, I'm taking time away from the next deadline. Pretty soon I'm operating in catch-up mode, and all the planning I'd like to do gets put aside to take care of the urgent things that should have already been done. And then, suddenly, another deadline is right in front of me and there's even less time for the next issue. The same amount of work has to get done regardless, because the magazine has to go to print, but it becomes impossible to give everything the attention it deserves. Ultimately, if I don't get things back on track in a hurry, the magazine suffers.

Your jobs are challenging, and the work never ends, so there really isn't time to take it easy. Emergencies are inevitable, so even if you're on schedule, you can be thrown off by the urgency and extra work of repairing a ruptured water main or containing a sanitary overflow. How many times have you put routine yet critical tasks like cleaning, maintenance or valve exercising on hold to deal with a leak or overflow? In the best-case scenario, you get a little behind schedule, remedy the immediate problem and get back on track. Worst case, that delayed maintenance keeps you perpetually chasing problems and unable to ever get into a proactive mode.

That's the real common ground between your jobs and mine — nothing ever stops. You can never kick back and relax without consequence.

The difficult days are the ones where you can only hope to stay on track. The easy days are the ones where you have a chance to make progress. Take advantage when the opportunity is there.

Enjoy this month's issue. ♦

An advertisement for the McElroy DataLogger 7. It features a close-up of a worker in a white hard hat and safety glasses looking at a rugged tablet mounted on a piece of machinery. The background is a textured green. Text on the ad includes: "RECORD. DOCUMENT. DELIVER. ANALYZE. NONSTOP." and "The new DataLogger® 7's long-life battery and hot-swappable battery option allow your fusion jobsite to keep working no matter how long the workday. Capture a comprehensive record of your entire job on one rugged tablet — from machine/operator information to pipe specifications and GPS locations. Analyze reports to ensure that industry standards have been met." At the bottom, it says "LEARN MORE AT MCELROY.COM/DATALOGGER7" and "McELROY". A small copyright notice at the very bottom reads: "©2021, MMI Block and DataLogger are registered trademarks of McElroy Manufacturing, Inc. All Rights Reserved."/>

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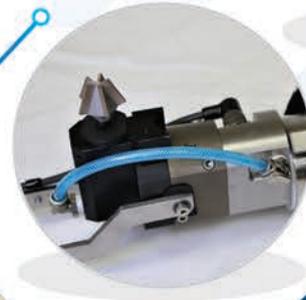
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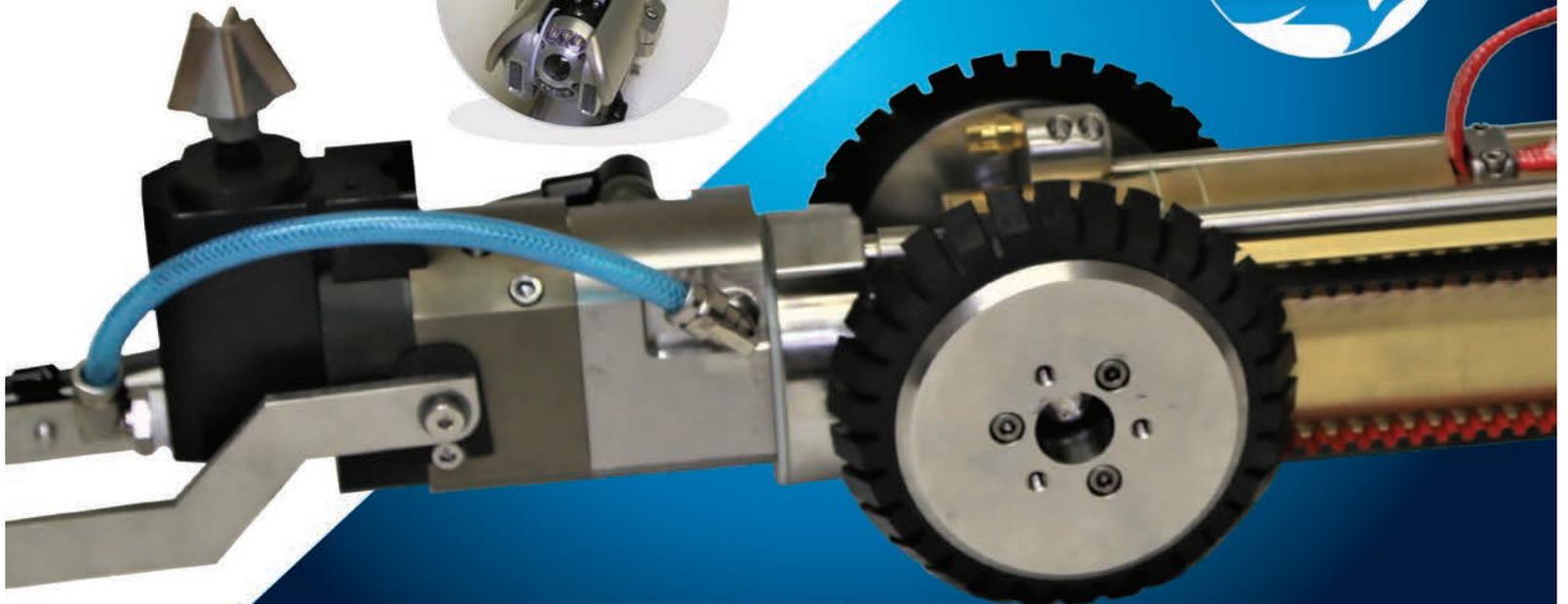
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7 SAFETY TIPS

Protect Your Workers From the Heat

Summer is a great time for construction work, but a brutal time for construction workers. Excessive heat and sun exposure pose significant dangers, such as sunburn, dehydration, heat cramps, heat exhaustion and heat stroke. This article offers tips to keep your crew safe. mswmag.com/featured

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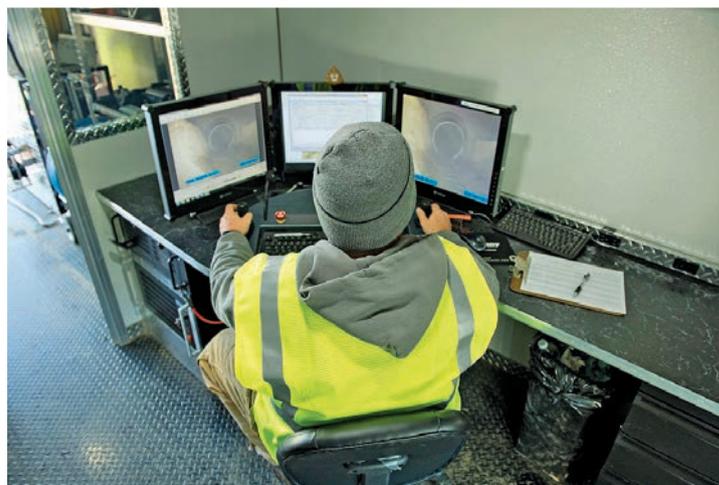
“As leaders, we need to believe in our people and tell them regularly where they are going within the organization.”

— *How to Keep Your Crew Fresh and Focused* mswmag.com/featured

A TURNING POINT

Flushable Wipes Settlement

After years of maintenance headaches for wastewater professionals, the recent settlement of a class-action lawsuit between Charleston (South Carolina) Water System and Kimberly-Clark Corp. is a significant victory for the wastewater industry. In this online exclusive article, we talk to Michael Saia, public information administrator for Charleston Water System. mswmag.com/featured



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A couple hallmarks of good CCTV inspection operators are resourcefulness and an abundance of common sense when it comes to solving safety issues and problems with equipment. But how do you find — or rather, develop — workers with this skillset? What does it take to become a CCTV operator? mswmag.com/featured



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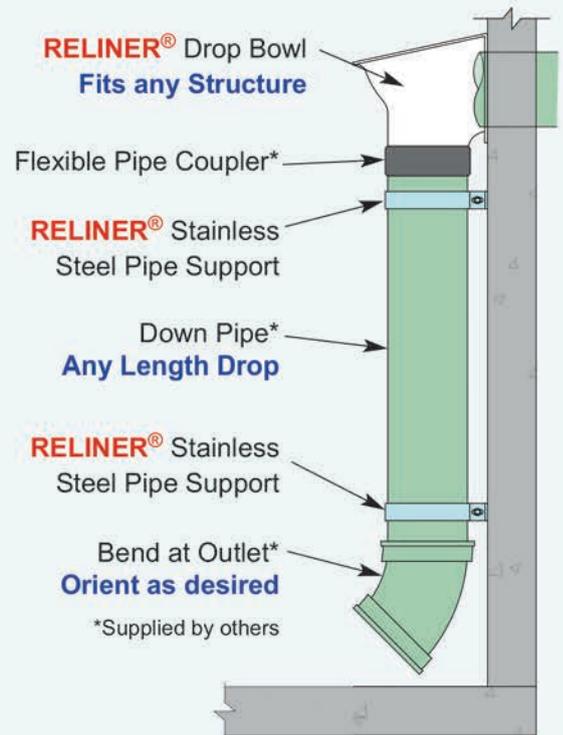
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LAYING THE GROUNDWORK



A 'green' mindset informs sewer district's approach to reducing overflows

By Ken Wysocky

As the Metropolitan Sewer District of Greater Cincinnati tackles one of the largest public works projects in city history, primarily aimed at reducing combined sewer overflows into local waterways, it's taking an unconventional approach: opting for "green" solutions whenever possible.

Since it formally began taking steps to reduce combined sewer overflows in 2009 as dictated by a consent decree negotiated with the United States Environmental Protection Agency, the utility has embraced everything from small-scale swales, green rooftops and rain gardens to larger endeavors, such as retention basins and stream-restoration projects.

"We've built a lot of above-ground storage and conveyance features that can either convey

or hold back stormwater for a period of time until there's sufficient capacity restored to the sewer system," says Diana Christy, the utility's executive director. "We've tried to make the best decisions possible [about using green techniques] from a cost standpoint and in terms of effectiveness for reducing combined sewer overflows."

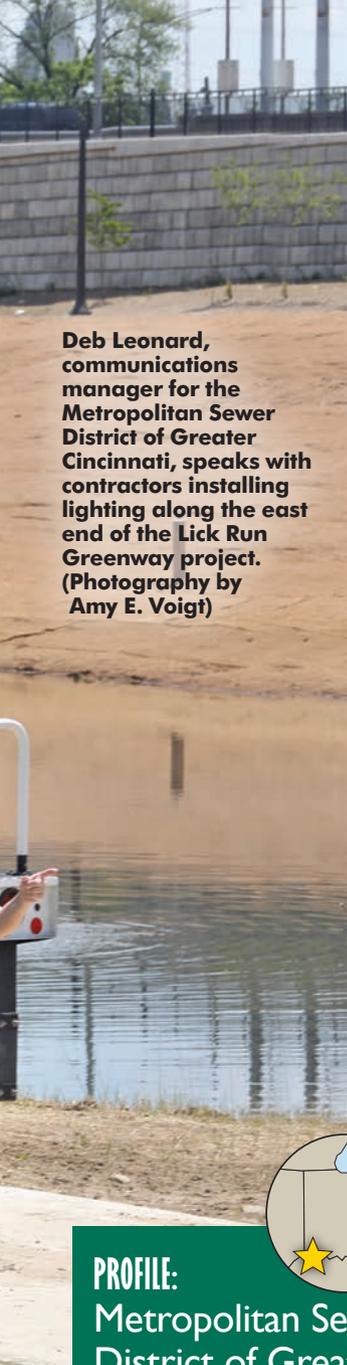
The roughly \$1 billion first phase of the massive public works initiative, called Project Groundwork, is scheduled for completion this summer. And it has attracted national attention for its innovative use of eco-friendly solutions to CSOs that for decades have degraded water quality in the Ohio, Little Miami and Great Miami rivers, as well as smaller creeks and waterways.

In fact, the EPA considers one major component of the first-phase initiatives — the Lick Run

Greenway project ("lick" is an old-fashioned colloquialism for "stream") — as a national model for sustainable, hybrid stormwater management that innovatively marries traditional sewer infrastructure with green strategies.

The project's centerpiece is as green as clover: a roughly 1-mile-long bio-engineered stream, surrounded by green space, that empties into Mill Creek, a tributary to the Ohio River, just west of downtown Cincinnati.

The engineered stream exemplifies the district's philosophy to divert stormwater from combined sewers whenever possible, instead of looking only at end-of-pipe solutions. The Lick Run Greenway annually diverts about 500 million gallons of stormwater from combined sewers and reduces combined sewer overflows by 400 million gallons,



Deb Leonard, communications manager for the Metropolitan Sewer District of Greater Cincinnati, speaks with contractors installing lighting along the east end of the Lick Run Greenway project. (Photography by Amy E. Voigt)

says Deb Leonard, the district’s communications manager.

Diversion tactics

Initiatives like the Lick Run Greenway reflect the utility’s overarching preference for green solutions — as long as they don’t cost more and are equally or more effective than traditional sewer infrastructure improvements.

While often necessary, more traditional solutions for solving CSOs are costly and can lead to demand for expanded wastewater treatment facilities, which also are expensive. For example, EPA officials had suggested the district build a deep tunnel that would store excess wastewater during heavy rainfalls until the treatment plant has enough capacity to handle it. But a project like that could easily cost half a billion dollars or more, Leonard says.

“End-of-pipe solutions don’t get at the root causes of combined sewer overflows,” she explains. “We believe that front-of-pipe solutions go after the root of the problem by collecting stormwater and diverting it from combined sewers.

“We frame it as green versus gray infrastructure,” she adds. “We try to think outside the box and go after the main culprit in combined sewer overflows, which is rainwater.”

The district serves a 290-square-mile area that covers Hamilton County and small portions of several surrounding counties. The system features about 3,000 miles of sewer lines, with 1,800 miles of sanitary sewers and roughly 1,200 miles of combined sewers, plus an additional 36 miles of dedicated stormwater sewers installed specifically to reduce CSOs.

The system also includes more than 100 pump stations, approximately 94,000 manholes and seven major wastewater treatment plants that treat about 160 mgd. The utility employs approximately 600 people and serves roughly 226,000 residential, commercial and industrial customers.

Some sewer cleaning, maintenance and inspection work is handled in-house, but larger projects are contracted out.

“Our employees focus on our customer-facing and priority work that’s generated primarily through service requests from the public and from our asset-management program, to mitigate risk,” Leonard says. “This allows our employees to be the ones interacting with the public.”

Employees use robotic inspection cameras made by RapidView IBAK and EnviroSight; inspection and mapping/analytics technology

“End-of-pipe solutions don’t get at the root causes of combined sewer overflows.”

Deb Leonard

developed by SubterraAI; SL-RAT acoustic-assessment equipment from InfoSense; EnviroSight pole cameras; and Red Dawg jetting nozzles manufactured by Texas Underground.

The utility also relies on combination jet/vac trucks from Aquatech (Hi-Vac) and camera and jetting trucks built out by Sewer Equipment.

Significant progress

The district’s wet-weather program started more than a decade ago after the EPA issued two negotiated consent decrees. At issue was an average of 14 billion gallons of annual combined sewer overflows at more than 200 permitted outfalls into local waterways in Hamilton County.

The first phase consists of 133 separate projects that already are yielding promising results. Combined sewer overflows have declined to 8 billion gallons from 14 billion annually. At the district’s worst sanitary sewer overflow site in the northern suburb of Reading, annual overflow events decreased significantly, from 47 down to eight.



Contractors put the finishing touches on the east end of the Lick Run Greenway project, where collected stormwater flows into the pond.

Furthermore, monitoring performed by the Midwest Biodiversity Institute shows significant improvement in water quality and aquatic habitat in local waterways, Leonard says.

“For example, the water quality in the lower portion of Mill Creek, a tributary of the Ohio River, is steadily improving,” she says. “Most sites that were rated as poor or very poor in 1992 have now improved to fair, good and, in a few instances, exceptional quality. The creek has also seen nine new fish species, including smallmouth bass, which do not tolerate pollution well.”

Waterway revival

The centerpiece of the district’s green strategies is the \$100 million Lick Run Greenway project. In essence, it involved the reincarnation of an old waterway by “daylighting,” or bringing back to the surface, an approximately 1-mile-long section of the “lick,” which empties into Mill Creek.

A bit of history provides some perspective. In the 1800s, Lick Run naturally flowed into Mill Creek, which in turn empties into the Ohio River. The watershed around it absorbed heavy rainfalls.

But as the watershed was developed commercially and filled with buildings and impervious streets, sidewalks and parking lots, more stormwater flowed into the creek and caused flooding. It also became a dumping ground for household waste and sewage, creating a public health hazard.



PROFILE:
Metropolitan Sewer District of Greater Cincinnati, Ohio

SERVICE AREA:
More than 290 square miles, primarily Hamilton County

SEWER INFRASTRUCTURE:
Approximately 3,000 miles of sewer lines (1,800 miles sanitary sewers, 1,200 miles of combined sewers and 36 miles of dedicated stormwater sewers), seven wastewater treatment plants, more than 100 pump stations, about 94,000 manholes.

DAILY WASTEWATER TREATMENT:
About 160 mgd

EMPLOYEES: Around 600

WEBSITE: www.msdcg.org

SMART SENSORS HELP OPERATORS AVOID OVERFLOWS

While the Metropolitan Sewer District of Greater Cincinnati builds a reputation for using green solutions to reduce combined sewer overflows, it also embraces technology to keep raw sewage mixed with stormwater from flowing into waterways during heavy rainfalls.

Take the district's smart sewer system, for example. It enables system operators to transport wastewater from about-to-be-overwhelmed sewer lines to large interceptor sewers, storage tanks and high-rate treatment facilities with more capacity, explains Deb Leonard, the district's communications manager.

The brains of the system are 770 sensors that continually record data such as flow and depth measurements. Sensor locations include every combined sewer overflow and sanitary sewer overflow site in the utility's service area.

The utility also relies on 35 rain gauges and collects data from sensors at nine remote wet-weather facilities, including flow and real-time information on equipment status and facility readiness. MSD also is in the process of integrating its more than 100 pump stations into the "smart" system.

The sensors work in conjunction with a SCADA system that enables district staff to remotely perform operations such as turning pumps on and off and opening and closing valves to divert wastewater into pipes with more capacity.

For example, when heavy rains fall in one part of Cincinnati, the interceptor sewers in that location may be full. But in other areas where it hasn't rained as much, capacity may be available.

"The district's entire system is monitored and more than 90% of our collected flows travel through sewers impacted or controlled by our smart sewer system," Leonard explains. "We operate nine remote wet-weather facilities — six that provide in-line storage in strategic locations within the collections system and three that offer offline storage."

The impact of the smart sewer system was felt almost immediately. Several weeks after it was deployed in early 2015 in the Mill Creek basin, a critical area that's especially prone to CSOs, it helped the district avoid 1.4 million gallons of overflows.

This was achieved by storing excess wastewater flows at a high-rate treatment facility roughly 11 miles away. In 2020 alone, the six in-line storage facilities prevented 1.5 billion gallons of combined sewage from overflowing.

In addition, the sewer system is much more cost-effective when compared to building either green stormwater controls or more traditional sewer infrastructure. District statistics show that the smart system costs about 1 to 3 cents per gallon of reduced overflow volume, compared to about 23 cents per gallon for green stormwater-management methods and about 40 cents per gallon for larger pipes and storage tanks.

"It allows us to use ratepayer dollars more efficiently," Leonard says.

In fact, the system is expected to save the district tens of millions of dollars by eliminating the need to build expensive infrastructure to control sewer overflows.

"We're using all the tools in our toolbox to reduce overflows," she says. "And that includes using lower-cost solutions wherever and whenever possible."



Communications manager Deb Leonard takes pictures of newly installed green infrastructure features aimed at reducing combined sewer overflows.

So in 1893, city officials effectively buried Lick Run by enclosing it in a roughly 20-foot-diameter brick storm sewer. With the advent of modern-day plumbing, the sewer line later was converted into a combined sewer.

It worked well for a while. But by the mid-1900s, the sewer line started to overflow into Mill Creek during heavy rainfalls. Eventually, it became the district's worst CSO site, Leonard says.

No deep tunnel

The EPA then mandated a deep storage tunnel as a solution, but the district persuaded the agency that a green solution, including a bio-engineered stream, would provide a much less expensive yet still effective solution. In 2013, the district began "bio-engineering" the stream along a course that runs just south of its original route.

"We selected the Lick Run watershed for green solutions because it's in a perfect bowl-shaped basin with a lot of vegetated hillsides, so we knew it could collect a lot of stormwater there," Leonard says.

"Most sites that were rated as poor or very poor in 1992 have now improved to fair, good and, in a few instances, exceptional quality."

Deb Leonard

The project also used other green strategies, such as bioswales and detention basins, along with conventional infrastructure improvements such as dedicated storm sewers, including a 1.5-mile-long stormwater conveyance box that runs under the creek to handle large rainfalls.

In addition, the district integrated green space and walking paths along the course of the now resurrected stream, built five bridges over the stream, and reconfigured roads. Moreover, 92 buildings were removed to make room for the project, which started in July 2017 and should be finished this summer.

"It's essentially a stormwater-management and CSO-reduction project that looks like a park," Leonard says. "It's a really cool project — the largest and most unique of 19 different green wet-weather projects in the Lower Mill Creek area, which encompasses four different watersheds."

More than infrastructure

"The Lick Run Greenway definitely is the centerpiece of all the work we did in phase one," Christy says. "It really shows what you can do by coupling green infrastructure with more traditional solutions. But it's not cost-effective to go completely green. You still need underground storage and conveyance capacity."

As a bonus, the Lick Run Greenway also reinvigorated a rundown area of Cincinnati as well as returned the area to more of its natural state.

"This valley used to be a place where water drained from the hillsides," Christy says. "But it became a corridor of strip malls and junkyards and a lot of abandoned and underutilized properties."

“It really shows what you can do by coupling green infrastructure with more traditional solutions.”

Diana Christy

She continues, explaining that “having all of that standing between two major one-way thoroughfares wasn’t a very good use of that land. But thanks to the greenway, space that was an eyesore now contains small parks and walking trails for the community. It was a very transformational project, not just a new sewer line.”

Leonard and other leaders hope it will be a catalyst for economic development. “We’re not in the business of economic development, but we hope that if we build it, [businesses] will come. That was part of the idea behind the green solution.”

The flip side of that, however, is that it’s not always easy to acquire all the land needed for such large projects.

“There was resistance from some property owners,” Christy says. “And it can be expensive if you have to acquire real estate, so sometimes it’s cheaper to take a more traditional approach to stormwater management.”

Eco-friendly tactics

The district also has helped design and construct smaller-scale, low-impact green development projects that are not part of Project Groundwork, such as rain gardens, cisterns, “living” rooftops and permeable-pavement projects. To accomplish this, the district partnered with about 20 community organizations such as schools, hospitals, businesses and even the Cincinnati Zoo to install green projects on their properties.

“We learned that these smaller-scale projects are great, but they’re not sufficient for the immensity of the problem we have with sewer overflows,” Leonard notes. “Most of them might divert, say, 10 million gallons of water from combined sewers, which is a drop in the bucket.

“We never counted any of these projects as part of the consent decree, but we tried them out to see if they’d work,” she continues. “In all, we’ve determined that they divert about 120 million gallons of stormwater from combined sewers annually.”

Long road ahead

Completion of the first phase of the wet-weather program is just one step in what remains a long journey for the district. It will take decades to complete the second phase and meet the criteria set out in the consent decrees, Leonard says.

Cost is a major factor, especially when the district still must maintain an existing sewer system that in some locations is more than 100 years old. Moreover, revenue is another limiting factor. The majority of the improvements are funded by ratepayer revenue, along with a smattering of grants and low-interest loans from the Ohio EPA.

“We can’t raise rates above what the community can afford to pay, which is why the projects are spread out over so many years,” she explains. “This is a marathon, not a sprint.”

It’s not yet known what projects the second phase of the project will include. In summer 2019, city officials proposed 73 projects spread out over 10 years with an estimated cost of \$800 million, and Hamilton County proposed 28 wet-weather projects over a five-year span at a cost of \$450 million.

But the district is in an unusual position because its workers technically are City of Cincinnati employees, but Hamilton County is in charge of the system and owns some of its assets. As a result, it will take time to forge an agreement, which also must be negotiated with the EPA.

Committed to green

The interim step in the process is what the district calls a “bridge phase,” which includes 26 wet-weather projects aimed at further reducing overflows. The estimated cost is \$61 million. Implementing a bridge phase ensures work doesn’t stop completely while second-phase negotiations continue.

In the end, it’s clear the district can’t use just green efforts to fulfill the con-



Top: Water falls into the upper end of the roughly 1-mile-long bio-engineered stream that flows through the Lick Run Greenway.

Above: The roughly \$1 billion first phase of Project Groundwork is scheduled for completion this summer. It has attracted national attention for its innovative eco-friendly solutions, but traditional infrastructure is still necessary to help control CSOs.

sent decree. But district officials are passionate about using such strategies as much as possible. In fact, the utility created a green infrastructure department with three dedicated employees, which underscores how serious it is about implementing more eco-friendly solutions to better control stormwater.

Nonetheless, fulfilling any large consent decree has to include a combination of methods and strategies — it can’t all be done green, Christy notes.

“At the end of the day, we have compliance obligations,” she says. “And if we can’t meet those with green solutions, then we have to go to more conventional approaches.”

Leonard adds that green projects simply aren’t feasible everywhere because they’re dependent on topography. “But we’re committed to doing them wherever possible and where we can get the biggest bang for our buck.” ♦

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PROCRASTINATE NO MORE

If you want to break the bad habit of putting things off, don't wait to read this

By Ken Wysocky

An old English proverb notes that all good things come to those who wait. But by and large, waiting to tackle tasks and projects isn't a good recipe for success in today's fast-paced workplace.

Nonetheless, many of us — 20% by one expert's measure — are procrastinators. And this vicious cycle of personal ignition failure is not only difficult to break, it also can lead to chronic stress and illness, job and life dissatisfaction, low productivity and symptoms of depression and anxiety.

Understanding what makes us put off tasks requires a dive into the science behind procrastination. After all, knowledge is power. And few people are more knowledgeable about procrastination than Tim Pychyl, the author of *Solving the Procrastination Puzzle: A Concise Guide to Strategies for Change*.

In simplest terms, studies have shown procrastinators aren't bad people or poor time managers. Instead, it turns out they're hard-wired to do it, says Pychyl, also an associate professor in the department of psychology at Carleton University in Ottawa and the founder of the university's Procrastination Research Group.

It's biology

Procrastination is essentially an arm-wrestling contest between the amygdala in the brain's limbic system, which is responsible for the fight-or-flight response, and the weaker prefrontal cortex, which governs the brain's information integration and decision-making capabilities.

And unless we know how to circumvent it, the amygdala usually wins.

"Essentially, we give in (to procrastination) to feel good," Pychyl explains. "We call it the amygdala hijack, which occurs when we face a task that prompts negative emotions, such as boredom, frustration, resentment and anxiety.

"We procrastinate because the amygdala perceives a task as a threat and hijacks the prefrontal cortex, so it can't plan or follow through with the executive functions it's supposed to implement," he continues.

The result? We feel relieved when we put off something we don't want to face. In essence, procrastination is a form of flight, he notes.

"It's totally rational to want to feel good instead of bad," Pychyl says,

"but if you can't attend to what you're supposed to attend to, you can't self-regulate. It's like having a thermostat that doesn't pay attention to the temperature."

The upshot? Avoidance only makes you feel good in the short term. And eventually "it bites you in the butt," Pychyl says.

Follow the science

The science behind procrastination has come a long way in the past decade. For example, one study showed that people who habitually procrastinate have larger amygdalas, Pychyl notes.

"This finding backs up the assertion that, in effect, procrastination isn't a time-management issue, it's an emotional management issue," he says.

Furthermore, Hal Hershfield, a social psychologist and associate professor of marketing and behavioral decision-making at the University of California – Los Angeles, published a study in 2015 that added another piece to the procrastination puzzle. The study showed that an emotional disconnect often exists between our present selves and future selves that leads to bad decisions and behaviors.

What does that have to do with procrastination? Well,

Eve-Marie Blouin-Hudon, a graduate student of Pychyl's, took that study's conclusion a step further. She led a study that examined whether guided meditation could help students better achieve their academic goals by envisioning their future selves.

The results of the study showed that participating students developed more empathy for their future selves, which led to decreases in procrastination.

Managing emotions

Much of managing procrastination comes down to better control over emotions.

"If you want to procrastinate less, you have to focus on short-term mood repair — better regulate your emotions," Pychyl says.

One thing that can help is mindfulness training, or learning how to



Tim Pychyl

“It’s like having a thermostat that doesn’t pay attention to the temperature.”

Tim Pychyl

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.

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meditate. Deep-breathing and relaxation exercises help the body's parasympathetic nervous system kick in and stop the amygdala from firing on all cylinders, he explains.

In fact, a study published by a German researcher in 2016 showed that people who practiced mindfulness procrastinated less. In addition, a former University of Pittsburgh researcher, Adrienne Taren, conducted a study that showed mindfulness training actually can shrink the size of the amygdala and strengthen connections with the prefrontal cortex.

What else can people do to stop procrastinating? Become aware of our negative feelings about a task and learn something from them, rather than coping by avoiding, Pychyl suggests.

“If you want to procrastinate less, you have to focus on short-term mood repair — better regulate your emotions.”

Tim Pychyl

yourself about the next action you can take on the project, even though your body may be screaming that you don't want to do it. When we focus on action, not the emotion, it leads to motivation. And at some point, the self just hauls off and does what it needs to do.”

“We need to be aware of our emotions because they can teach us things,” he says. “One of my favorite mantras is you can have an emotion, such as frustration, resentment or anxiety about a job or project, without *being* the emotion.

He notes that “when you realize why something makes you anxious, then you're able to get going. So the next step is asking

“Procrastination is effectively a transgression against yourself.”

Tim Pychyl

Difficult but rewarding

It sounds simple and sensible, but Pychyl readily concedes that changing years of deeply ingrained mental muscle memory is anything but easy. But it helps if people can forgive themselves if they take the proverbial one step forward and two steps backward, he points out.

“Procrastination is effectively a transgression against yourself,” he explains. “But you have to practice some self-compassion. Change is difficult and it doesn't happen overnight.”

In fact, a study Pychyl did 10 years ago about self-forgiveness and procrastination showed that students who forgave themselves for procrastinating subsequently procrastinated less going forward than people who didn't forgive themselves.

On a related note, many procrastinators tend to be perfectionists; they're too busy trying to live up to the expectations of others, which more often than not makes them feel bad when they don't measure up.

“Another one of my favorite mantras is there are cracks [imperfections] in everything,” Pychyl notes. “But cracks are what let in the light. So don't let expectations for perfection cripple you.”

That philosophy underscores Pychyl's belief that learning to manage procrastination can yield profound results that transcend the workplace. Time is a nonrenewable, so if we waste it, we essentially are wasting life itself, he says.

“If you stop procrastinating, it can change your life — if you want it to.” ♦

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MOVING IN THE RIGHT DIRECTION

Specialized software helps Miami-Dade run an efficient backflow prevention program

By Kurt Ferrell

Backflow prevention devices are critical to providing clean and safe drinking water. Miami-Dade County, with 2.8 million residents, has roughly 30,000 of the devices in its system.

The mechanical valves prevent the reversal of water — and potential system contamination — once it has passed through. The Safe Drinking Water Act makes backflow prevention a necessary component of every municipal water distribution system, and compliance is mandatory.

Like most utilities, Miami-Dade requires certain water customers to install backflow prevention assemblies at their water service connections. Backflow devices are most common at hospitals, assisted living facilities, service stations, auto repair shops, and water customers with lawn irrigation systems. But it doesn't stop just at installation.

"Because the backflow preventer is a mechanical device with springs, moving parts

and rubber seating surfaces that wear over time, the devices need to be tested every year to ensure that the assembly is working properly," says Juan Pelay, chief of meter operations and maintenance for Miami-Dade County.

To identify and address backflow and related safety issues, public and private water professionals, planning and development departments and health department staff need an efficient, effective way to manage cross-connection control inspections, assembly installations and annual testing.

Streamlined process

Pelay has been running the Backflow Prevention Program at Miami-Dade for almost 25 years. His technical staff uses Tokay, a compliance and data management software program from Aquatic Informatics, to manage the information gathered from 1,100 certified testers reporting on 30,000 devices annually.

"What I like most is the ease of use."

Juan Pelay



Miami-Dade County has a robust backflow prevention program, with devices commonly installed at hospitals, assisted living facilities, service stations, auto repair shops, and water customers with lawn irrigation systems.

Miami-Dade uses Tokay, a compliance and data management software program from Aquatic Informatics, to manage the information gathered from 30,000 backflow prevention devices annually.

“It’s a treasure trove of accurate, reliable data for our team to easily access and sort the data they are looking for.”

Juan Pelay

Tokay is a secure, central repository that streamlines the administration of backflow prevention programs. It automatically synchronizes water customer records from billing software, continuously updates mailing addresses and maintains lists of industry-approved backflow assemblies. County staff can schedule activities, generate reports, send notices to water customers and provide backflow technicians with vital information.

“What I like most is the ease of use, and having everything we need on one screen gives us a snapshot of all the cross connections, so we know where we need to focus,” Pelay says.

The county’s approach combines the power of the cloud with an on-premise database to modernize the test submission process. The utility website is the entry portal for Tokay WebTest, where utility-approved testers enter test results for a \$5 fee that helps cover program costs. Each night, all test records are automatically downloaded from the cloud to the Miami-Dade server, and any changes in customer information are synchronized to the tester portal. In the morning, tests are downloaded, approved, accepted into the Tokay database, and the next test date is scheduled electronically.

“The field-entry for test data with recurring data syncs is fantastic for us. The WebTest sync takes less than one minute per test; the old method took us three to four minutes per test with a dedicated person processing 150 tests a day. Now we can do it all in 10 minutes,” Pelay says.

Miami-Dade is in total control of who can access the tester portal. Rules can be set to disallow testers or companies with expired certifications and/or test kits. Testers that are in good standing have access to information about the site and assemblies without having to call or put in a request with county staff.

“Because the data in Tokay is so current with the annual updates from testers, and automated weekly synching, we often use it for finding other information. For example, if we want to find out how many meters are in a location or how many accounts are tied to a specific customer. With 450,000 metered connections across the state’s most populous county, it’s a treasure trove of accurate, reliable data for our team to easily access and sort the data they are looking for,” says Pelay.

Compliance and reporting

The Miami-Dade Water & Sewer Department is also required to file an annual report with the state of Florida and uses Tokay to provide quick and easy reporting by managing data with unlimited filters, giving staff the ability to immediately drill down on any field and view contents across the entire database. This makes it simple to view program statistics, track and define data and produce reports. The built-in templates can be populated with a click of a button to automate regulatory reporting, saving time and improving data accuracy by avoiding human error associated with manual data entry.

As most of the county is flat, its most challenging compliance issues are typically with the high-rise apartments. Setting alerts and reminders are particularly useful to ensure the devices are being tested as needed.

“With our backflow prevention data being managed so efficiently we now spend the majority of our time dealing with compliance issues,” Pelay



says. “We can focus our resources on minimizing the potential for contamination from backflow and improve our water quality testing to ensure our drinking water is safe.” ♦

Kurt Ferrell, a territory sales executive for Aquatic Informatics, works with customers to find solutions that optimize backflow, FOG and industrial pretreatment programs using the latest data management technologies.

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MAKING THE MOST OF DATA

The right software solution can help utilities raise the value of sewer inspection data

By Luke Laggis



“We test every new solution rigorously in the field before it ever sees the light of day.”

Mike Russin

Sewer inspection is only as valuable as the data it yields. It starts with recognition and accurate coding of defects, but the real value comes when that data is leveraged to make smarter infrastructure management decisions.

WinCan was the first inspection software on the market, and over the past 30 years it has evolved to give utilities greater insight and additional capabilities. Getting the most out of inspection data is critical, and WinCan is helping utilities do just that.

Mike Russin, general manager for WinCan in the Americas, is an old hand in the industry.

He started doing sewer inspection for a contractor in North Carolina 30 years ago, then took a job as a municipal wastewater project inspector before moving into sewer equipment sales and eventually software with WinCan. Since 2001, he has been a steadfast NASSCO member, a certified trainer, and has served on the NASSCO board of directors and as chairman of the Software Vendor Committee.

Municipal Sewer & Water recently caught up with Russin to talk about WinCan, its capabilities and the future of sewer inspection.

MSW: Can you give a brief overview of WinCan and its capabilities?

Russin: When it comes to understanding the condition of wastewater collections system assets, WinCan is the world’s most trusted software. It was also the first software on the market to fill that role. Early on we focused on data collection, but now WinCan is a full-featured platform for helping wastewater professionals make confident decisions about infrastructure maintenance. It offers powerful analytics and data visualization tools, plus a robust cloud platform that lets all members of a wastewater team collaborate to get essential work done — and do it rapidly, cost-effectively and securely.

MSW: What differentiates WinCan from other sewer inspection software?

Russin: Using WinCan, everything starts with a flexible workflow. Those who gather sewer footage, code it, analyze it, plan maintenance, do budgeting and perform cleaning and rehab — they’re seldom the same people with the same needs. We focus on making it easy for each team member to do

WinCan provides the flexibility for everyone within the workflow, from planning and budgeting to inspection and rehabilitation, to view data the way they need to and hand off their work efficiently to the next person.

“At WinCan, the future of AI is here already.”

Mike Russin

their job, view data the way they need to and hand off their work efficiently to the next person. This is coordinated through a cloud platform that gives every team member immediate, online access to the latest data using any web-enabled device — all using the latest protocols for security and redundancy.

MSW: What’s the philosophy behind development and innovation at WinCan?

Russin: We never pursue technology for technology’s sake. We develop our product roadmap based on customer feedback, and we seek innovation that helps cities make better decisions with less effort and budget. We test every new solution rigorously in the field before it ever sees the light of day.

MSW: What role will artificial intelligence play in the future of sewer inspection software?

Russin: At WinCan, the future of AI is here already. Our new Sewermatics suite of service offerings uses cutting-edge AI to recognize defects, identifying both type and qualifying details. That AI scan is then vetted by a team of PACP-certified experts to ensure the highest accuracy and to train our AI engine to become even more perceptive. Down the road, we’ll be extending this AI to field operators and office coders where it will provide automatic assistance in the coding process and offer the ability to “scrape” massive sets of legacy data to identify defects, deterioration and other trends that may have escaped prior notice.

MSW: How do the different WinCan software packages and modules fit together and help you customize systems for clients?

Russin: We’ve modularized our solutions so customers invest only in what they’ll use, and we’re very cognizant about offering capabilities that support our customers’ processes, rather than forcing customers to adapt their processes to our software. Clients can also offload any data management task to our Sewermatics team — coding, data migration, third-party integrations and customizations. This gives them the flexibility to maximize their own internal resources while alleviating bottlenecks and competency gaps.

MSW: How does WinCan integrate with asset management systems?

Russin: We’ve always recognized wastewater infrastructure O&M has much broader implications on budget, environmental compliance and rate-payer satisfaction. We’ve built out robust, bidirectional integrations with some of the biggest names in municipal enterprise software: Esri, Cityworks, CentralSquare (powered by Lucity) and Cartegraph, to name a few.

MSW: Is existing inspection data easily imported to WinCan?

Russin: Absolutely, WinCan is able to import and validate any PACP, LACP, MACP and WRC certified data set, along with many others. Mapped imports make it easy to ingest noncompliant data, and our Sewermatics team is always able to help with challenging data sets or high volumes of data.



The WinCan Rehab Planning Module can build a systemwide matrix of defects by type, severity, criticality and proximity, and then cross-reference that against a database of regionally available rehab methods, each with its associated cost and availability.

MSW: How does the software help utilities plan rehabilitation projects?

Russin: When people think of AI for sewers, they think of defect recognition. At WinCan, we’re also developing AI to recommend smarter rehabilitation strategies. Our Rehab Planning Module will build a system-wide matrix of defects by type, severity, criticality and proximity, and then cross-reference that against a database of regionally available rehab methods, each with its associated cost and availability. It will then auto-generate — in minutes — a plan that delivers maximum impact for a given budget, saving municipalities weeks of analysis and guesswork.

MSW: How do you work with utilities to make sure they get a system that meets all their needs?

Russin: No matter how simple the need, our sales approach is highly consultative. If a customer doesn’t get incredible value out of using our solutions, we know they won’t be our customer for long.

MSW: What sort of training and support does the company provide?

Russin: We have the industry’s largest training and support team. We offer that support by email, phone or on site. For support cases, our team maintains a satisfaction survey rating of 97%.

MSW: What do you say to the small municipal utility that isn’t sure if the investment in this system will provide a return?

Russin: WinCan can deliver incredible insight, even for small data-sets. But regardless, growth can’t always be anticipated, and if you have clean, comprehensive data and processes, it’s much easier to support growth than if you’re playing catch-up. With your inspection data in WinCan, you’re ready for whatever the future may bring.

MSW: What has you most excited about 2021 and moving forward?

Russin: AI has huge potential to ease the bandwidth constraints municipalities are facing, and to deliver better insights and smarter strategies. Cloud technology like WinCan Web is already supporting collaboration among remote teams and enabling workflows that start with field inspections and end with high-level budget justifications. Beyond that, we continue to offer support for emerging technologies like side-scanning, laser/sonar-profiling and Lidar-based geometry acquisition. And we’re working on some pretty cool technologies that extract geometry from video, model underground assets based on data from XYZ sensors and support augmented reality for virtual visualization of buried assets out in the field. ♦

INTRODUCING THE NASSCO TRAINING SOURCE

New portal provides streamlined access to training and educational resources

By Sheila Joy

NASSCO's vision is to increase the awareness of aging underground infrastructure and to provide viable solutions through education, technical resources and industry advocacy.

The first pillar of our vision — to educate the underground infrastructure industry — ensures standards are met and promotes the continued acceptance and growth of trenchless technologies. The Pipeline Assessment Certification Program (PACP) has exploded to include more than 40,000 certified individuals, and the Inspector Training Certification Program's (ITCP) expanded curriculum now includes CIPP, manhole rehab and, in the future, grouting. NASSCO recently launched a new learning management system, the NASSCO Training Source, to accommodate this growth.

With COVID-19 bringing the unexpected opportunity of virtual PACP and ITCP sessions, it became apparent very early into the pandemic that students enjoyed the opportunity to become certified anywhere, at any time, from the comfort of their home or office. We also quickly learned that virtual learning allowed NASSCO-certified trainers to be more accessible, able to teach online or in person, without the expense or time commitment of travel.

For all the benefits of virtual training, in-person classes offer face-to-face

engagement and a level of learning that many students and trainers prefer. With the CDC's lifting of COVID-19 restrictions, many NASSCO-certified trainers and students are heading back to the brick-and-mortar classrooms in increasing numbers.

Whether a class is taught virtually or in person, the NASSCO Training Source, launched earlier this summer, simplifies the registration process for students, making for a streamlined experience where you can utilize your unique portal to receive session information and updates, track your progress, download certificates, explore other learning opportunities and so much more. With the majority of administrative tasks now being automated via the NASSCO Training Source, NASSCO-certified trainers also benefit, giving them more time to prepare for the sessions, provide quality learning experiences and work with their students.

In addition to simplifying the PACP and ITCP registration process, NASSCO plans to use the NASSCO Training Source to offer additional educational opportunities and courses in the future, with much of the curriculum providing a one-stop-shop for the attainment of CEU and PDH credits.

To explore NASSCO's Training Source, visit nassco.org. ✦



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

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Trainer: John Jones

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Oct. 18, 9 a.m. EDT

Frederick, MD

Includes: LACP, MACP, PACP

Trainer: Rizwan Siddiqi

443-739-9234 • rasiddiqi@gmail.com

Oct. 19, 8 a.m. EDT

Virtual Classroom Training

Includes: LACP, MACP, PACP

Trainer: Lindsey Sylvester

603-606-4436 • lindsey.sylvester@wright-pierce.com

Oct. 19, 8 a.m. EDT

Virtual Classroom Training

Includes: ITCP - CIPP

Trainer: Michael Lukas

813-504-3663 • mjlukas20@gmail.com

Oct. 21, 8 a.m. EDT

Cincinnati, OH

Includes: ITCP - MANHOLE REHABILITATION

Trainer: Tim Back

513-253-8461 • timbacktwo@gmail.com

Oct. 25, 8 a.m. EDT

Virtual Classroom Training

Includes: LACP, MACP, PACP

Trainer: Susan Dakak

865-320-6332 • susan.dakak@smartviewslc.com

Oct. 26, 8 a.m. EDT

Virtual Classroom Training

Includes: LACP, MACP, PACP

Trainer: Jerry Weimer

513-659-5008 • jerryweimerconsulting@gmail.com

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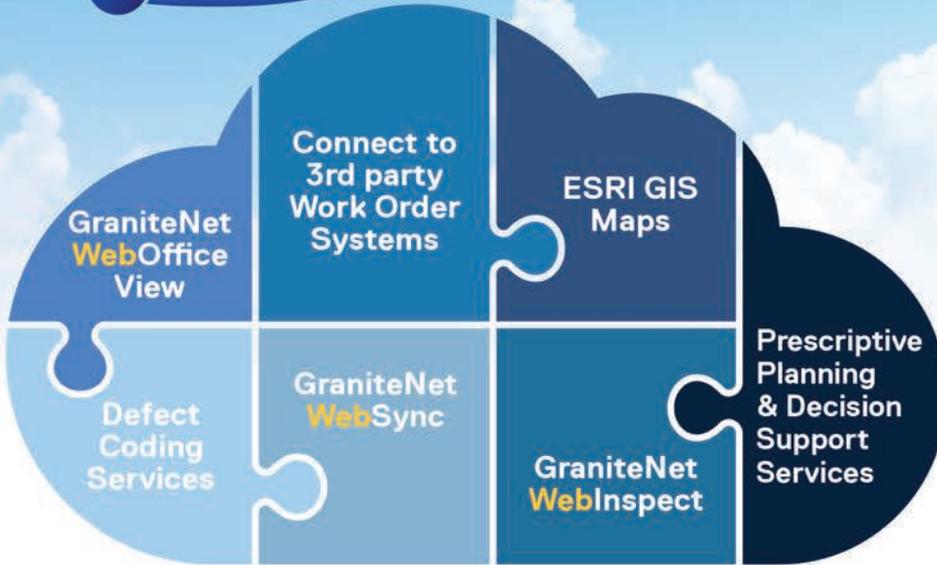
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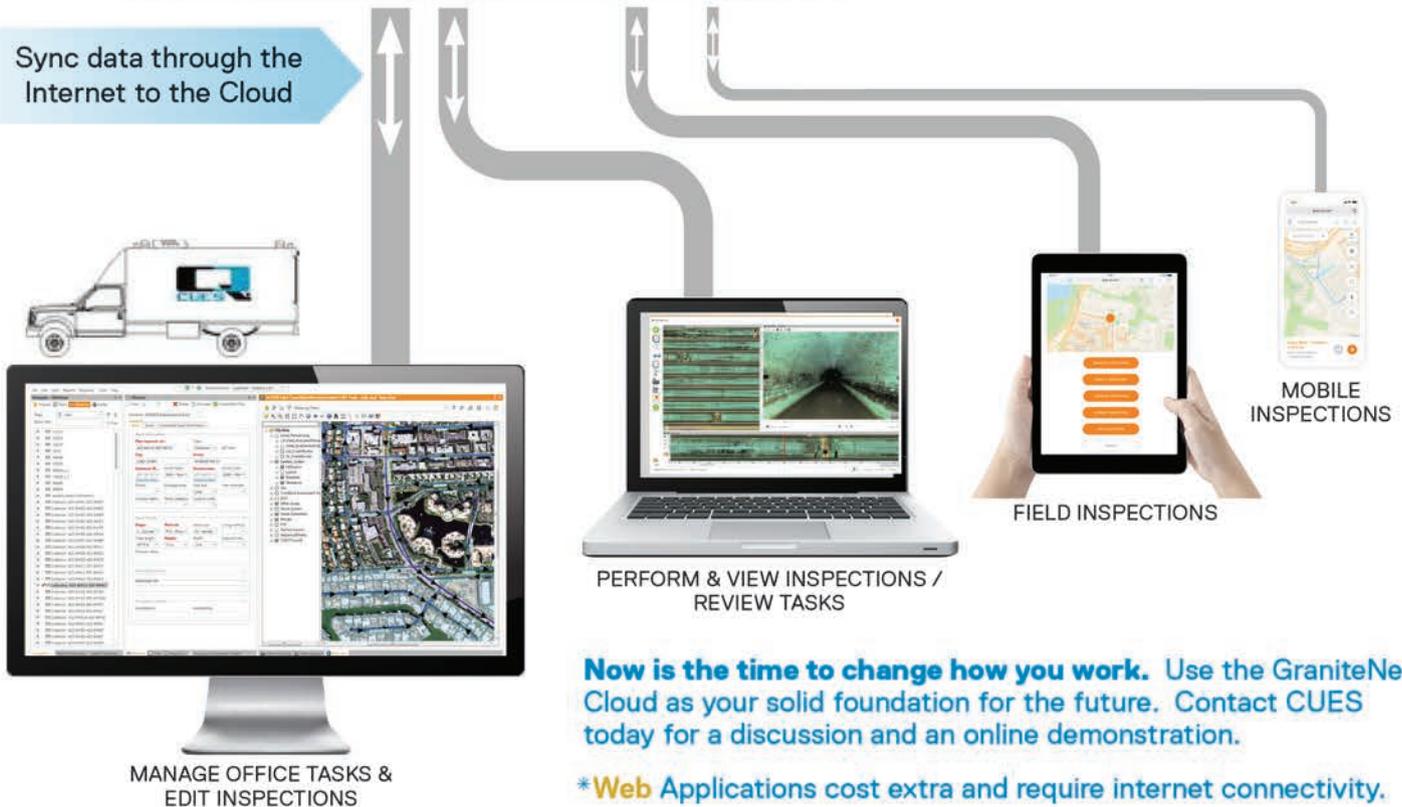
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FOCUSED ON RENEWAL

A legacy water system in upstate New York serves beyond municipal boundaries

By Giles Lambertson

The Village of Saugerties is situated at the base of the Catskill Mountains in upstate New York. The small community sits at the confluence of Esopus Creek and the Hudson River, and several streams rush down to feed the Blue Mountain Reservoir.

Water resources aren't scarce here, but century-old infrastructure, seasonal spikes in demand and overlapping municipal boundaries present challenges of their own.

This is an old village. The name "Saugerties" is roughly the Dutch equivalent to "sawyers," a tribute to various sawmills that were established on the local creek in the 1600s. The village was incorporated in 1831 under a different name before being changed to Saugerties in 1855.

Like other legacy systems in communities along the Hudson River, the Saugerties water system functions in a jumble of jurisdictions.

"We have some areas that are more troubling than others," says Mike Hopf, the village's water superintendent. "Some of the oldest parts are cast iron and probably date to the 1920s. We continue to have breaks and failures in the lines, but we have a program of regular infrastructure replacement. It's ongoing."

Hopf is a 31-year veteran of the water industry and

has led the village water department for a decade. His predecessor had a similar emphasis on upgrading the village's facilities and distribution system, so modernization of the system has been the department's *modus operandi* for quite a while.

Municipal ties

The Village of Saugerties lies within the Town of Saugerties. They are separate entities, with the village having its own six-person board of trustees and mayor governing the roughly 2.5 square miles in the village. The separate town also has its own governing body — and both village and town are part of Ulster County.

This gets interesting when talking about water. A private company in the village began to supply water to residents way back in the 1880s, selling the water system to the village a decade later. Today, the village draws water from the Blue Mountain Reservoir, treats it and distributes it to some 4,500 village customers.

It also wholesales water to the Town of Saugerties, which distributes it to another 5,500 customers in three water districts — Kings Highway, Glasco and Malden. The first of these districts began to receive village water back in the 1950s. Today, the Town of Saugerties relies solely on the village for its potable water and, in fact, claims about 60% of the village's total distribution.

"After we wholesale the water, the town has its own distribution system and employees and does its own water quality sampling. There's a lot of redundancy," Hopf says, noting that the idea of combining systems has come up but nothing has ever materialized.

Meeting demand

In addition to serving beyond municipal lines, the Village of Saugerties must also meet the demand of a robust seasonal tourism industry.

Mike Hopf, the water superintendent for the Village of Saugerties, New York, drains a fire hydrant outside the village's 3-million-gallon water storage tank. The village has made consistent improvements to its water treatment plant and distribution system. (Photography by Christopher Capozziello)



The upstate New York communities on the west side of the Hudson River attract crowds from surrounding metro areas. The village welcomes tens of thousands of visitors during summer months.

“People like to get a break from New York City, take a two-hour drive and spend a weekend here,” Hopf says, noting the area has nice shops and restaurants and a lighthouse at the end of a trail that people like to hike out and see. “Our demand goes up in the summer.”

Saugerties is also home to one of the biggest hunter/jumper horse shows in the country — the HITS-on-the-Hudson Grand Prix. In 2019, before COVID disrupted everything, the event featured eight weeks of shows with \$3 million in prize money. Lots of water gets pumped to fill horse troughs, flush restroom facilities and meet the demands of local lodging.

HITS alone is enough to tax a water service company, but there are

other seasonal attractions. The annual two-day Hudson Valley Garlic Festival can draw as many as 50,000 visitors, and a calendar full of other festivals and events keep water demand high throughout the warmer months.

The village’s summer water usage peaks at 1.2 mgd, about 300,000 gallons per day above off-season demand. That’s a major expansion of volume, but one that the village’s reservoir, backup storage and treatment plant have the capacity to handle.

And it doesn’t come at great expense to the locals. “Our rates are pretty good for the area,” Hopf says. A typical quarterly water (and wastewater) bill for a family of two in the village is about \$100.

Keeping up

Making sure the systems function reliably for both residents and visitors alike falls on Hopf and his six employees.

“Some of the oldest parts are cast iron and probably date to the 1920s.”

Mike Hopf



Distribution operator Bill Voerg helps install a rebuilt raw water pump turbine at the Saugerties Water Treatment Plant. The village draws its water from the Blue Mountain Reservoir.



PROFILE: Village of Saugerties (New York) Water Department

SERVICE AREA:
2.5 square miles in the village,
and approximately 7.5 square
miles in the Town of Saugerties

DEPARTMENT EMPLOYEES:
6

CUSTOMERS:
4,500 in village, about 10,000
including town distribution

CONNECTIONS:
1,500 in the village, another
1,800 in the town

MILES OF WATER MAIN:
22 miles of water main,
all in the village

WATER RESERVOIRS:
Blue Mountain Reservoir

AVERAGE DEMAND:
900,000 gpd

**TREATMENT PLANT
CAPACITY:**
1.8 mgd

WEBSITE:
[www.facebook.com/
SaugertiesWater](https://www.facebook.com/SaugertiesWater)

“People like to get a break from New York City, take a two-hour drive and spend a weekend here.”

Mike Hopf

The system includes two transmission mains — one 12- and one 16-inch — that run 5 miles from the plant to the village, while the distribution system is comprised of 4-, 6-, 8- and 10-inch lines.

Maintenance and upgrades are a continual focus of the crew. Some of the system rehab work is also handled in-house. Two fairly recent projects included the replacement of 1,500 feet of 8-inch PVC water main, a \$30,000 undertaking, and about 500 feet of 6-inch main at a cost of \$16,000. The last major water main replacement job by an outside contractor was more than a dozen years ago, according to Hopf. The next significant one will be bid out in the next couple years.

Any in-the-ground projects undertaken in-house rely on an excavation crew from the village’s Department of Public Works, with Hopf’s crew then installing the pipe, disinfecting and testing it. If a hydrovac truck is needed for flushing or uncovering a line, Public Works shares its rig with the department.

Besides keeping distribution lines intact, the village department maintains some 150 hydrants, annually budgeting \$10,000 for replacement. A small number of valves are also replaced each year.

Leak detection is another critical function, especially with an aging distribution system. Hopf has equipment to do the job, but the village also works with its neighbors to share resources and expertise.

“We have a working relationship with some other municipalities. The Town of Ulster will correlate leaks for us, for example, and circuit riders from the New York Rural Water Association check leaks.”

Three years ago, two major leaks in the village system were discovered. One of them went unnoticed for quite a while because the leaking water was flowing into a creek. The two leaks combined resulted in the loss of some 80 gallons of water per minute.

Any repair work involving digging usually is undertaken between May and late November. Winter weather precludes much excavation during the coldest months. “It all depends on when the frost decides to come and when it decides to leave,” Hopf says. “This last winter was unusual. We had very little frost and you could excavate all year.”

Funding

Funding upgrades — even maintenance — for a village water system can be tricky, especially one that primarily serves residential customers and small retailers. The village has no big industrial clients, and the largest customer is a senior center with a few hundred residents.

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Bill Voerg traces a waterline using a McLaughlin (Vermeer) LX locator outside Cantine Memorial Field. The water system serves approximately 4,500 people through 1,500 service connections in the Village of Saugerties, with another 1,800 connections in the Town of Saugerties.

SNIFFING OUT WATER LOSS

Water customers served by the Village of Saugerties probably are no more demanding than any other water department customer base. They just want water when they turn on the tap, don’t want to pay any more than necessary for the vital fluid and certainly don’t want to pay for water they don’t use.

The community’s water department has the concerns covered, according to superintendent Mike Hopf. The department is able to supply the village — and customers in the adjacent Town of Saugerties — with a relatively abundant quantity of quality water to meet everyday needs, and what residents pay for it is in line with or better than rates in other area departments.

The department also is working diligently to keep water loss to a minimum, including leaks that occur on the customer’s side of the distribution system. The private stock of waterlines in the community is 90% copper and in pretty good shape.

Yet leaks happen and Hopf is on them quickly. “One of the first things that we did when I came here 10 years ago was replace 25-year-old water meters. We were reading meters quarterly and there was no real way to do leak detection on the customer’s side.”

In the village proper, the department installed 1,500 Neptune water meters linked to I-Tron endpoint radios. About the same time, the town installed Sensus iPERL smart meters for the system’s other 1,800 connections. Consequently, meter-reading of all 3,300 connections is a convenient drive-by process. Perhaps more important, water usage now can be monitored monthly and system malfunctions spotted quickly.

“We read them monthly and look for leaks to better serve customers,” Hopf says. “Before, if there was an undetected leak that was three months old, it could cost customers thousands of dollars. Our monthly monitoring has been well-received by customers. I think we have a good relationship with them.”

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Superintendent Mike Hopf works on a raw water pump (Mueller) at the Saugerties Water Treatment Plant.



Distribution operator Bill Voerg, Superintendent Mike Hopf and plant operator George Beisel (from left) stand inside the Saugerties Water Treatment Plant.

"We have identified sections of the distribution system to be replaced, but unfortunately it often comes down to money. We bond out a job and when the bonds are paid back, it opens things up for another project," Hopf says.

New York state does not help pay for new lines but has contributed to other projects in the village. The Governor's Office of Storm Recovery paid for installation of rapid sand filters and other upgrades to the village's water treatment plant. State funds some 20 years ago also paid for a 3-million-gallon storage tank. The tank gives the system about three days of emergency water in the event water flow from the reservoir and treatment plant is disrupted.

The state also is funding the village's search for an auxiliary water source in the event the reservoir becomes polluted for a short time because of either a natural or man-made disaster. It might seem odd that a commu-

nity situated on the banks of the Hudson River would need to search for a water source, especially since many communities draw Hudson water into their treatment plants. But Saugerties is taking a different route.

The village has been trying for four years to identify and acquire a good spot for a backup well. The Storm Recovery office paid for the drilling of several exploratory wells. The chosen site will be a gravel well going down some 110 to 125 feet and capable of producing 200 gallons a minute.

"The reservoir has been our source for over a hundred years," Hopf says. "The Catskill runoff is low in organics and is high-quality water. The community has never really given thought to tapping the river. There just hasn't been a need." ♦

Logiball receives award from NASTT

USL America announced that Logiball was recognized for its Long Span Grouting Packer by the North American Society for Trenchless Technology. The Abbott Innovative Award is granted each year to companies with state-of-the-art products that make a significant impact in advancing the trenchless industry. The award recognized the custom-made packers that are used by specialty contractors to seal longitudinal cracks and fractures in municipal sewers.

SEEPEX announces staff changes

SEEPEX announced several staff changes. The company welcomed Ben Wells to the sales team as territory manager. Wells will be supporting the SEEPEX West region consisting of California, Hawaii, Nevada and Arizona. In addition, SEEPEX veteran Bill Martiniere is taking on the role of chemical market manager, and Juda Medina is taking on the new role of inside sales representative.



Ben Wells



Bill Martiniere



Juda Medina

Enviro-Care is now SAVÉCO North America

Enviro-Care has rebranded as SAVÉCO North America, with a new domain name of savecowaterna.com.

Enviro-Care became a member of the WAMGROUP of Modena Italy in February 2015. As the North American subsidiary of its SAVÉCO water and wastewater division, Enviro-Care is now rebranding to reflect its position within the WAMGROUP organization.

Aries adds new East Coast dealer

Aries Industries added MJ Friedl and Associates to its dealer network. MJ Friedl and Associates, based in Stevensville, Maryland, will offer Aries sewer inspection and rehabilitation equipment as well as water well inspection products. The company will also sell and service Aries complete grouting system trucks and electric cutters as well as sewer and water well inspection systems to customers in Delaware and Maryland.

Trench Shoring opens new facility, adds bilingual classes to TSU

Trench Shoring Co. opened its 11th location in San Leandro, California. The company has 10 other branches from San Diego to the Bay Area, plus a location in Las Vegas. The new San Leandro facility is central to the Bay Area, near Oakland Airport and close to all major freeways.

The company also announced it expanded its Trench Shoring University program with bilingual classes from its newest trainer, Fred Estrada. In the near future, Estrada will be offering Spanish-only training classes through TSU. Under the management of NAXSA-certified trainer, Greg Shreenan, TSU can be adapted for both online and remote learning in addition to in-person classes.

Super Products announces domain change

Super Products has moved its online presence to www.superproducts.com. The new domain will also affect the company email addresses, changing to the format @superproducts.com. All incoming emails will work if they are sent to the old addresses, but updating to the new domain will ensure delivery after the old addresses are phased out. Old links and bookmarks will be automatically redirected to www.superproducts.com.

Valley District to lead local Headwaters Resilience Partnership

The San Bernardino Valley Municipal Water District Board of Directors announced the establishment of a new ongoing Headwaters Resilience Partnership aimed at identifying solutions to confront the worsening challenges with water supply and natural resources in its forest headwaters. The partnership will also focus on identifying innovative ways to fund proactive investments in the long-term health of the region's national forests.

Barbco promotes Schmidt to VP, business development

Barbco promoted Thomas W. Schmidt to the newly created position of vice president, business development. He previously held leadership positions in numerous local plants including Harrison Paint, Heinemann Saw Company and Georgia Pacific.

WJTA introduces medical alert card for vacuum operators

In response to inquiries regarding vacuum suction injury potential, the WaterJet Technology Association has introduced a new medical alert card for operators of industrial and municipal vacuum equipment. The card provides information on the potential nature and treatment of the injury in the event of an incident with the vacuum hose end under suction. ♦





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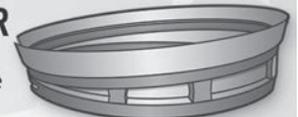
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2. Interprovincial Corrosion Control Company PetroWrap

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and can be applied on damp or minimally prepared surfaces. It consists of a cold applied system of petrolatum-based corrosion tape, primer and mastic (where contouring is necessary). **905-634-7751; www.rustrol.com**

3. Petersen Products DrainJet-Pro

The **DrainJet-Pro** drain flusher from **Petersen Products** may be used with high-pressure jetters, or the Standard DrainJet may be used with standard water pressure. They are flexible for navigating bends, and the tech can attach a cap to the DrainJet-Pro to be a pipe plug. Its ability to plug the pipe as well as flush prevents backflow of water and debris. The flusher is constructed of heavy-duty specially treated industrial fabric. Standard sizes are 1.3 to 6 inches. Custom sizes are available. **800-769-4973; www.petersenproducts.com**

CRAWLER CAMERAS

4. Aries Industries Mobile Pathfinder System

The **Mobile Pathfinder System** from **Aries Industries** is a lightweight, portable system for accurately inspecting mainlines that are 6 inches or larger. It includes a powerful transporter, camera and lightweight reel; these components are operated by an all-in-one remote control. The transporter comes in a variety of wheel sizes and is equipped with a rear-viewing camera and an adjustable electric lift to keep the camera centered in a range of pipe sizes. It features a WiperCam pan-and-tilt camera with an in-the-pipe cleaning system and field-replaceable wipers. The camera has a 300-degree viewing angle and LED lighting system to capture pipe details and ensure accurate assessments. The lightweight reel has 1,000 feet of low-friction, multiconductor cable, making the system fully portable. **800-234-7205; www.ariesindustries.com**

5.



6.



5. EnviroSight ROVVER X

The **ROVVER X** inspection crawler from **EnviroSight** lets an operator control inspections, view and record digital video, log observations, generate reports and link directly to asset management software. All these capabilities are packed into a simple, three-piece layout, with no CCU or other components to clutter the workspace. Its 12 options — plus camera lift, carriage and illumination accessories — mean it transforms in seconds to inspect any size line. The crawler is six-wheel drive with proportional steering to navigate past obstacles and has overlapping wheels to climb offsets. Powerful motors and a geared six-wheel drivetrain maximize travel range. It is built on an expandable digital backbone, with the ability to add side scanning and laser profiling, view data from onboard sensors, automate tasks with macros and measure defects on screen. Its firmware updates automatically to the latest features. **866-936-8476; www.envirosight.com**

6. TruGrit Traction wheels

TruGrit Traction polymer and carbide grit camera transporter wheel are designed to provide maximum pulling power in all pipe types and conditions. This aftermarket traction wheel is designed to fit most major CCTV transporter brands on the market today. The wheel has the ability to provide the traction needed for varying pipe types, yet still provides the flexibility needed to traverse through obstacles without damaging the pipe. Thanks to an optimal blend of flexible polymer and carbide grit, the wheels do not get dull, even in clay and concrete pipe. **407-900-1091; www.trugrittraction.com**

7.



8.



MAINLINE TV CAMERA SYSTEMS

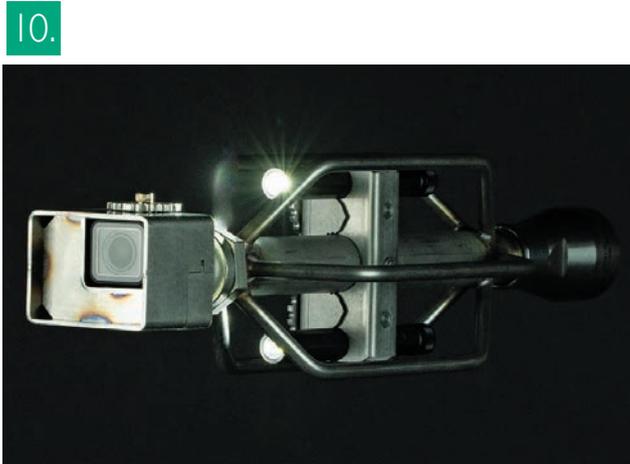
7. CPI Products PoleCat

Sometimes push inspection cameras are hard to control when not in a pipe and trying to look into a ground-level space. It can be dangerous to kneel down and stick your head in these places, and in some areas, that violates safety rules. When you need to look into a manhole or confined space, inspectors often resort to improvising ways to control their inspection camera. The **PoleCat** from **CPI Products** is designed and made for this application. Simply strap an inspection camera to it with the preinstalled Velcro, loosen the lock nut, turn to the angle desired, attach any standard broomstick threaded extension pole and it's ready. It fits any push inspection camera and installs in minutes. **413-443-0925; www.cplasprouducts.com**

8. Electric Eel eCAM Pro 2

The **eCAM Pro 2** pipeline inspection camera system from **Electric Eel** includes a built-in battery cradle and will accept a Milwaukee Tool M18 or equivalent battery (battery not included). This allows for operation in remote locations or anywhere electricity is not available. It has a stainless steel-housed, 1.68-inch, self-leveling color camera with sapphire lens; 20-LED light ring with an impact-resistant polycarbonate light ring cover; and high-resolution charge-coupled element. A flexible camera spring navigates 3-inch P-traps. The unit comes standard with 200 feet of braided fiberglass premium 1/2-inch-diameter pushrod (with a capacity of 400 feet available on the reel), industry-standard 512 Hz sonde, 10.4-inch daylight-readable monitor with click-touch controls and one-touch recording directly to a USB flash drive, voice-over recording, an 8X zoom function, audio/video out jacks, 8-inch wheels for easy maneuverability and a secure-locking reel brake. **800-833-1212; www.electriceel.com**

(continued)



9. EPL Solutions Gvision

The **Gvision** camera system from **EPL Solutions** offers a rugged, compact solution for inspecting pipelines 3 to 12 inches in diameter. Available with 200 to 400 feet of pushrod, the reel has a stiff yet flexible fiberglass cable that is optimized for farther pushes through turns and bends. The color camera is self-leveling and includes a powerful, convenient, always-on 512 Hz transmitter for quick and precise area determination. The antiglare LCD monitor delivers a clear, crisp picture even in direct sunlight. To record video inspections, connect a USB storage device or Apple mobile device directly into the USB port. The DVR outputs HD-quality videos, which can be stored and shared from a mobile device. **714-453-9760; www.epls-usa.com**

10. General Purpose Sewer Cam

The **General Purpose Sewer Cam** is made to be dropped. The heart of the jet-powered system is its durable and simple-to-use GoPro Hero 7 Black camera. Not only is GoPro camera technology affordable, but its durability guarantee has made it the go-to camera to document extreme sports, where it takes a physical beating. The skid unit is compatible with 6- to 18-inch pipe and is constructed from Type 304 stainless steel. Custom skids are available for larger pipe. GP Sewer Cam has teamed up with Arthur Products, so every GP Sewer Cam comes with a custom-drilled (to buyer's jetting specs)

nozzle. The unit is 4 1/2 pounds, has three screws and one moving part, and is completely made in the U.S. **310-774-9468; www.gpsewercam.com**

11. MyTana Inspect & Locate Package

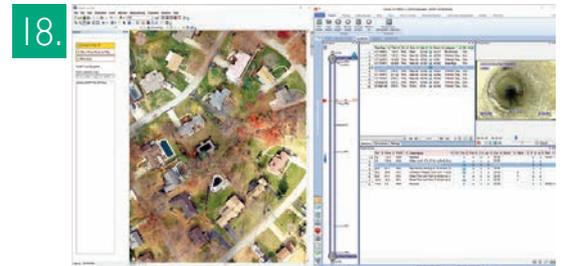
Designed for full capability in lines large and small, **MyTana's Inspect & Locate Package** comes with a single control unit that connects to both a large-diameter camera for inspecting up to 8-inch lines on 200 feet of pushrod, and a small-diameter camera for inspecting 1 1/2- to 3-inch lines on 100 feet of pushrod. The control unit's daylight-readable monitor delivers high-clarity footage, and all-digital recording lets the user save that footage to either the 64 GB internal drive or a removable USB flash drive. Operators can also stream video wirelessly to multiple devices. The multifrequency locator works on all pipes including cast iron. Continual depth readout and directional indicators allow for intuitive operation with audio feedback. With the included transmitter, the user can trace a signal on drainlines or find buried utilities. **800-328-8170; www.mytana.com**

12. Pearpoint P540c

The **Pearpoint P540c** offers an intuitive graphical user interface with built-in user manual, a full-size QWERTY keyboard and a choice of six different languages at launch. Context-sensitive, ATM-style buttons on both sides of the display provide access to the easy-to-use menus while an additional seven buttons offer direct control of the most-used functions. It has the capability to use the newly designed command module with any reel system. This will provide contractors the flexibility of having multiple rods for different uses while only needing one command module. **800-688-8094; www.pearpoint.com**

13. RapidView IBAK North America MicroLite Pushrod System

The **MicroLite Pushrod System** from **RapidView IBAK North America** is a lightweight, small-diameter push system with durable steel-frame construction that delivers a high-quality image for all contractors and plumbers. Fitted with 100 feet of push cable, powerful LED lighting and an auto-uprighting camera, it is designed to inspect pipelines 2 to 4 inches in diameter. The entire system is powered by rechargeable batteries and is equipped with the positionable MicroLite Command Console, which includes a 10-inch touch-screen monitor, full Windows operating system, two USB connections and recording software. **800-656-4225; www.rapidview.com**



14. Ratech Electronics Plumber's Helper Jr.

The **Plumber's Helper Jr.** pipe inspection system from **Ratech Electronics** is based on a small-scale reel and comes with 100 feet of mini Gel Rod cable, a removable compact command module with 7.1-inch LCD, a built-in battery and an SD recorder for recording digital images and video. This mini pipe inspection system is available with a full-spectrum, 1.375-inch, self-leveling color camera, a standard color camera or any of the company's three micro camera heads — 5/8-, 3/4- or 1-inch diameter. **905-660-7072; www.ratech-electronics.com**

15. Vivax-Metrotech vCam-6 HD

The **vCam-6 HD** inspection system from **Vivax-Metrotech** includes features such as text writer, voice-over, locatable sonde and traceable pushrod as standard equipment. The standard reel is available with 200, 300 or 400 feet of pushrod and the choice of a 1.3- or 1.8-inch self-leveling HD camera. The system includes a daylight-viewable control module with a 9.7-inch HD LCD monitor, distance counter and internal rechargeable batteries with five-plus hours of battery life. Video recording and JPG-format pictures can be saved to the internal 1 TB hard drive. The control module has built-in Wi-Fi to stream live video and snapshots to the vCam Live View Mobile app. **800-446-3392; www.vivax-metrotech.com**

RECORDING/ARCHIVING/DATA DEVICE

16. RIDGID SeekTech ST-305R Transmitter

The **RIDGID SeekTech ST-305R Transmitter** is a compact yet powerful multifrequency transmitter. It can be used with any SeekTech or NaviTrack receiver to find buried conductors such as pipes, cables and wires. With its battery shoe, it can be powered by a lithium-ion, 18-volt rechargeable battery or six alkaline or NiMH C-cell batteries. It delivers up to 5 watts of power and transmits two frequencies simultaneously to allow optimal frequency selection. Audio feedback also confirms a good circuit before beginning a trace. **800-474-3443; www.ridgid.com**

SOFTWARE

17. CUES GraniteNet WebInspect

GraniteNet WebInspect is a browser-based inspection app designed to perform inspections and collect information about municipal assets, such as manholes, including MACP v7 Level 1, hydrants, lift stations, grease traps,

light poles and signage. It can be used to help perform and track tasks such as valve turning, smoke tests, brush cutting and snow plowing. Collect GPS points, water quality samples, flow tests, assess sewer backups — virtually any type of asset assessment or task can be quickly deployed for your organization, with or without existing GIS maps. All that's needed is an internet connection and virtually any device with a browser, such as a mobile phone or a tablet. There's no software to install on any user devices. **800-327-7791; www.cuesinc.com**

18. WinCan VX

WinCan VX makes it easy to visualize inspection data with a variety of mapping tools including WinCan Maps and integrations with Esri's ArcGIS. For quick geospatial referencing, WinCan Map allows the tech to view inspection data overlaid on GIS map assets to easily understand systemwide condition and identify maintenance needs. This is a great way for operators in the field to gain insight into the layout of pipes at a job site. For a more in-depth approach, integrations with Esri's ArcGIS Pro offer analysis tools including heat mapping of pipe criticality. Export WinCan data directly to ArcGIS, eliminating manual conversions and data re-entry. Likewise, simply drag to select assets in ArcGIS for instant transfer of section data to WinCan. It also compares GIS data with inspection data and highlights any disparities. **877-626-8386; www.wincan.com** ♦

Leak detection investment leads to significant decrease in non-revenue water loss

Problem:

Privately owned and over 200 years old, the Belle Vernon Municipal Authority serves a population of just over 6,000 residents. It encompasses the Pennsylvania regions of Belle Vernon, North Belle Vernon and parts of Rostraver and Washington townships. The water plant was decommissioned, and Belle Vernon Municipal Authority began purchasing water from another municipal authority in September of 2016. The Belle Vernon Municipal Authority services infrastructure comprised of steel, cast iron and plastic with portions dating over 100 years old. Given the aging infrastructure, it is not surprising it was faced with non-revenue water loss as high as 50% with flows as high as 0.700 mgd. The bills from the authority it was purchasing its water from were as high as \$65,000 per month.



Solution:

With the help of 540 Technologies, Belle Vernon Municipal Authority decided to address its non-revenue water loss through leak detection. It invested in two key leak detection devices from **Fluid Conservation Systems**. Superintendent Guy Kruppa and leak detection lead foreman Rich Saxberg started with 55 Permalog+ units to cover the majority of the service area. When paired with the FCS Patroller device, these easily deployable, acoustic logger units continuously monitor leakage and transmit an “alarm” when a potential leak is located. In February of 2020, they added to their inventory by also purchasing the TriCorr Touch Pro, an easy-to-use, robust correlator designed to provide the best performance in traditionally difficult leak detection conditions such as plastic or large-diameter pipes.

RESULT:

By utilizing these devices, Belle Vernon has decreased its non-revenue water loss to 13%, which saved it over \$36,000 by the end of 2020’s fourth quarter. Its daily flows are now averaging .326 to .360 mgd and its water bills are now averaging \$22,000 a month. Following its AWWA water audit, the authority is focused on apparent losses, replacing old meters and mapping the assets in the water system through GIS. 513-831-9335; www.fluidconservation.com.

Inspection camera pinpoints blockage at commercial property

Problem:

When repeated backups occurred at a commercial property in Oregon, the professionals at Clean Water Works were called upon to identify what was causing the recurring blockage.

Solution:

A technician from Clean Water Works used a **Wi-Fi Inspection Camera** from **Hathorn**. The company accessed the pipe through a cleanout and was able to live stream the inspection for the client to see. Since the image was so clear, the company discovered that what was thought to be a broken pipe was actually an old crustation.



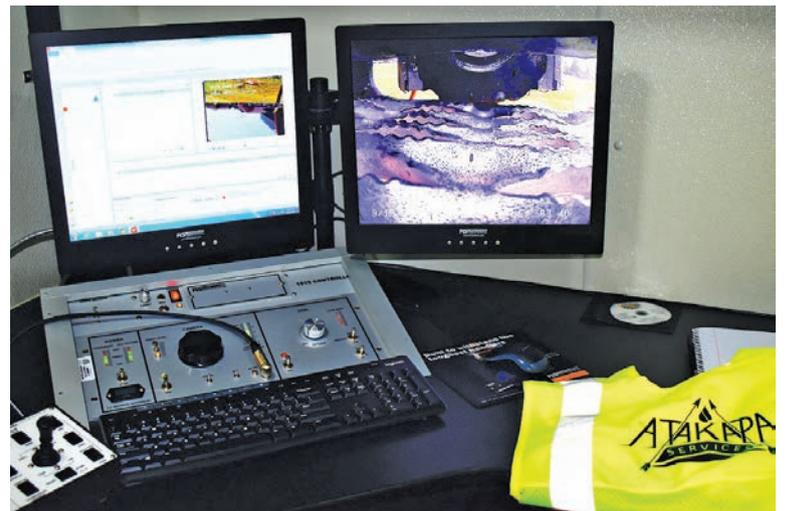
RESULT:

The company was able to identify the issue in the line with the plumbing camera and proposed a solution to use a special pipe-grinding tool from Picote to clean the pipe. Hathorn was the ideal pipe inspection tool for the job and provided HD quality before-and-after pictures to ensure the job was complete to the owner’s satisfaction. 905-604-7040; www.hathorncorp.com.

City develops comprehensive inspection and cleaning program

Problem:

Ask Chris LaCroix what his crews have found in the storm and sanitary sewers of the City of Lake Charles, Louisiana, and you’ll get a wide range of answers. “We’ve found a little bit of everything down there,” says LaCroix, chief engineer for Atakapa Services. “It’s amazing what makes its way into a city’s sewage and storm drain system.”



CASE STUDIES

PIPELINE INSPECTION, SURVEYING AND MAPPING

Solution:

In late 2017, the City of Lake Charles contracted with Atakapa Services to develop a comprehensive drainage inspection and cleaning program. According to LaCroix, Atakapa crews are often approached by curious homeowners and asked what they are doing. After all, most haven't seen a Camel cleaning truck, CCTV inspection van or the **Subsite Electronics** cameras and transporters Atakapa crews are running through the pipes. "We're well equipped," says Hayden Case, project engineer for Atakapa. "In addition to the cleaning truck, we've got custom-outfitted CCTV vans by Subsite, each with three different camera/transporter systems onboard. We have a TranStar for 6- to 30-inch pipe, a Storm Drain Tractor for 24-inch pipes and larger, and a Lateral Launch System that gives us the ability to launch into a lateral from the mainline with a single unit — that's a great feature."

RESULT:

Since the city has initiated this program, over 250,000 feet of storm and sanitary sewer system pipe has been cleaned and inspected. Nic Hunter, mayor of Lake Charles, is excited about the program results thus far. "This systematic, targeted approach to assessing and improving drainage citywide was implemented shortly after I became mayor," he says. "I'm very impressed with the results thus far. We have cleaned numerous lines and identified issues that have required engineered solutions. Our city is draining better now because of this program." **800-846-2713; www.subsite.com.** ♦

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Product Spotlight

Jetter line designed for simplicity and ergonomics

By *Tim Dobbins*

Modern technology makes it easy to get caught up in the bells and whistles when shopping for a trailer jetter instead of focusing on the practicality of a product and how it can benefit your utility.

“It is easy to over-engineer a product,” says Caroline Brown, marketing manager for Vac-Con. “We were conscious of our end-users in the research and development of the VJ series.” The end product of that mindset is a line of sewer jetters designed for simplicity and ergonomics.

According to Vac-Con, the modernized VJ line of jetting trailers gives operators a product that is low-profile, powerful and portable, with enough options and features to cover a range of jobs and applications.

Among the VJ series line is the VJ750, a tandem-axle trailer jetter featuring a 750-gallon water capacity. Standard offerings for the VJ750 include a Tier 4 diesel engine, a 500-foot hydraulically driven hose reel, a weather-proof electronic control panel and a cold-weather recirculation and air purge system. Customers have various water pumps to choose from for desired flows, including 18 gpm at 4,000 psi, 30 gpm at 3,000 psi or 40 gpm at 2,000 psi. Customers can also choose a gas-powered engine if desired and can add features like a wireless remote, anti-freeze tank and multiple lighting variations.



“The whole VJ series is designed specifically for sewer and storm water-line jetting and cleaning,” Brown says. “It is ideal for removing blockages, cutting through debris and cleaning out sewer, storm and catch basins. They are perfect as an addition to a larger fleet, or they can stand on their own for smaller jobs.”

Engineering a product that is simple to use and effective in the field came from Vac-Con listening to and understanding the needs of its existing customers. “Our dealers and end-users were a key resource for developing a product that exceeded customer expectations and could get the job done,” Brown says. “From there, we evolved features that were tested and true and integrated them into the streamlined, low-profile offering of the new VJ jetters.”

Vac-Con says it wanted a product that could compete in the market and serve as a direct reflection of the Vac-Con name and its 35 years of sewer cleaning expertise. Since releasing the VJ750, Brown says there has been a lot of buzz in the industry about the product and the feedback Vac-Con has received from operators using it has been extremely positive. **888-920-2945; www.vac-con.com**

WinCan Sewermatics AI-powered service

WinCan’s Sewermatics is a new collection of AI-powered services that help inspection teams work more efficiently, gain new insights and make data-driven decisions. It offers four core services: AI-powered defect coding, data conversion, platform integration and cloud hosting. Sewermatics’ AI-supported defect coding lets municipalities hand off inspection footage for observation entry and quality assurance. In addition to alleviating workload, it minimizes user error and extracts value from legacy data. The Sewermatics team can also help transfer data from any software or database into WinCan standardized to NASSCO’s PACP 7 or any other inspection standard. **877-626-8386;**

www.wincan.com



Pyramex heavy-duty utility vest

Pyramex’s heavy-duty utility vest (RVZT44B Series) is built tough to withstand day-in and day-out use. The back features a D-ring pass-through slot for ease of use with a fall protection harness. It also has a reach-through pocket with a zipper closure on the back for access to construction plans, a clipboard or tablet. The vest has a solid black front bottom that includes an inner microfiber towel to make cleaning eye-wear a breeze. It also has metal front grommets, accessory loops, mic tabs and plenty of pockets including two large expandable waist pockets with hook-and-loop closure. The hi-vis lightweight vest is made from 120 gsm polyester mesh and has 2-inch silver reflective material with 1/2-inch contrasting trim, and it meets ANSI/ISEA 107-2015 Type R Class 2 standards. **800-736-8673; www.pyramexsafety.com**



SPECIAL REPORT

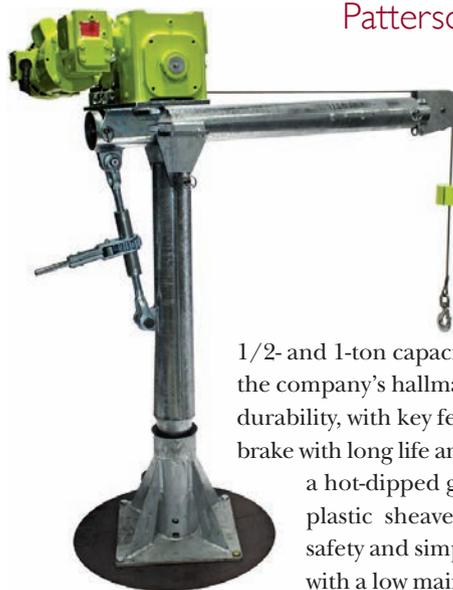
Superior 5-E Electric Smoker finds faults, odors, leaks and inflow



When testing laterals, building plumbing or pumping or inspecting septic tanks, smoke testing is a quick and effective way to find plumbing faults that lead to odors, leaks and inflow. Superior Signal Company's Superior 5-E Electric Smoker easily connects to any clean-out, port or vent to smoke test the entire system in just a few minutes. The Superior 5-E Electric Smoker gently pushes smoke throughout a system to find cracks or leaks and quickly identify problems. Made in the U.S., the durable Superior 5-E Electric Smoker is competitively priced and comes complete with 8 feet of industrial grade hose. Used with Superior Smoke Candles, this cost-effective solution is ideal for hard-to-find odors, leaks and other faults in commercial, residential and municipal facilities. **800-945-8378; www.superiorsignal.com/MS5.**

SPECIAL REPORT

Patterson Manufacturing davit cranes



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

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

Grundfos high-efficiency IE5 motors and pumps

Grundfos' E-pumps with integrated frequency converter are designed for total control, customer convenience and environmental sustainability. Grundfos' MGE E-motors exceed the IE5 requirements by more than 2% with a motor efficiency of 95.7% at 380 V/2,600 rpm. The built-in application control in MGE E-Motors reduces not only the energy consumption of the pump, but also optimizes the performance and efficiency of the entire system.



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ADS StableSense mount for the ECHO monitor

StableSense is a secure, stabilized mounting method for ADS Environmental's ECHO level monitor, ensuring consistent acquisition of high-quality

ultrasonic data and no false alarms. StableSense also provides options for an expansion rod or wall mount that can easily be accessed just below the manhole cover. Stabilized mounting eliminates ultrasonic sensor movement and provides consistent, high-quality data acquisition. ECHO is sold as a complete system including the unit, all mounting options, PRISM software and communications. **800-633-7246; www.adsenv.com** ♦



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WORTH NOTING

PEOPLE/AWARDS

Andrea Klopfenstein was promoted from city stormwater engineer to public works deputy director-city engineer for the City of Peoria (Illinois).

Design Workshop, an international firm, announced that **Erin Ringsred** (based in Texas) has been promoted to the position of associate. Her work focuses, in part, on building resiliency in communities through innovative stormwater management strategies.

Kirsten Jensen was hired as the engineer for the Town of Milton (Vermont) Public Works team. She has been instrumental in coordinating the town's stormwater improvements.

Emmalee Cherington was hired as stormwater utility coordinator for the Town of St. Albans (Vermont).

The National Association of Flood and Stormwater Management Agencies presented **Charlotte-Mecklenburg Storm Water Services** (North Carolina) with first-place honors in its Excellence in Communications Awards program and Stormwater Management Green Infrastructure Awards program.

Osceola County received a \$4.69 million grant from the Florida Department of Economic Opportunity's Rebuild Florida Mitigation General Infrastructure Program for stormwater infrastructure improvements in Buenaventura Lakes.

The **New England Stormwater Collaborative** presented Stormy Award honors to:

- **Narragansett Bay Commission** for its Macomber Stadium green stormwater infrastructure project
- **Town of Colchester** (Vermont) for its financial rebates for residential stormwater improvements
- **Town of Sudbury** (Massachusetts) for using mini weather stations to improve winter operations, reduce chloride impacts and meet stormwater permit requirements ♦

CALENDAR

Aug. 29-Sept. 1

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

Sept. 13-15

StormCon Milwaukee and WaterPro Conference, Wisconsin Center, Milwaukee, Wisconsin (parallel events being held on same days and location). Visit stormcon.com or waterproconference.org.

Oct. 6-8

American Society of Civil Engineers 2021 Convention, virtual event. Visit asce.org.

Oct. 12-14

American Public Works Association Public Works Expo (PWX) Plus, held virtually for those unable to attend in person the PWX event on Aug. 29-Sept. 1. Visit apwa.net.

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