

MUNICIPAL

SEWER
&

WATER™

FOR SANITARY, STORM AND WATER SYSTEM MAINTENANCE PROFESSIONALS

August 2019

www.mswmag.com

BETTER MOUSETRAPS: POWERED
SLIPLINING RENOVATES FAILING LINE

PAGE 18

HUMAN SIDE: UTILITY OFFERS CAREER
OPPORTUNITIES TO STUDENTS

PAGE 22

TECH TALK: ICE PIGGING CAN SOLVE
FORCE-MAIN CLEANING ISSUES

PAGE 28

ADAPTING TO CHANGE

Award-winning Florida
utility taking steps
to modernize and improve
a system that's already
earning honors

PAGE 24

Jason Atkinson
Operations Supervisor
Bal Harbour, Florida

PRODUCT FOCUS:

PIPELINE INSPECTION, SURVEYING AND MAPPING



UNSTOPPABLE

M O M E N T U M



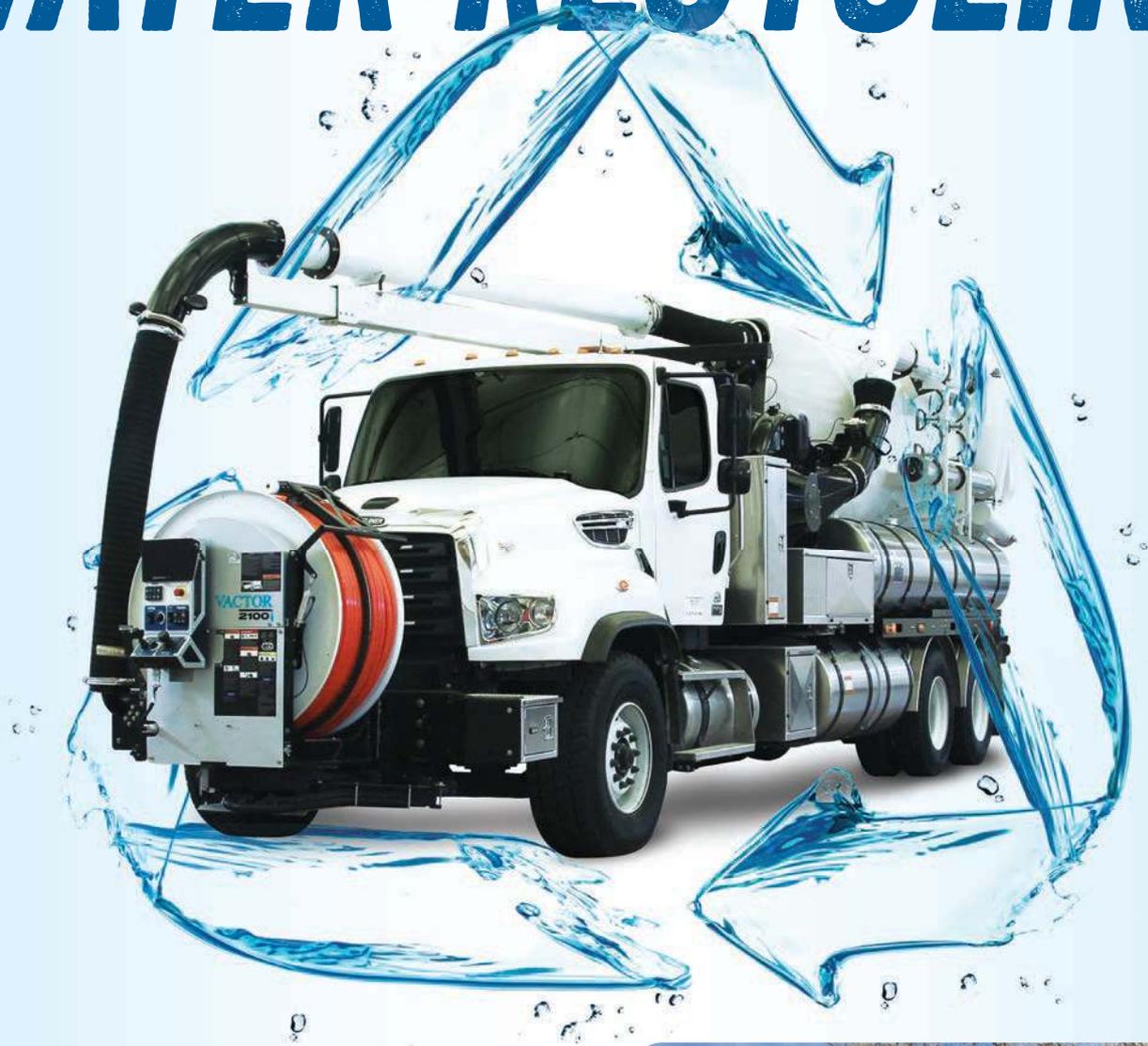
With power, versatility and agility, the ROVVER X sewer crawler has won a reputation that's larger than life. Behind it stands the industry's broadest network of service and support centers—each committed to delivering unrivaled uptime and low cost-of-ownership.

It all adds up to ROVVER X being the world's most trusted crawler. Schedule a demo today and see why.

Envirosight

(866) 936-8476 • www.envirosight.com

VACTOR® 2100i WATER RECYCLING



Great for the environment – and for the bottom line

- Saves thousands of gallons of water in every shift
- Increases productivity by up to **100%**
- Eliminates the need for crews to break down and refill



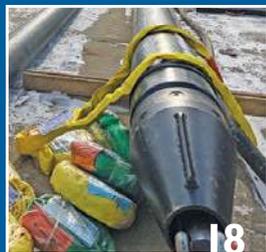
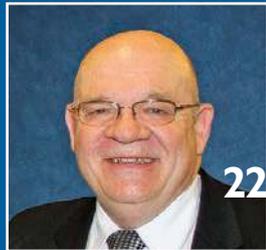
©2019 Vactor Manufacturing

SEE WHY WE ARE THE SUPERIOR COMBINATION SEWER CLEANER
VACTOR.COM/WATERRECYCLER

VACTOR
2100i

INSIDE:

PIPELINE INSPECTION, SURVEYING AND MAPPING



ON THE COVER: Jason Atkinson, water and sewer operations supervisor for Bal Harbour (Florida) Park and Public Spaces, helped spearhead a review of infrastructure replacement practices that led to a new focus on directional boring, pipe bursting and CIPP lining. (Photography by Samuel Navarro)



COMING IN SEPTEMBER 2019

WEFTEC Pre-Show Issue, Annual Buyer's Guide

- ◆ TECH TALK: Tips for buying a new combo truck
- ◆ HUMAN SIDE: Respectful disagreement trumps silence
- ◆ STAYING SAFE: Promote safety through system knowledge

FEATURES

12 SEWER: Squeezing Water From Waste

With few discharge options, desert district sets a new standard for reuse.

By Giles Lambertson

24 SEWER/WATER: Adapting to Change

Award-winning Florida utility taking steps to modernize and improve a system that's already earning honors.

By Erik Gunn

COLUMNS

8 FROM THE EDITOR: Keep Rolling

Taking care of little issues today can prevent major problems down the road.

By Luke Laggis

10 @mswmag.com

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

18 BETTER MOUSETRAPS: Pulling Together

Savvy trenchless team uses powered sliplining technique to renovate failing sanitary line over icy river.

By Joe Bradfield

22 HUMAN SIDE: Refilling the Pipeline

Connecticut water utility program immerses high school students in career opportunities.

By Ken Wysocky

28 TECH TALK: Cool Your Pipes

Ice pigging offers an efficient, cost-effective and powerful approach to cleaning force mains.

By Paul Treloar

32 NASSCO CORNER: D.C. Wants to Hear From You

Let your legislators know we need water and wastewater infrastructure funding.

By Sheila Joy

34 PRODUCT FOCUS: Pipeline Inspection, Surveying and Mapping

By Craig Mandli

40 PRODUCT NEWS

Product Spotlight: A new entry in the lateral cutting game.

By Craig Mandli

42 INDUSTRY NEWS

44 WORTH NOTING

People/Awards; Learning Opportunities; Calendar

AUGUST 2019

MUNICIPAL
SEWER
&
WATER™

**PERMA-LINER™
INDUSTRIES, LLC.**

PATENT PENDING

WHY DIG THIS?

**Did you
know?**

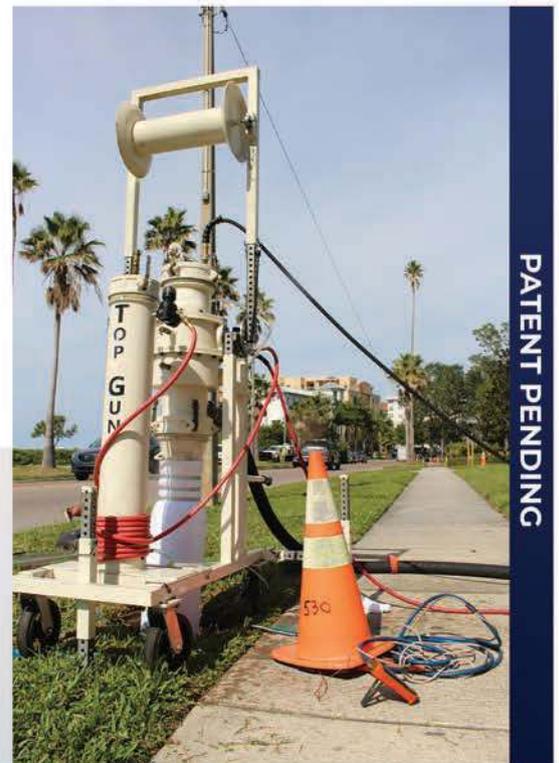
**The family of Insignia™ Hydrophilic Gasket
Seals is compliant with ASTM F2561, F3240
and F2599 for all CIPP lining**

STATE-OF-THE-ART, COMPACT LINING EQUIPMENT

- ✓ 6" TO 120" DIAMETER CIPP LINERS
- ✓ TRAINING PROVIDED BY EXPERIENCED CERTIFIED TECHNICIANS
- ✓ TECHNICAL SUPPORT
- ✓ MARKET COMPETITIVE PRICING
- ✓ DELIVERY SERVICE AVAILABLE
- ✓ REFRIGERATION TRUCKS AVAILABLE

FEATURING Manhole Edge Protector

High-density ABS plastic
Color fade built into the plastic
Temp -40 to 180F with no deflection
Safety orange identifying the site
Protects camera and jetter lines
Eliminate Top Edge Roller and top side tiger tail
Thermal protection
Helps prevent against cuts and bruises to personnel



PATENT PENDING

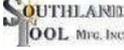
**ZERO DIG CIPP TRENCHLESS TECHNOLOGY
WWW.PERMA-LINER.COM**

**TO LEARN MORE CALL
1-866-336-2568**

COMPANY **PAGE**

	American Highway Products, Ltd.42
	American Shoring, Inc.23
	Aries Industries33
	Cam Spray43
	Composite Access Products (CAP)...17
	CONEXPO-CON/AGG46
	ConShield Technologies.....41
	Core & Main.....15
	CUES29
	Envirosight LLC2
	GapVax, Inc.47
	InfoSense, Inc.8
	Perma-Liner Industries, LLC5

COMPANY **PAGE**

	Petersen Products Co. 44
	RapidView IBAK North America 11
	RELINER/Duran Inc.27
	SmartCover Systems.....21
	Southland Tool Mfg. Inc. 9
	T&T Tools, Inc. 6
	Vactor Manufacturing 3
	Vac-Con, Inc.31, 48
	Vivax-Metrotech Corp.20
	WinCan, LLC..... 7
	CLASSIFIEDS 43
	MARKETPLACE 45



**FOR SANITARY, STORM AND WATER
SYSTEM MAINTENANCE PROFESSIONALS**

Published monthly by:



1720 Maple Lake Dam Rd., PO Box 220,
Three Lakes, WI 54562



www.mswmag.com

© Copyright 2019, COLE Publishing Inc.

No part may be reproduced without permission of publisher.

In U.S. or Canada call toll free 800-257-7222

Elsewhere call 715-546-3346

Email: info@mswmag.com / Fax: 715-546-3786

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

SUBSCRIPTIONS: A one year (12 issue) subscription to *Municipal Sewer & Water*™ in the United States, Canada and Mexico is free to qualified subscribers. A qualified subscriber is any individual or company in the United States, Canada and Mexico that maintains, manages, designs or installs municipal or commercial sewer, water and storm infrastructures. To qualify, visit www.mswmag.com or call 800-257-7222.

Non-qualified subscriptions are available at a cost of \$60 per year in the United States and Canada/Mexico. Subscriptions to all other foreign countries cost \$150 per year. To subscribe, visit www.mswmag.com or send company name, mailing address, phone number and check or money order (U.S. funds payable to COLE Publishing Inc.) to the address above. MasterCard, VISA, American Express and Discover are also accepted. Include credit card information with your order.

Our subscriber list is occasionally made available to carefully selected companies whose products or services may be of interest to you. Your privacy is important to us. If you prefer not to be a part of these lists, please contact Nicole at nicole.labeau@colepublishing.com.

CLASSIFIED ADVERTISING: Submit classified ads online at www.mswmag.com/classifieds. Minimum rate of \$25 for 20 words; \$1 per each additional word. All classified advertising must be paid in advance. DEADLINE: Classified ads must be received by the first of the month for insertion in the next month's edition. PHONE-IN ADS ARE NOT ACCEPTED. Fax to 715-546-3786 only if charging to MasterCard, VISA, Discover or AmEx. Include all credit card information and your phone number (with area code). Mail with check payable to COLE Publishing Inc. to the address above. CLASSIFIED ADVERTISING APPEARS NATIONWIDE AND ON THE INTERNET. Not responsible for errors beyond first insertion.

DISPLAY ADVERTISING: Contact Jim Koshuta or Kayla Bisnette at 800-994-7990. Publisher reserves the right to reject advertising which in its opinion is misleading, unfair or incompatible with the character of the publication.



Jim Koshuta Kayla Bisnette

EDITORIAL CORRESPONDENCE: Send to Editor; *Municipal Sewer & Water*, P.O. Box 220, Three Lakes, WI, 54562 or email editor@mswmag.com.

REPRINTS AND BACK ISSUES: Visit www.mswmag.com for options and pricing. To order back issues, call Nicole at 800-257-7222 (715-546-3346) or email nicole.labeau@colepublishing.com. To order reprints, call Jeff Lane at 800-257-7222 (715-546-3346) or email jeff.lane@colepublishing.com.

CIRCULATION: 2018 average circulation was 37,385 copies per month (U.S. and international distribution).



www.facebook.com/MSWmag
www.twitter.com/MSWmagazine
www.youtube.com/MunicipalSewerWater
www.linkedin.com/company/municipal-sewer-&-water-magazine



T&T Tools, Inc.

800.521.6893



Hooks...

- * Heat treated for long life
- * Manhole Cover Hooks
- * Septic Tank Lid Hooks
- * Many styles available
- * "T" handles for two hands or compact "D" handles

Probes...

- * Insulated, Standard and Specialty
- * Metal shafts: 3/8 round or hex
- * Replaceable hardened tips
- * Optional "slide" available to make your probe a mini-slide hammer

Call for a FREE Catalog

Email: sales@mightyprobe.com Fax: 800.521.3260



Water & Wastewater Equipment,
Treatment & Transport Show
www.wwettshow.com

Education Day: Mon., Feb. 17, 2020
Exhibits: Tues.-Thurs., Feb. 18 - 20, 2020
Indiana Convention Center, Indianapolis, Ind.



Online Insight, Trusted Support

Share your sewer asset data on the cloud effortlessly and securely with WinCan Web. From the moment you sign on, our support specialists guide you toward better insight, better decisions and better teamwork. It's just one more way we never stop innovating.

www.wincan.com/web



KEEP ROLLING

Taking care of little issues today can prevent major problems down the road



FROM THE EDITOR

Luke Laggis

Rehabilitation can be a tedious process, and even though you know you're putting in the work, it can take a long time to start seeing any significant results.

I like bikes. I mountain bike a lot, when I'm healthy. A couple summers ago I was riding four days a week. At 43 I was faster than I'd ever been and arguably in the best shape of my life. But there were issues below the surface. They certainly weren't slowing me down when I was riding two-plus hours at a great pace, but mechanical issues don't typically resolve themselves. They only grow worse.

I felt stronger and stronger that summer and fall. But eventually as the days get shorter, and then the clock gets set back an hour, there's not enough light for after-work rides. And as fall progresses I spend more and

more of my weekends hunting. So I hadn't been on a ride in about a month and a half when I finally climbed onto the bike I keep in a training stand in my basement for a little warm-up ride before a workout in mid-December.

It was just 15 minutes of easy spinning, but as soon as I got off the bike I knew something was wrong. My lower back stiffened immediately. It got worse that night but improved some during the week. That weekend I decided to take my fat bike out for a ride in the snow and made it only five minutes before intense, shooting pain forced me to walk back to the trailhead. I spent the next two months in constant pain, unable to do much of anything but go to work and come home and lay on the living room floor.

In the year and a half since, I've seen several doctors, a couple physical therapists, a chiropractor and massage therapist. I've been dry-needled, had CT-guided trigger point injections and two epidurals. Yes, epidurals. None of it helped.

For the past couple months I've been seeing a new doctor and physical therapist. As it turns out, none of the people I'd seen before properly diagnosed my issues. Biking, hockey and some past injuries had created several imbalances in my body. Over time, those things built up as one thing pulled on another. Riding constantly kept things just loose enough to function, but with a little layoff, everything tightened up to the point where my body couldn't even handle a little warm-up ride.

That's a lot of information about my health, but there's a real parallel to your water and wastewater systems. A little problem here or there isn't such a big deal when the rest of your system is functioning at maximum capacity. But when a major sewer interceptor collapses, or your primary distribution main ruptures, it can cripple your whole system.

The problems that lead to ruptures and collapses build over time, just like the issues that wrecked my back. It pays to be proactive, look for small problems and address them before they grow and turn into major problems that require emergency repair.

It's easy to push things off. It's less expensive and saves time and resources in the present, but that's a short-term view, and it'll cost you and your customers in the long run.

Like my back, rehabilitating your systems is a slow process that often doesn't yield tangible results as quickly as you'd like. But it's always a better course of action than waiting for something to go wrong and hoping for the best.

Enjoy this month's issue. ♦

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

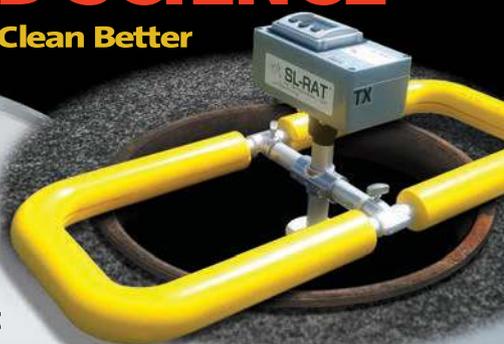
OUR TECHNOLOGY IS BASED ON SOUND SCIENCE

Inspect More, Clean Better

Active Acoustics screen for blockage with no flow contact

MILLIONS OF FEET INSPECTED

- Save time, water, AND money
- Screen 2+ miles per day
- EPA validated
- Highly portable and easy to operate



 **SL-RAT**

 **InfoSense, Inc**
Innovating Acoustic Inspection Technology

877-747-3245

sales@infosense.com • www.infosense.com

SOUTHLAND TOOL MFG. INC.

Building Innovative Tools for Municipalities



**SOLUTIONS TO SEWER
CLEANING THROUGH:**

CONCEPT
DESIGN
PRODUCTION



Manhole Tools • Debris Baskets • Vac-Traps • Root Saws • Calcium Cutters • Sewer Rods
Handy Clams • Nozzle Extensions • Deep Vac Tube Holder • Grabbers Claws and Hooks
Diamond Tap Cutters • Fiberglass Poles • Hydraulic Cutters • Top Manhole Rollers • Sewer Spoons
Continuous Rod • Carbide Saws • Vacuum Coupling • Reducers • Hydro Excavation



1430 N. Hundley St
Anaheim, CA 92806

ph: 714.632.8198
fax: 714.632.8228

YouTube
www.SouthlandTool.com

@mswmag.com

Visit the site daily for new, exclusive content. Read our blogs, find resources and get the most out of *Municipal Sewer & Water* magazine.

OVERHEARD ONLINE

“These students are creating solutions to improve communities across the world, and the Stockholm Junior Water Prize is a testament to the importance of investing in the future of our industry.”

—New Jersey Student to Represent U.S. in Stockholm Junior Water Prize Competition mswmag.com/featured

CITY CELEBRATION

A Billion Gallons Saved

In 2009, Madison (Wisconsin) Water Utility began offering customers \$100 rebates to replace old, water-wasting toilets with Environmental Protection Agency-rated high-efficiency models. Since then, thousands of Madison home and business owners have taken advantage of the Toilet Rebate Program, replacing more than 17,000 old toilets and saving an estimated 1,088,847,183 gallons of water. mswmag.com/featured



LARGE METRO UTILITY

Huge Capital Improvements

Chicago is a big city with a big water system. The city's Department of Water Management is capable of producing 2.1 billion gallons of potable water per day, serving 490,000 accounts and 5.3 million customers through over 4,000 miles of water mains. Drawing water from Lake Michigan, its two water treatment plants are among the largest in the world. And the upcoming capital improvement plans and programs for this vast system are just as big. mswmag.com/featured



Emails & Alerts

Visit MSWmag.com and sign up for newsletters and alerts. You'll get exclusive content delivered right to your inbox, and you'll stay in the loop on topics important to you.



Join the Discussion

Find us at:
facebook.com/MSWmag
twitter.com/MSWmagazine

REROUTING A WATER MAIN

Tunneling Beneath the Mississippi

The City of Minneapolis Public Works Department has an ambitious new plan for a large-diameter water main that is currently suspended from the 10th Avenue Bridge spanning the Mississippi River. They're going to reroute it under the river. The \$24 million project might sound pretty run-of-the-mill until you understand how they're doing it.

mswmag.com/featured



A HISTORY OF INNOVATION SINCE 1945.



We've seen it all...

We know that finding a new inspection camera system can seem overwhelming. Your reputation and money is on the line. That's why, when you choose RapidView IBAK, you can be confident that we will be with you for the long haul. IBAK invented sewer cameras in 1957 and we continue a history of innovation today. Our customers expect the best after-sales service in the industry, and we work every day to make sure they get it! We are committed to not only selling you the best equipment money can buy, but making sure that it stays in the field, earning you an increased return on your investment!



Push | High Def | Mainline | Lateral Launch | 3D Mapping | PANO 4K Scanner | Rehabilitation | Software
(800)-656-4225 | www.rapidview.com | Past Proven. Future Ready.

IBAK Inspection Equipment Manufacturing is Certified ISO 9001:2015 and ISO14001: 2015.

SQUEEZING WATER FROM WASTE

With few discharge options, desert district sets a new standard for reuse

By Giles Lambertson

Fountain Hills Sanitary District deserves all the credit for reusing “every drop” of wastewater it collects from its 15,000 sewer connections. A 100% reuse standard is admirable and praiseworthy, but the Arizona district had little choice in the matter.

The community of Fountain Hills is a greater Phoenix area desert community blessed with hilly topography — mountains and canyons — and picturesque flora. Combined with 12 months of dependable sunshine, the desert setting attracted 20th-century snowbirds and other denizens of the north. They flocked here as modern-day Yavapai, the Native American “people of the sun” who originally occupied the area.

As the population increased, however, so did

pressure for efficient and sanitary disposal of treated wastewater. This is where things got interesting because the sanitary district was hemmed in, both laterally and vertically, by jurisdictional and physical barriers.

“We are different from other communities,” explains Dana Trompke, district manager. “Most have a discharge permit and can dispose of treated effluent into a river. We don’t have that option. We tried to get a discharge permit approved earlier, but the effort failed because we have two Native American communities downstream from us, hydrologically and geologically. Our treated water would run out of our jurisdictional boundaries and affect the tribal lands.”

With the Fort McDowell Yavapai Nation and

Salt River Pima-Maricopa Indian Community thus situated to bar simple discharge of treated water into the Verde River, a natural alternative was to introduce treated water into the underlying aquifer via recharging ponds. This entails creating earthen bowls to pond treated water, which then slowly percolates downward through underlying soil into water-bearing strata far underground.

Turns out, Fountain Hills doesn’t have that option either. “That works when the underlying soil is sandy or some other permeable material,” Trompke says. “We are underlined with rock, so we can’t recharge. It just won’t perc. If I had acres suitable for recharge, we would be doing that.”

The sanitary district’s solution to this disposal challenge evolved through the years as the com-

“We are different from other communities. Most have a discharge permit and can dispose of treated effluent into a river. We don’t have that option.”

Dana Trompke

munity’s population increased. Its 100% recycling effort essentially began in 1974 when it started disposing of treated effluent into a man-made lake. The 33-acre body of water is the signature feature of the community because 12 hours a day a fountain in its center periodically shoots water up to 560 feet into the air — a display once ranked as the highest fountain in the world. The sanitary district kept the 100-million-gallon lake full by piping effluent directly to it from the district’s wastewater treatment plant, a plant that today can convert up to 2.9 mgd of wastewater into top-rated Class A+ recycled water.

Unfortunately, this disposal solution proved inadequate as the community grew and the volume of recycled water exceeded the lake’s capacity. At that point, the sanitary district sent surplus effluent from the treatment plant to vacant areas of Fountain Hills to spray-irrigate natural desert grasses. That disposal method also proved short-term as the green spaces eventually became devel-

oped housing sites, which meant they no longer were acceptable disposal grounds. Today, besides running into the lake, treated water flows to irrigation systems for community parkland and public and private golf courses.

Managing supply

Customers of the Fountain Hills Sanitary District are 98% residential. While this is a comfortable constituency in terms of collection, it doesn’t offer the district many potential commercial customers for its recycled water. There are zero industrial washing or rinsing operations that need extra water, for example. “We just don’t have any industry that would benefit from it. There’s not large enough consumption to be worth the effort,” Trompke says.

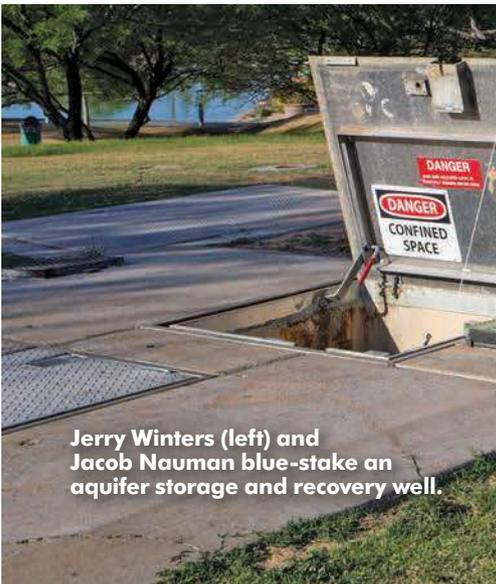
The rest of the effluent-handling story is about seasons. Caring for putting greens in desert summers requires three times more irrigation water than in winter. However, the sanitary district’s



A Fountain Hills Sanitary District crew excavates a 16-inch effluent pipe in Fountain Park for maintenance and repair. (Photography by Mark Henle)



Jerry Winters (left) and Jacob Nauman blue-stake an aquifer storage and recovery well.



“The district went way above and beyond any required standard when it introduced the water in 2001, and the plant has since been upgraded. We are pretty confident we have done what we can to protect the aquifer and extend the life of the wells.”

Dana Trompke

treatment plant doesn't produce three times more effluent in the summer.

“Our reclaimed water demand far exceeds the supply in the summer and supply far exceeds demand in the winter,” Trompke says. A way to balance the fluctuation in supply and demand had to be found. The solution came in 2001 when the district drilled and equipped five aquifer storage and recovery wells to harbor oversupply underground until it is needed, at which point it is pulled to the surface again.

“When we are making more treated water than the golf courses and parks are using, it's recharged into the wells. We currently store up to 300 million gallons of highly-treated recycled water in the winters for use in summer months. Our wells

have been successfully operating for 19 years, which may be the longest any aquifer storage and recovery wells have been operating in Arizona.”

The put-and-take storage system includes monitoring wells on the downward gradient of the subterranean storage area to make sure the treated water doesn't migrate away and into adjacent water systems.

Above and beyond

Dumping water underground for future use might sound simpler than it is. “There is a lot of maintenance,” Trompke says, beginning with the system's “advanced water treatment facility.”

When the wells were sunk, the district upgraded its treatment regime to include micro-filtration, thereby ensuring the treated water wouldn't negatively impact the aquifer. The facility has since added a Tonka Water brand Ultra Filtration system using DOW 0.03-micron membranes and a WEDECO - a Xylem Brand - ultraviolet light disinfection system.

“The district went way above and beyond any required standard when it introduced the water in 2001, and the plant has since been upgraded. We are pretty confident we have done what we can to protect the aquifer and extend the life of the wells,” Trompke says.

Jeff Games (left) and Jerry Winters replace an air bottle at an aquifer storage and recovery well.

Making it work

All this industrious — if not industrial — use of effluent is the feather in the cap of the sanitary district, and it begins with 211 miles of collection lines, most of which consists of 8-inch-diameter pipe with some 24- and 30-inch collectors in the mix. Distribution lines running from the plant total 15 miles and range up to 18 inches in diameter.

The hilly terrain is a double-edged sword for the district. “We have beautiful views and beautiful building lots, but it can make it difficult to pump the sewage,” Trompke says. Consequently, the district has 19 lift stations — the oldest installed 30 years ago and the newest about a decade ago. Most of the system pipe was put in the ground less than 40 years ago.

“Relative to other parts of the country, we don't have an old system,” Trompke says. Consequently, pipe replacement at this point is occurring routinely, but not urgently. A half mile a year of cured-in-place relining of collection lines is budgeted for the next three years, the work going to contractors. “Our staff is really good at sewer line repairs and we have done

(continued)



PROFILE:

Fountain Hills (Arizona) Sanitary District

CUSTOMERS:

15,000 connections (98% residential),
24,000 residents

SERVICE AREA:

12,000 acres

WASTEWATER VOLUME:

1.6 mgd summer, 2.1 mgd in winter

TREATMENT CAPACITY:

2.9 mgd

INFRASTRUCTURE:

211 miles of sewer line, 15 miles of
reclaimed water distribution pipe

EMPLOYEES:

43 full time

WEBSITE:

www.az-fhsd.gov



The Leading Distributor of Water, Sewer & Storm Drain Products & Services



**WE'RE ALL
ABOUT THE**
Neighborhood

When you need dependable service in the middle of the night, the eye of the storm or the center of town, you need the waterworks experts at Core & Main.

Our Vision

To foster a world where communities thrive because our people and products provide safe, sustainable infrastructure for generations to come.

Local Knowledge | Local Experience | Local Service, Nationwide®

coreandmain.com

“We have a fabulous maintenance team. They treat the equipment like it’s their own.”

Dana Trompke

manhole rehabilitation, but it is more economical to sub out the CIPP work.”

While the district doesn’t have its own relining equipment, the yard does include a Vac•Con combination jet/vac truck, dump and pumper trucks, a camera truck for RapidView IBAK North

America robotic camera inspection work, a couple of backhoes, forklifts and so on. “We are big enough to have one of everything.”

Trompke is more effusive in talking about the district’s 43 employees, most of whom are maintaining lines, plant and equipment. “We have a fabulous maintenance team,” she says. “They treat the equipment like it’s their own. I don’t know how many times I’ve heard them say, ‘I treat it like it’s my own.’ They have been phenomenal. I give them lots of credit.” This sense of ownership may be behind the stability of the staff, which counts numerous members who have been on the job for 25 years.

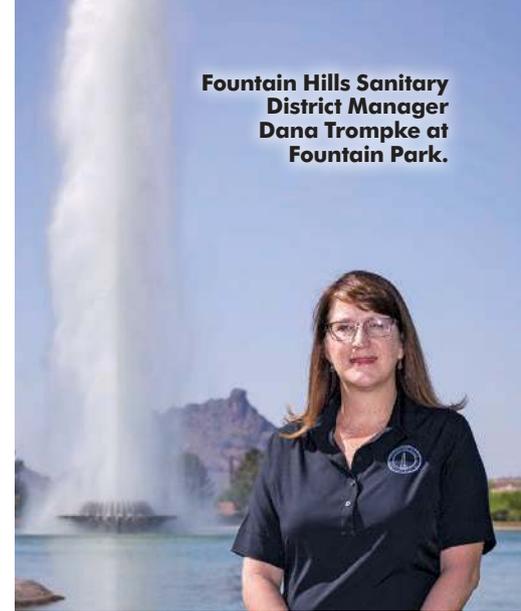
Capitalizing

The sanitary district’s sewer rates are just as stable as its staff. Fountain Hills charges customers \$28 a month for sewer service. An in-house review of area rates 18 months ago showed Fountain Hills rates to be “right in line” with neighboring systems. One reason the district is debt-free and not raising rates despite upgrades and build-outs is because it has two streams of revenue — customer fees and tax income. As a stand-alone district, it has taxing authority, the income from which it generally uses for capital projects.

The current large capital project is replacement of the pump and pump controls at two of its five aquifer storage and recovery wells. The units in the park adjacent to the lake are in subsurface metal vaults. Leakage from irrigation is rusting and corroding the vaults. The new systems will be relocated to ground level in dual-purpose buildings that will also contain public restrooms. The twin projects should be complete by year’s end.

Most recently, the district replaced inefficient, 20-year-old, 40 hp centrifuges at its main treatment plant — installing 3 hp and 5 hp HUBER Technology disc thickeners and screw presses in the solids digesting and dewatering stage of treatment. The upgrade is expected to reap a 15% savings in electricity costs.

Fountain Hills Sanitary District Manager Dana Trompke at Fountain Park.



GETTING THE WORD OUT

Sewer treatment and distribution of effluent is not what most people think of upon arising each day. All the necessary technical, administrative and maintenance labor in sewer work generally is out of sight and out of mind. This can be a problem for any agency needing community support.

Fountain Hills (Arizona) Sanitary District is no exception. “I think Fountain Hills, like a lot of communities, operated for the last 10 or 20 years with the philosophy of doing the work without being heard, seen or smelled,” says Dana Trompke, district manager. She has been in the manager’s chair for two years now and brought to the district a different philosophy.

“One of my initiatives is to improve our community education and communications so that our customers do understand that extensive efforts are being made to protect this area’s water, and that we play a vital role in it.” To that end, Trompke tasked Cathy Eberhardt, assistant administrative service manager, to also serve as communication and education officer.

Trompke says the outreach will build on the district’s “already excellent reputation in the community. Anytime we have a sewer backup in a home or something, we go above and beyond to correct the situation. We get a lot of appreciation expressed for our attentiveness and quick response.”

Still, the manager isn’t sure the average customer appreciates how efficiently and thoroughly the district is reusing treated wastewater to irrigate public grounds and top off Fountain Lake: hence a revamped district website and more systematic communication from the central office.

The linking of the district to its customers will continue as the population of the 12,000-acre district continues to grow, as it steadily is. The desert community experienced peak growth in the 1990s, but new developments are springing up again. The development is ratcheting up demand on the district because the new units are being populated more densely — which translates into more wastewater.

“What we are seeing is that developers are changing the product they deliver,” Trompke says. “Everything coming right now is high-density, multiple-family construction. The area was originally planned for mostly single-family homes, so that will be a challenge for us. We are doing the master planning right now and identifying what we need to do to prepare for more dense development. Not all of our infrastructure is built out yet, but we’re making sure we will be set up to take care of the district’s needs.”

FEATURED PRODUCTS FROM:

DowDuPont Inc.
800-447-4369
www.dowwaterandprocess.com

RapidView IBAK North America
800-656-4225
www.rapidview.com
(See ad page 11)

Vac•Con, Inc.
904-284-4200
www.vac-con.com
(See ads pages 31 & 48)

HUBER Technology, Inc.
704-949-1010
www.huberforum.net

Tonka Water, a U.S. Water Brand
763-559-2837
www.tonkawater.com

WEDECO - a Xylem Brand
855-995-4261
www.xylem.com/treatment

CAP Composite Covers and Frames

- ✓ 100% Watertight in 20 inches of water— 0.00 GPM
- ✓ H-25 Traffic Rated – Load Rated above 100,000 lbs
- ✓ DOT Approved – “Within Roadway”
- ✓ Resists Corrosion, UV and Theft
- ✓ Odor Free
- ✓ Half the Weight of Iron...but not too light.
- ✓ Pigmented & Stone-like Appearances Available
- ✓ RFID encapsulated for Asset Tracking and GIS compatibility – *Patent Pending*
- ✓ Detectable With Standard Metal Detectors
- ✓ Designed, Molded, & Assembled in Texas
- ✓ 100% American Owned – The Only USA Compression-Molded Composite Cover



*Remember, if it doesn't say
"Made In USA," It is Chinese*

**Don't Settle for Those Chinese Knock-Offs...
Just CAP That!®**



Composite Access Products (CAP) • 5216 N 26th St, McAllen, TX 78572 • www.justcapthat.com • 844-344-CAP1 (2271)

Fountain Hills Sanitary District doesn't actually recycle every drop, as it slogonizes, of course. No human activity of this scale is that efficient. But it does reuse virtually all of the sewer water it collects, which is no small feat. Some 15% of treated

water is utilized in-house — in influent screening spray water and backwashing filters and the like. Trompke says the other 85% of the untreated wastewater “that comes in the door, we actually deliver back out to customers” as treated effluent.

That's the stuff irrigating grasses and plants in parks and on golf courses and spouting gaily from the famous fountain to give the desert community part of its vibe. ♦

DESERT CHALLENGES AND REWARDS

Living and working in a desert community offers challenges and satisfactions to wastewater agencies like Fountain Hills Sanitary District. The southern Arizona district has turned a liability — a growing volume of wastewater with minimal options for disposal — into an asset benefiting the community and the district.

“I think every area has its unique challenges,” says Dana Trompke, district manager. “Too little water, too much water, wildfires — every region has its challenges. The fact we don't have a river discharge permit has pushed us to a level of sophistication and advancement that other facilities didn't have to reach. Out of necessity, we went far beyond where we would have otherwise. It was challenging and also exciting and rewarding.”

The challenges aren't going away in a hot, dry region where comfort isn't achieved without effort. The area receives about 10 inches of rain a year “and it comes on two different days,” Trompke says only half face-

tiously about the area's occasional inundation in monsoon or residual hurricane rainstorms. At the other extreme, the state is a half-dozen years into a drought.

Naturally, such conditions tend to concentrate thoughts on weather — and on climate change. “We do talk about climate change,” the manager says. “In our planning, we weigh what our long-term supply of water is going to be and how we will be able to manage it. It will require planning, resiliency and redundancy. It will be challenging, but we are up for it.”

While the district recycles most of its wastewater for irrigation, ultra-refinement for potable purposes isn't an option. “For Fountain Hills Sanitary District, our legal authority is only collecting, treating and disposing of sewer water. In Arizona, it currently is illegal to convert sewer water to drinking water. The state is reviewing that policy to determine under what conditions it would allow that. But as of this moment, we don't have the legal authority to do it.”

PULLING TOGETHER

Savvy trenchless team uses powered sliplining technique to renovate failing sanitary line over icy river

By Joe Bradfield

Sometimes a failing sewer line presents a simple fix. Sometimes not so much.

The city of Aurora, Illinois, needed to restore sanitary flow through a badly compromised 10-inch vitrified clay sewer line under the northwest side of East Benton Street. The 180-foot section ran from a brick manhole at the intersection of Benton Street and Stolp Avenue to its exit into a sewer along the bank of the Fox River. At a depth of 16 feet, the sewer passed through a bridge abutment and beneath a massive covered concrete pavilion near a water feature between the river and the manhole. Major

communication and electrical utility ducts over the sewer line further complicated a traditional open-cut replacement.

“The cost of excavation would have been astronomical,” says Jason Bauer, Aurora’s assistant city engineer and assistant

director of Public Works. The city decided to investigate trenchless solutions for rehabilitating the line.

Sections of the pipe had been identified as on the brink of collapse during an annual contracted inspection. The city was fearful that pipe bursting would be detrimental to the 3-foot-thick concrete bridge abutment and doubted that CIP lining was even feasible. They shared the video with several CIPP installers in July 2018 to determine if it might be worth an attempt, but the consensus was that it was unlikely to work in this situation.

Alternatives

One of the CIPP installers recommended Bauer consult with Nate Hrabosky of HammerHead Trenchless, a company specializing in trenchless pipe installation, repair and replacement techniques. The company provides consultation in each application covered by its product lines, which span a broad range of noninvasive techniques.

Hrabosky has over 20 years’ experience in trenchless pipe solutions, including as a field technician and application consultant. “If it could have been lined, I would have lined it in a second,” Hrabosky says. But when he saw inside the pipe, he agreed with the CIPP installers. “It looked like squashed eggshells in there — far too risky to try lining it.”

Conventional pipe bursting was also too risky. Since the time the century-old sewer had been installed, other service lines had been laid along the same route, including conduits to a communication hub. Ducts and conduits crowded the pipe path. Some ran parallel to the existing pipe. Others crossed over and under the sewer at odd angles all along the route. The potential for damage to the bridge abutment was another major concern.

Another option

Hrabosky offered an alternate trenchless solution he referred to as powered sliplining. The method utilizes pipe bursting tools,

“If it could have been lined, I would have lined it in a second. It looked like squashed eggshells in there — far too risky to try lining it.”

Nate Hrabosky



Ice flows on the Fox River presented challenges for a powered sliplining project in Aurora, Illinois, so the Benchmark Construction team suspended the new pipe from the Benton Street bridge and used a strap-and-pulley system to control the pipe’s entry angle.

BETTER MOUSETRAPS

PRODUCT:
CIPP Sliplining

MANUFACTURER:
HammerHead Trenchless
800-331-6653
www.hammerheadtrenchless.com

APPLICATION:
Fixing a failing sewer line.

BENEFITS:
Trenchless repair avoiding major communication and electrical utility ducts

USER:
City of Aurora, IL

but the object is not to burst the pipe, only to slip a similar-diameter replacement pipe through it. Most sliplined pipe can be pulled in place using just a winch alone, but in this case, the pipe was too badly compromised to trust a winch to go the distance. A pneumatic hammer ensured it would.

A constant tension winch is still used in a powered sliplining operation to counter “swim.” Swim is the tendency of a percussive hammer and its attached pipe or casing to rock back and forth rather than advance when ground conditions do not provide sufficient friction to maintain forward progress. The pipe moves forward with each forward strike of the hammer but then backs up during its backstroke. Steady tension provided by the cable winch counters the force of the backstroke, maximizing operational efficiency and, in this case, ensuring continual advancement of the pipe through a cavity filled with loose debris.

Slipping a pipe of similar diameter through the existing pipe path eliminated the risk of interference with shared utilities and allowed the new pipe to be connected without excessive reconstruction of the brick manholes.

As for capacity, an 8-inch-diameter pipe was more than adequate for this run. Although the legacy pipe had originally been a combination storm and wastewater system, stormwater and sanitary services for this line had been separated years ago. The new pipe would be used exclusively as a sanitary line.

Choosing a contractor

The project was publicly bid, but due to its delicate requirements, only two qualified contractors sent in bids. The contract went to Benchmark Construction, headquartered in Bartlett.

“We’ve been using the pipe bursting method for over 10 years and are well acquainted with powered sliplining, though we don’t normally do it from a bridge,” says Benchmark Construction’s George Coleman.

In addition to Benchmark Construction’s own personnel, the construction team included Hrabosky from HammerHead and Drew Yandel from MG Underground, a sister company to Benchmark Construction. Yandel provided on-site support and fused the 8-inch HDPE.

Initial discussions of how to perform the operation included placement of a raft in the river to support the pipe. Ice flows on the river at that time of year ruled out the use of watercraft, so the team went with Benchmark Construction’s suggestion to suspend the pipe from the bridge. It was just a matter of waiting for the right time.

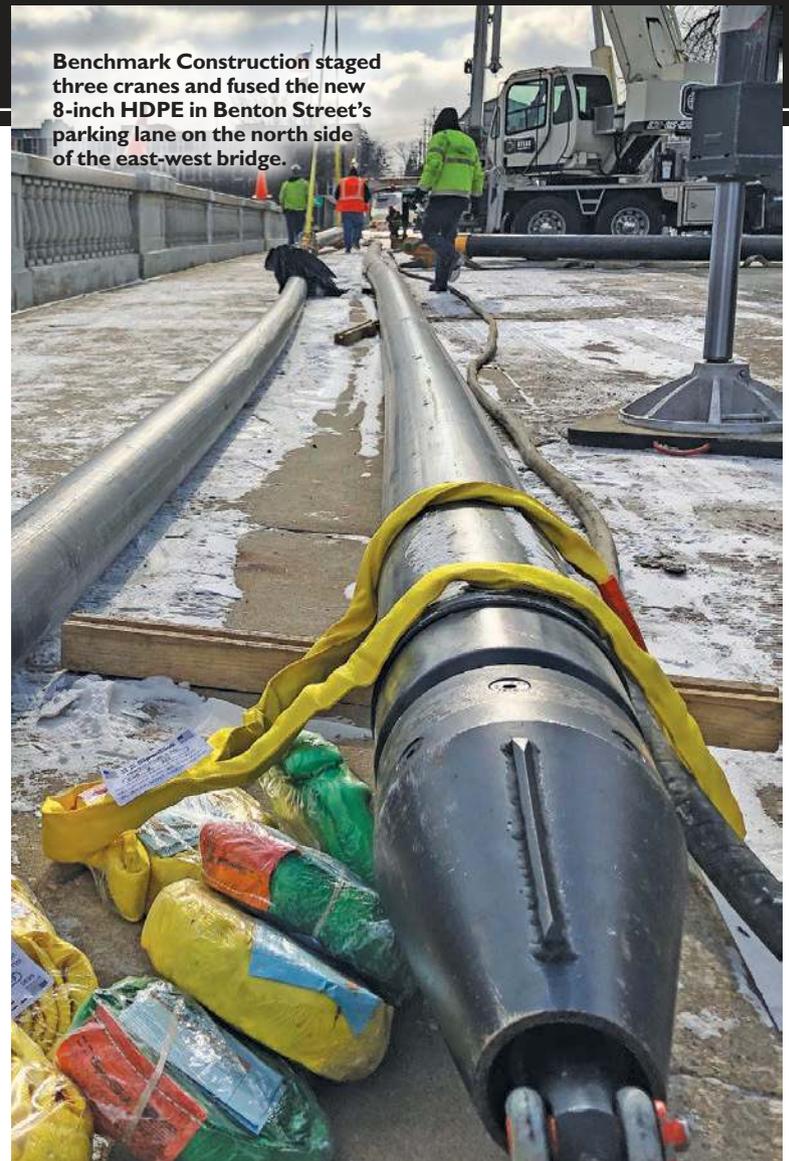
Waiting for weather

Plans were to begin in November, but all parties agreed the operation should be postponed until the weather gave them a work window free from snow, preferring to avoid the additional complication if they could. Yet operations couldn’t be delayed beyond the cold of winter, as melting snow and ice would raise river levels. The manhole could be accessed by the cable winch’s self-deploying boom at the street any time of year, but the entry point for the pipe beneath the bridge had to be accessed before the spring thaw brought higher water.

By February 2019, Benchmark Construction had staged three cranes rented from Atlas Crane out of Aurora and fused the 8-inch HDPE in Benton Street’s parking lane on the north side of the east-west bridge. The city had removed ornamental streetlights to give the cranes unobstructed access over the side

“We’ve been using the pipe bursting method for over 10 years and are well acquainted with powered sliplining, though we don’t normally do it from a bridge.”

George Coleman



Benchmark Construction staged three cranes and fused the new 8-inch HDPE in Benton Street’s parking lane on the north side of the east-west bridge.

of the bridge. Benchmark Construction owns its own pipe bursting equipment, but for this job, it rented a HammerHead 8-inch, pneumatic burst system, including the HammerHead HG1200AT cable winch.

No excavation was required for this project. The manhole in the riverbank was modified to permit entry of the pipe prior to the arrival of the cranes. The pipe’s invert lies above river level, and the manhole protrudes out of the water by approximately 4 feet. Therefore, only slight modifications to the manhole were required to accommodate insertion of the pipe.

The weather finally gave the crew the opening they had been waiting for during the first week of March. It took just a day to fuse the pipe and prepare the machinery and equipment to begin the next morning.

Powering up

The crew placed the hammer inside the leading end of the new pipe and bolted on the burst head, with its air hose running through it to the compressor on the bridge. As the operation was about to begin, however, the crew had trouble aligning the 8-inch HDPE with the host pipe. The angle was too great from the side of the bridge where it was suspended to the entry point. Quickly brainstorming a suitable solution, the team widened the entry point in the side of the manhole and used a strap-and-pulley system to adjust and maintain the angle of entry for the new pipe. They encountered no further complications.



Sliplining began by pulling gently with a HammerHead HG1200AT cable winch. When the pipe's progress stopped, the crew powered up the bursting tool. From that point, the winch's job was solely to supply just enough tension to keep the pipe from backing up.

Sliplining began by pulling gently with the winch. When the pipe's progress stopped, the crew powered up the bursting tool with air at 110 psi from a 185 cfm compressor. Once the hammer went to work, the winch's job was solely to supply just enough tension to keep the pipe from backing up.

"Tension was so low that I'm not sure the pressure even registered on the gauge," Coleman says.

When the pipe reached the manhole, the crew reversed the hammer, backing it out and removing it from the newly installed pipe. They cut

the burst head from the front of the pipe and extracted it from the manhole. Finally, they grouted in the new HDPE pipe, giving it a sealed finish in both manholes.

Successful outcome

Coleman says it was a smooth operation. "The insertion itself took about 90 minutes to do. Setting up took about 2 1/2 hours and tearing down a little less. I'd say less than six hours of on-site activity that day, total."

The short time frame meant that anyone working a day shift downtown missed the chance to see a powered sliplining operation — unless, of course, they made a lunchtime run across the bridge, which was open to traffic throughout the operation.

"The only other option was excavation, which would have cost the city at least five times as much when you take the cost of restoring the pavilion and water feature into account," Bauer says. "This work was done without any pavement removal and with minimal impact to traffic or downtown activities." ♦

About the Author

Joe Bradfield is senior writer for Ellenbecker Communications, an international communications firm specializing in the construction, drilling and mining industries.

VIVAX

METROTECH

Locate and Inspect with Speed, Accuracy and Confidence

vCam-6 HD Inspection System

- 9.7" Anti-glare HD Display
- 1TB Hard drive
- 1080 HD Cameras
- 512Hz Sonde
- Locatable Pushrod

vLoc3-Cam Sonde and Utility Locator

- Directional arrow guidance
- Locates sondes and pushrod
- Graphical user interface
- Optional Bluetooth connectivity
- 4.3" Full-color display

vCamMX-2 Mini Inspection System

- 512Hz Sonde
- Locatable Pushrod
- High Resolution Cameras
- Direct USB Recording

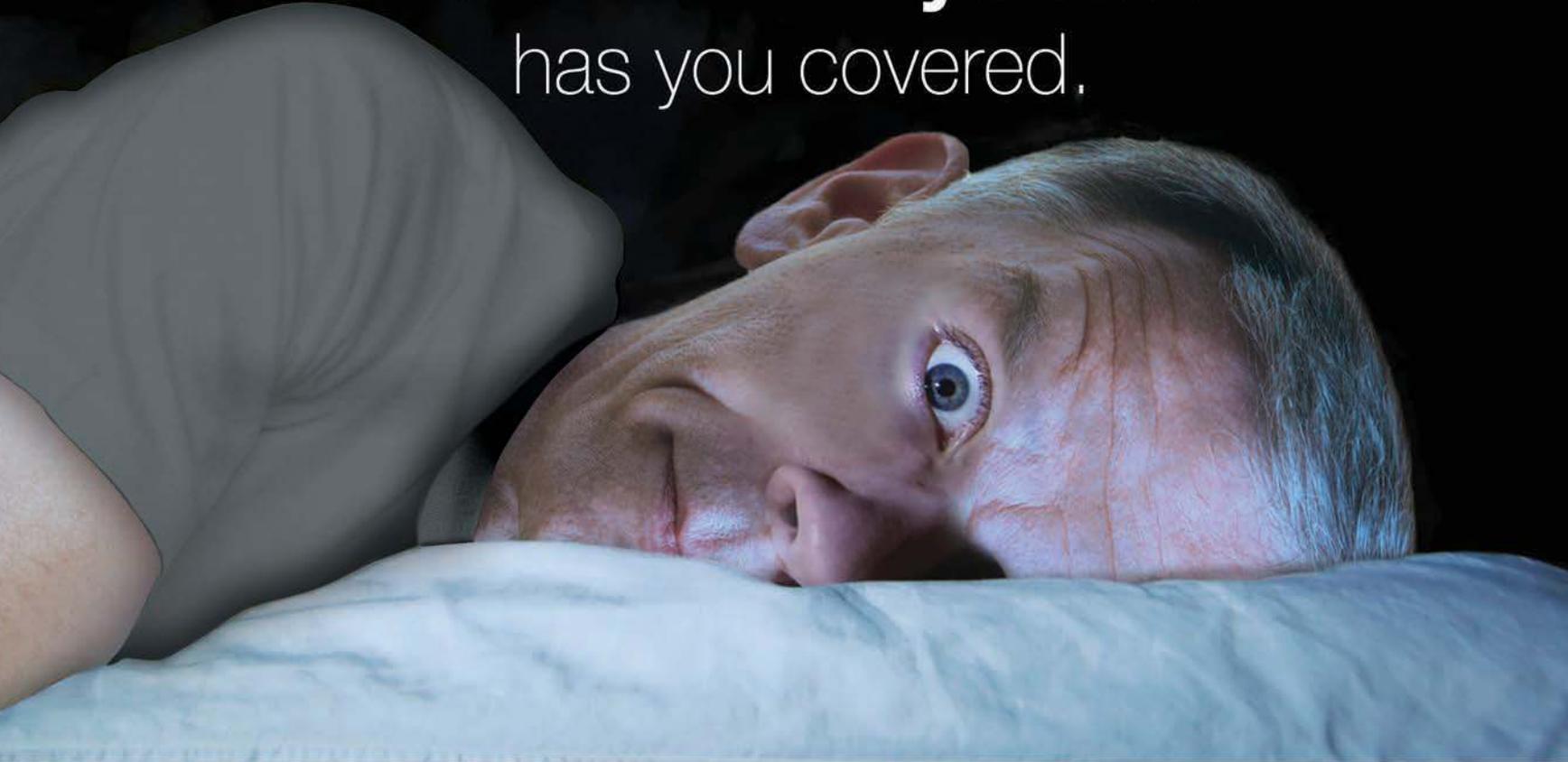
vCam Live View APP

- Add text to the vCam screen
- Add text to recording video or pictures
- Switch between HD and SD video stream
- Edit files in the phones/tablets operating system
- Share via iOS sharing features (email, text message, DropBox, OneDrive)

Call us for your no obligation on-site demonstration!

Vivax-Metrotech Corporation
 3251 Olcott Street, Santa Clara, CA 95054, USA
 Toll Free: 800-446-3392 Phone: +1-408-734-1400 Email: sales@vxmt.com www.vivax-metrotech.com

Something keeping you up at night?
Sleep well.
SmartCover® Systems™
has you covered.



Do you worry about what could go wrong with your collection system overnight?

Now you can rest easy.
SmartCover Systems has you covered.

SmartCover provides you with collection system visibility by offering real-time condition assessment, alerting you to a potential issue before it occurs.

No more spills or mess.

We deliver more than data. We deliver peace of mind!



smartcoversystems.com/msw • sales@smartcoversystems.com • 760-291-1980

REFILLING THE PIPELINE

Connecticut water utility program immerses high school students in career opportunities

By Ken Wysocky

The Portland Water Department in Portland, Connecticut, is no different than many utilities nationwide that are contending with the so-called silver tsunami — a rising tidal wave of retirements exacerbated by a shrinking labor pool of qualified replacements.

But the department differs from many others in that it's actively taking steps to educate high school students about the many career opportunities available in the water- and sewer-management industries. In fact, 67 high school seniors have taken a specially developed course called Water and People, says Dave Kuzminski, technology coordinator for the town of Portland.

"It gives them a good idea of the career options out there," he says. "There are a lot of careers that fall under the water-system umbrella, such as engineering, construction, human resources, accounting, meter reading, water-sampling technicians and chemists."

The ultimate goal of the course is to produce certified operators for small water systems. So far, it's working, albeit on a small scale. Of those 67 students who've taken the course during the seven years it's been offered, 27 went on to earn certification as state small water-system operators. And three of those students now work at local water utilities, he says, including Kyle Armstrong, 24, who is now a Class II water operator for the Water Pollution Control Authority in East Hampton.

"The Water and People course really opened my eyes to different career opportunities in the water industry," says Armstrong, who has a bachelor's degree in computer information technology. He was hired by the WCPA in 2015, two years after he graduated from high school. "It gave us a lot of background in multiple areas, including the lab portion of water treatment, as well as the safety side, plus non-water-related jobs, like customer service."

Would Armstrong have known about, much less been interested in, a water-utility job without the program? "Absolutely not," he says. "I had no idea jobs like that were even out there. You don't hear about water treatment careers as much as other jobs."

In addition, taking the class and passing the certification exam motivated him to keep traveling further down the utility career path. "Getting the license gave me the drive to want to do something with it," he explains.

"I didn't just want a piece of paper that I'd never put to good use."

Armstrong's job at the authority's centers on testing water once a day at three plants to be sure



Dave Kuzminski

the chlorine residual and pH levels are within the proper safety range. He finds the part-time job (he also works full-time as an information technology specialist) both challenging and fulfilling. Better yet, the hourly wage actually is higher than what he earns at his full-time job, he adds.

"I like it because I'm doing something important — providing clean water to hundreds of households and businesses that we serve," he says.

From scratch

Planning for the Water and People program started in 2006 as municipal officials realized they faced a crisis. At the time, more than 40% of the state's 1,020 certified distribution and treatment operators were eligible to retire within five years. And that figure now is closer to 45%, Kuzminski says.

"It's a systemic problem in the industry, and I felt we had to address this — make sure students are aware of careers in the water industry," explains Kuzminski, former chairman of the Connecticut Section of the American Water Works Association. "We felt we had to start at the grassroots level and let students know there are great-paying careers available. And they're secure positions, too. You can't outsource these jobs to India. You need local boots on the ground."

Kuzminski had already built a solid connection over the years with Portland High School while serving as the co-coordinator of an educational partnership program that gave students a chance to work on real-life town projects. So after school officials approved of the concept, he met with Bill Sullivan, head of the Drinking Water Section of the state Department of Public Health (which certifies water system operators), to develop a high school level curriculum.

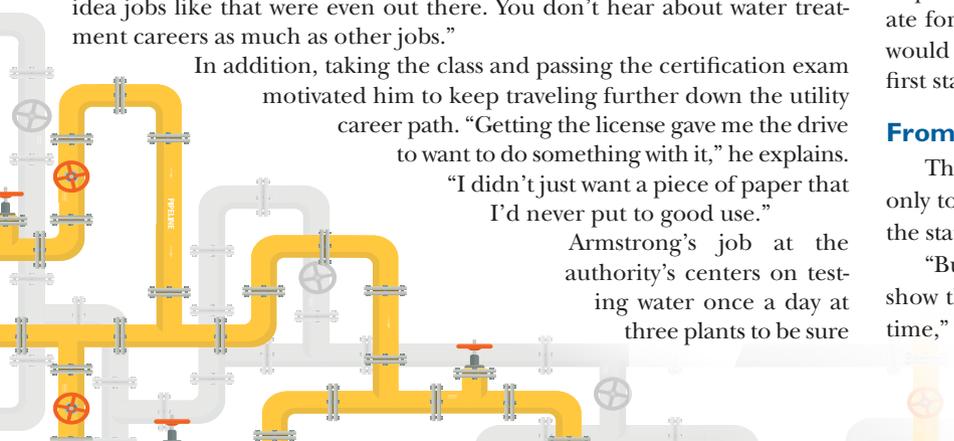
"We had to tailor a curriculum that would meet the needs and satisfy the requirements of the state-certification program but still make it appropriate for high school students," Kuzminski says. "Typically, college students would take such a class. But that's what made this so unique — it was the first state-certified high school program."

From concept to reality

The 72-hour course, held during the second semester of school, was open only to seniors and offered as an elective class. Normally, anyone who takes the state-certification test must be 18 and a high school graduate, he notes.

"But the state worked with us and waved that rule, as long as we could show that the student was in good standing and was likely to graduate on time," he says.

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.

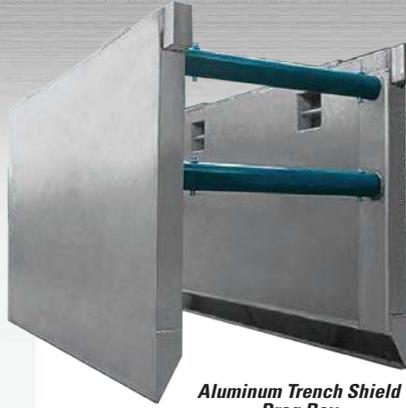


Trench Shoring

with Light Weight ALUMINUM

SALES • RENTALS • SERVICE
REPAIRS • TRADE-INS • RECERTIFICATION

- Economical and Modular
- Professional Engineer Certified to O.S.H.A. Regulations
- Field Service and Support
- Our Light weight Systems are Transportable By Pick-up, Truck, Van or ASI Shoring Trailer
- Custom Configurations Available
- Unload & Assembly by Hand



Aluminum Trench Shield Drag Box



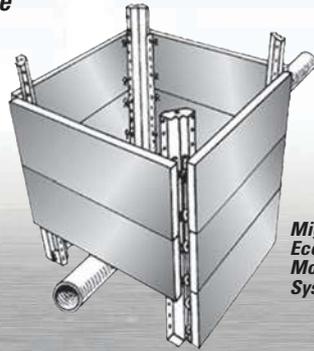
Aluminum Trench Shield Drop Box

- Manufacturer of Complete Line of Heavy Duty and Lightweight Aluminum or Steel Trench Shoring.

- Road Plates & Rock Boxes
- Worlds only Manufacturer of Aluminum Slide Rail Systems



MightyLite® Erector Series



MightyLite® Economic Modular System

Original MightyLite Since 1989

FACTORY DIRECT

AMERICAN SHORING INC.

1-800-407-4674

www.americanshoring.com
E-Mail us at: sales@americanshoring.com



In addition, to provide extra motivation to take the course, students who pass the state-certification exam are also eligible to receive 3.5 credits toward a basic-level environmental class at nearby Gateway Community College, Kuzminski adds.

Are students generally surprised about the careers available in the water industry? Yes and no, Kuzminski concedes. “It’s like any class, where some students become very engaged and others think it’s nothing more than a neat class to take as an elective,” he says.

During the first year in 2009, 12 students took the course and three passed the state certification exam. The curriculum undergoes an annual evaluation to ensure it fulfills the needs of students and the state. “We’re constantly tweaking the curriculum,” he says.

Moving the needle

Has the course achieved its goal? Absolutely, Kuzminski says. “It’s been a very successful program. We’d consider it a success even if only one student passed the certification exam.”

In some cases, students who didn’t choose career paths in the water and sewer industries did obtain jobs in related fields, and Kuzminski believes the exposure they received via the program nudged them toward these secure, well-paying jobs. “The bottom line is that had they not taken this course, they never would’ve known the career opportunities that exist,” he says.

The program hasn’t always enjoyed smooth sailing, however. For example, the class was cancelled for several years after a change in the high school’s administrative leadership, then was reborn in 2017 at Bloomfield High School.

That disruption underscores some of the challenges that can emerge if

“The Water and People course really opened my eyes to different career opportunities in the water industry.”

Kyle Armstrong

other utilities try to develop similar programs. Sometimes program advocates at the school retire or leave their jobs, for example. Or educational and funding priorities change.

“Politics always plays a big role in things like this,” he says. “You have to be persistent because it can be a struggle at times. People might want to take the course in different directions, but you have to ensure it still meets the state’s content requirements.”

More outreach

Since Water and People was introduced, Kuzminski has broadened the concept by helping to create other programs that expose even more students to career opportunities. One is called Learn and Earn — Water Boot Camp, a four-week-long summer partnership with the Metropolitan District Commission, a water-and-sewer utility based in Hartford.

The program enables eight to 10 high school juniors and seniors, selected from eight member towns within the commission’s service area, to receive two weeks of instruction in how water and sewer utilities operate. After the first two weeks, the participating students then get embedded for two weeks in a department of the Metropolitan District Commission, immersing them in various operations. The students get paid for all four weeks.

“It’s basically the Water and People curriculum on steroids,” explains Kuzminski, who has more than four decades of experience in the water industry. “We bring in the kids and expose them to the tasks within the water industry. They make filters, help with watershed inspections, get tours of treatment plants and facilities, and so forth.”

The town water department also hosts a booth at as many regional career fairs as possible. In short, Kuzminski uses as many channels as possible when it comes to exposing students to career opportunities in the water industry.

“I’m now targeting seventh and eighth graders, too,” he says. “We need to get things on students’ radars earlier — let them know about these great careers.”



ADAPTING TO CHANGE

Award-winning Florida utility taking steps to modernize and improve a system that's already earning honors

By Erik Gunn

Bal Harbour may be best known as an affluent and glamorous residential and resort suburb of Miami — a Florida crown jewel.

But like the proverbial king who puts his pants on one leg at a time, the island village is in one respect no different from every other community in the nation: Its residents need water, sewer service and stormwater control.

On that front, Bal Harbour has been making a mark as distinctive as its reputation for luxurious living — so much so that last year the Florida Section of the American Water Works Association recognized the village as top in its class for water distribution systems.

And that's even before the complete make-over of its water distribution system, now in the early phases. Along the way, it's adopted new technology that has cut water leaks to the lowest in memory and found ways to streamline what once looked like a staggeringly expensive master plan to rebuild the entire water, wastewater and stormwater infrastructure.

By any measure, the utility is tiny, with 17,200 linear feet of sewer mains (3.25 miles) and 22,065 liner feet of water mains (just shy of 4.2 miles). But John Oldenburg, director of the village Parks and Public Spaces Department, of which Water & Sewer Utility Operations is a part, says it's able to be

nimble and quickly adapt to changing realities.

Bal Harbour is just north of Miami and Miami Beach. The community is six-tenths of a square mile in area and has a population of just over 3,000 people. The high-end residential community of luxury homes, condominiums and exclusive shopping lies between the Atlantic Ocean on the east and the Florida mainland (just across Biscayne Bay) to the west.

Reconstruction plan

The utility system was built in 1946, and with the exception of a section of 12-inch water main that was replaced in 2013, the water and sewer lines largely date back to the original construction.



Bal Harbour Park and Public Spaces utility service worker Roger Daniels tests a backflow preventer on a fire hydrant while Larry Lee looks on. (Photography by Samuel Navarro)

Roger Daniels takes a water system reading and transmits the data using the utility's newest Trimble Nomad hand-held computer.



PROFILE:

Bal Harbour
(Florida) Water & Sewer
Utilities

CUSTOMERS (POPULATION):
3,000

SERVICE AREA:
Village of Bal Harbour

EMPLOYEES:
5

INFRASTRUCTURE:
Water mains: 22,065 linear feet
(4.2 miles)
Sewer mains: 17,200 linear feet
(3.25 miles)

**ANNUAL OPERATING BUDGET
(FISCAL YEAR 2018):**
\$4.8 million

WEBSITE:
www.balharbourfl.gov

“Although the DOH has not had a lot of experience with that approach, they’re very interested in it and they’re looking forward to observing a pipe bursting operation.”

John Oldenburg

we could do differently to make the projects less invasive,” Oldenburg says.

That review, conducted primarily by Michael Alvarez, village utility compliance officer, included a complete video survey of the system. In the process, the village and its contracted engineering consultant upgraded the system maps to GIS-based maps. Alvarez and Jason Atkinson, utility operations supervisor, spearheaded the review and development of alternative approaches that evolved from it.

Scaling back

Because of the review, the village scaled back its plan for the sewer and stormwater system, opting to use lining where possible in a number of locations rather than wholesale replacement of lines that would require open-trench construction.

It affirmed the plan to replace the water system, however.

In one village neighborhood, a gated community of about 210 homes, “most of the waterlines were behind the homes between properties,” Oldenburg says. As time passed and the homes in that section were rebuilt to larger footprints, access to those lines for maintenance became more difficult.

The reconstruction plan calls for moving the mains to the front of the properties in that neighborhood. Lines throughout the system will be upsized using new materials: Asbestos concrete 16-inch pipes will be replaced with 18-inch HDPE pipes. Existing cast iron pipes that are 4, 6 or 12 inches will be replaced with HDPE pipes that are 6, 8 and 12 inches respectively. Ductile iron connections will be installed in certain places.

Going trenchless

To reduce disruption to streets and thoroughfares from open-trench construction, the village is using directional boring where it can for relocating lines, and pipe bursting to replace lines that do not have to be moved.

“That’s a relatively new approach we’ve been looking at,” Oldenburg says. Pipe bursting is approved by the Florida Department of Environmental Protection, but the Florida Department of Health has jurisdiction over approving the village’s utility construction plans. “Although the DOH has not had a lot of experience with that approach, they’re very interested in it and they’re looking forward to observing a pipe bursting operation.

Because of the system’s age and growing deficiencies, in 2012 the village launched development of a new water and sewer infrastructure master plan. The problems that prompted the plan included inflow and infiltration as well as blockages in the sewer lines, Oldenburg says. The water system also had problems, primarily in the form of extensive water loss, “just because of its age,” he adds.

As originally adopted in 2015, the master plan called for replacing the entire sanitary sewer, stormwater and water system lines at an estimated total cost of more than \$30 million. After the first project in the plan — rebuilding a sanitary sewer station for \$3.4 million — took longer than planned and disrupted the gated residential community served by the station, the village and the utility decided to take a second look “to see what



The Bal Harbour Park and Public Spaces water and sewer crew includes (from left) Larry Lee, William Junquera, Roger Daniels, Operations Supervisor Jason Atkinson and Bryan Butcher.

“We don’t have the luxury of having too many individuals to begin with. We rely on the staff to become as trained as possible. It benefits us, and it benefits them.”

John Oldenburg

time it would take for the meters’ turbine blades to reach full speed.

The new meters, however, have no moving parts and therefore aren’t subject to the same kind of deterioration in performance. The model’s 20-year lifetime is “the longest life expectancy of any meter that I saw,” Atkinson says.

Combined with an annual leak detection program, the high-efficiency new meters have cut water loss to less than 3%. In the most recent reporting quarter, water losses were reported at less than 1%.

The detection protocol, which also is performed as needed, sends a utility technician to check every valve in the system. The technician uses an electronic stethoscope instrument to listen at the valve site for the telltale sound of leaking. The process takes two to three days to complete; it is also used when signs of leakage surface at other times in the year.

Lean workforce

The utility operations account for five of the Public Works Division’s 14 employees. The water, sewer and stormwater systems each have one dedicated employee, along with a fourth who covers for each of the three as needed. The fifth is Atkinson.

The three specialized employees are cross-trained in each other’s specialty to ensure complete coverage as well. “We don’t have the luxury of having too many individuals to begin with,” Oldenburg says. “We rely on the staff to become as

So we’re confident we’ll be able to obtain the approvals we need to do it where it’s applicable.”

For the project, the gated residential area has been divided into six sections, and design on four of those started earlier in 2019.

A related project is the replacement of an emergency water main from North Miami, a nearby municipality that is one of two water providers to the village. That project is tentatively scheduled to start by the end of the current fiscal year, Oct. 1, or early in fiscal year 2020.

“That will probably be done with pipe bursting as the first project,” Oldenburg says.

Qualified contractors will be employed for the bulk of the construction work, including the use of directional boring and pipe bursting.

Cutting water loss

Earlier this year, Bal Harbour wrapped up a four-month project to replace all the village water meters with Neptune Technology Group MACH 10 ultrasonic meters that have drive-by meter-reading capability.

Before the changeover, “our water loss was somewhere around 11%,” Atkinson says. A leak detection project found some leaks in the water system, but not enough to account for the level of loss.

As the replacement meters went in, however, “we saw a drastic decrease in our water loss percentages,” Atkinson says.

The reason, he explains, is that as the older meters wore out, they were less accurate in measuring water usage at lower volumes because of the

GOING HIGH-TECH

As Bal Harbour, Florida, has been undergoing a makeover of its water, sewer and stormwater infrastructure, the village has also been upgrading its communications and recordkeeping practices.

Starting about a year and a half ago, the village replaced paper forms with Apple iPads for crews to enter their work data. The new electronic forms are linked to GIS records and allow the accumulation of a continuous record of work performed on the system. They also provide accurate data for compliance reporting, explains Jason Atkinson, utility operations supervisor, who also serves as water systems liaison for the village Water & Sewer Utility Operations in the Parks and Public Spaces Department.

Records for utility infrastructure and components are in the process of being transferred over to a GIS web viewer Geocortex cloud storage system.

Besides reducing physical paperwork and enabling work crews to keep more accurate records, the iPads enable the utility to transfer large files to compliance agencies and to provide analytics derived from maintenance records.

The iPads also allow workers to take pictures of every component they work on in the field, with GIS records to help pinpoint the work location, adds John Oldenburg, director of the Parks and Public Spaces Department. “We can track every location they go to.”

That’s not the only technical tool the village work crews use. Track Star vehicle systems document the location of every work assignment crews go to, for example. Cellphones provide instant communications and allow workers in the leanly staffed operation to quickly communicate with co-workers and utility headquarters for assistance as needed.

“All those little efficiencies add to the ability of the utility to respond, and also to the department itself,” Oldenburg says.

Wastewater Solutions from RELINER®/Duran Inc.

Inside Drop Bowl Stainless Pipe Supports

Type 304 & 316 Stainless Steel



- Eliminate outside drops
- Reduce maintenance
- Simplify cleaning
- Stop corrosion
- Install quickly
- Outlets from 4" - 24"
- Optional force line hood



Manhole Invert Channels

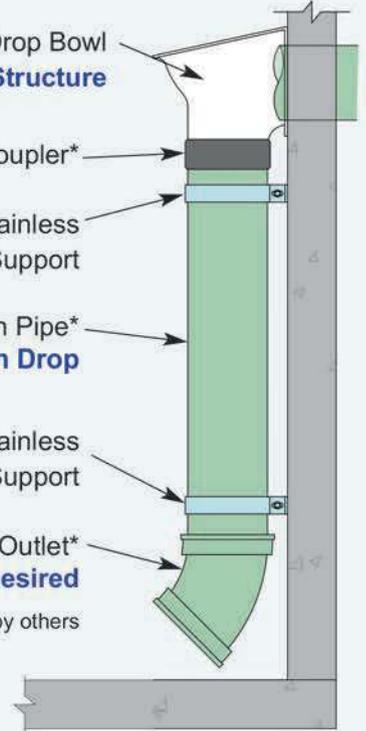
RELINER® Drop Bowl
Fits any Structure

Flexible Pipe Coupler*
RELINER® Stainless
Steel Pipe Support
Down Pipe*
Any Length Drop

RELINER® Stainless
Steel Pipe Support

Bend at Outlet*
Orient as desired

*Supplied by others



U.S. Patents #5553973, 6074130

www.reliner.com

Proudly made in the USA

1-800-508-6001

trained as possible. It benefits us, and it benefits them." The village now has one Level 2 water distribution system operator and three Level 3 water distribution system operators within the department.

Three of the employees have also undergone backflow inspector certification from the Florida Water and Pollution Control Operators Association.

Bal Harbour's status as a barrier island and the presence of extensive residential irrigation systems on most single-family private properties requires backflow prevention devices in most of those private systems. They're also required for any building over five stories tall and where there's new construction.

The systems are required under state water purity regulations. They prevent hoses from accidentally sucking contaminants — whether from lawn chemicals applied during irrigation or from paint used on a construction site, for example — into potable waterlines in the event of a sudden pressure loss. Besides installation, the regulations require property owners to arrange for and document annual inspections.

In the past, that would be done by private contractors, with the village having to verify that property owners comply. "This way, we do it ourselves and we do not have to rely on them to have it performed," Atkinson says.

"We're able to shift direction quickly. We're able to adapt to new technology quickly."

John Oldenburg

Positive direction

For the utility operations, the last five years have been both a time of learning and growth — not in size, but in knowledge, capability and overall effectiveness — Atkinson says. "We're going in a direction that's positive. Morale is high, and so is the amount of knowledge in the system with employees. Everything's working out well."

Those accomplishments suggest why Bal Harbour received the Division 1 award among water distribution systems in 2018 from the Florida Section of the American Water Works Association.

It wasn't an award that the utility applied for, Oldenburg says. But it does allow it to highlight its strong points. The department is looking toward submitting an application for American Public Works Association accreditation by 2022.

"We're able to shift direction quickly," he says. "We're able to adapt to new technology quickly."



William Junquera checks a valve during a cooling tower inspection at a residential building.

We don't have a lot of bureaucratic hurdles to go over to seek approval for new actions. A lot of it is just that ability to move quicker than most organizations when it comes to change." ♦

FEATURED PRODUCTS FROM:

**Neptune
Technology Group**
800-633-8754
www.neptunetg.com

Trimble
800-234-3458
www.trimble.com

COOL YOUR PIPES

Ice pigging offers an efficient, cost-effective and powerful approach to cleaning force mains

By Paul Treloar



“Once you empty the truck, you turn the pumps on, and the pumps force the pig down the line. It’s the most efficient and effective means of cleaning a force main that I could find.”

David Royall

Since it was first deployed in the U.S. seven years ago, ice pigging has proven to be a powerful, sustainable and increasingly popular cleaning method for wastewater force mains and siphons, as well as potable water distribution mains.

The accumulation of sediment, fats, oils, greases and debris in wastewater collection systems clogs force mains and siphons, causing pipeline restrictions that increase energy use, lower pump efficiency and lead to sanitary sewer overflows. They can also lead to capital expenditures for increased pumping capacity or force main replacement.

Cleaning approaches like hard pigs and soft swabs present a risk because they can get stuck in the force main, requiring emergency excavation. Excavating to retrieve a hard pig is costly and time-consuming at best, and in some locations such as highways, river crossings and developed areas, it is simply not an option. In cases where redundant systems do not exist, installing temporary bypass systems presents a significant expense.

Other methods such as flushing and waterjetting can be inefficient and at times ineffective. In addition, these processes use a great deal of water, which may not be readily available.

Ice pigging addresses all of these issues.

Glacial action

Developed in the U.K., ice pigging involves pumping a slurry of ice into a main through an existing fitting, using pressure to push the ice pig downstream and discharging the dirty ice and waste material into a gravity sewer or receiving treatment works.

A semisolid material, the ice slurry can be pumped like a liquid, but it

behaves like a solid once the pig is formed in the main. As the pig passes through the pipe, it acts like a glacier by scrubbing the pipe and entraining accumulated deposits as it moves downstream, incorporating sediment and biofilm into the ice instead of “bulldozing” it. Unlike traditional hard pigs, an ice pig is not so abrasive that it risks damaging the pipe.

Ice slurry filling 20% to 30% of a pipe’s volume cleans with shear forces up to 1,000 times greater than water alone. This provides more effective cleaning while using significantly less water than traditional flushing methods. In fact, ice pigging uses approximately 50% less water than standard flushing. It also takes significantly less time: Typically, the section of main being cleaned is out of service for no more than 30 to 60 minutes.

Suitable for all pipe materials, ice pigging offers several other benefits. Because the slurry is pumped into the main, specialized launch and retrieval stations are not required as with mechanical pigging or swabbing. Moreover, customer service isolation is not usually needed, and sewer lines can be quickly and easily put back into service after cleaning.

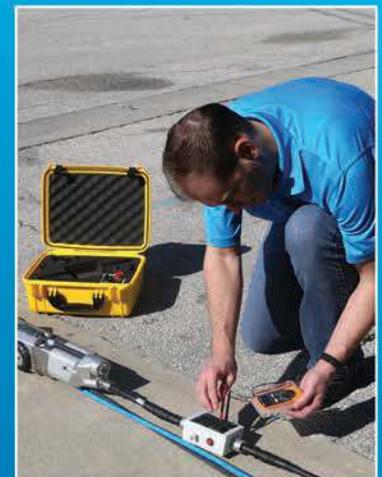
Perhaps most important, since the pig is an ice slurry and not a solid object, it cannot become stuck in the pipe like traditional mechanical pigs or soft swabs. Instead, an ice pig can negotiate pipe bends, partially closed gate valves and in-line butterfly valves without affecting the cleaning process. The ice pig is not affected by changes in the pipe diameter, and any ice that remains behind simply melts.

Simple steps

The first step in using ice pigging to clean sewer force mains is isolating the force main in question. Wet well levels are managed to prepare for

(continued)

GO THE DISTANCE GO THE DISTANCE GO THE DISTANCE GO THE DISTANCE



Take the **TROUBLE** out of **TROUBLESHOOTING**

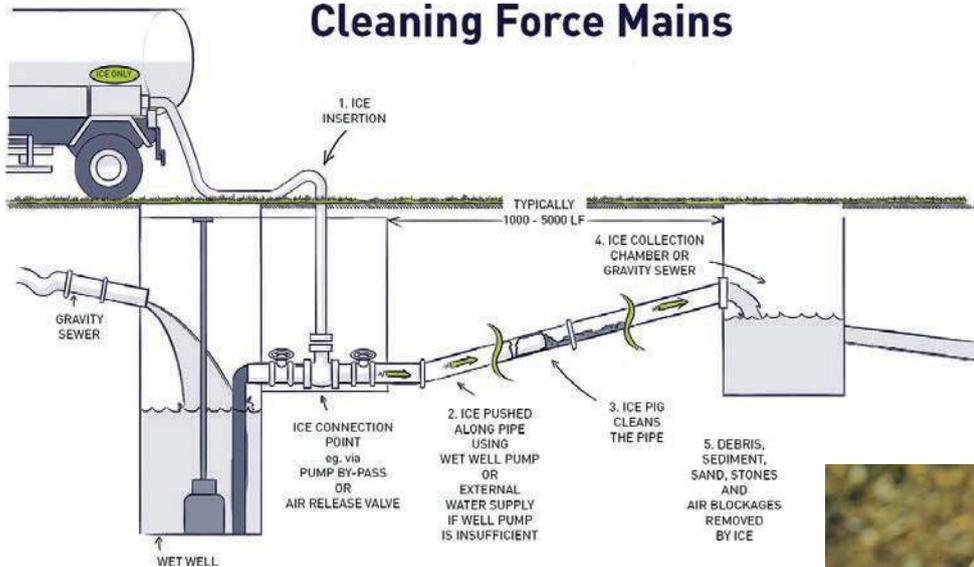
The CUES REDI Kit is the first CCTV pipeline inspection troubleshooting kit available on the market! The CUES REDI Kit is designed to significantly reduce unplanned downtime with handy diagnostic tools that are indispensable at remote sites for electrical issues, troubleshooting, and repair. Use REDI kit, along with your CUES technical staff, and take troubleshooting and support to the next level! Get up and running quickly and **GO THE DISTANCE** with the CUES REDI Kit!

For more information or to schedule your free demo, contact CUES today!



Phone: 800.327.7791
 Email: salesinfo@cuesinc.com
 Website: www.cuesinc.com

Cleaning Force Mains



interruption. The lift pump is turned off, and the required amount of ice is pumped into the main via a pump bypass or air release valve.

The ice is then pushed along the pipe using a wet well pump or external water supply if the well pump is insufficient. The pig flows through the pipe, cleaning it as it passes through.

The final step is to discharge the dirty ice and waste material. At the collection outlet, the dirty ice and waste material are discharged into a gravity sewer or the receiving treatment plant. The dirty ice can also be collected with a vacuum truck.

The force main is then returned to normal operational service.

Sonoma Water

Based in Santa Rosa, California, Sonoma Water serves communities in the Sonoma area, a world-famous wine growing region and tourist destination.

The agency manages and maintains a water transmission system that delivers naturally filtered water from the Russian River to nine cities and special districts that, in turn, deliver drinking water to more than 600,000 residents of Sonoma and Marin counties. This water system includes 90 miles of underground aqueduct pipes, as well as storage tanks that convey and store approximately 130 million gallons of water for the agency’s clients. In addition, Sonoma Water operates the wastewater collections system for many of the smaller communities in the county.

In 2018, the agency was experiencing a drop-off in pump efficiency in one of its sewer collections systems and force mains. The agency deduced that there was blockage in a force main that’s under pressure from a lift station where wastewater is collected to the treatment plant in Petaluma.

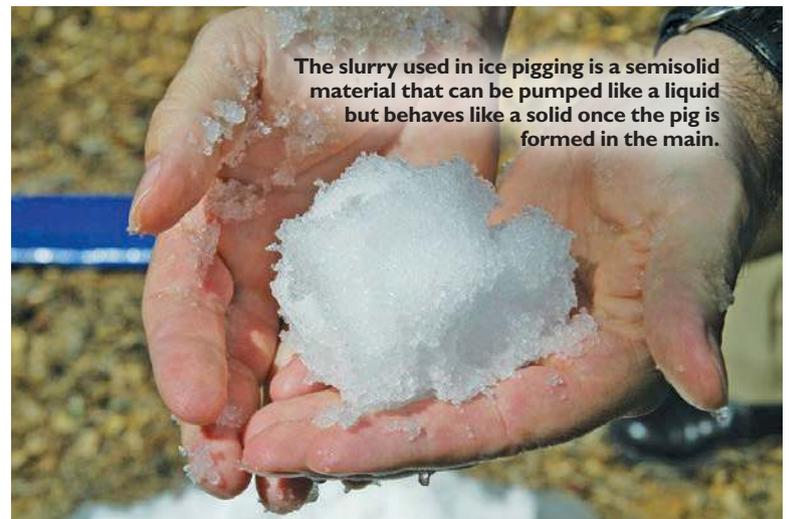
“While we typically don’t have blockages in our force mains due to the lines being under pressure, we recognize that biofilm accumulates on the inside of the lines and thickens over time,” says David Royall, environmental services coordinator for Sonoma Water.

This situation became exacerbated during extreme wet-weather events when the system became susceptible to inflow and infiltration through joints and manholes in the gravity sections of the sewer system. In those instances, the pumps needed to push more water down the line than they were meant to handle. As a result, there were numerous SSOs upstream of the lift station.

After determining that a restriction existed, Sonoma Water decided to move forward with cleaning the line to see if that would solve the problem. An initial strategy involved putting breaches in the force main to provide

access points that would allow for manual cleaning of the line. However, it quickly became apparent that this system was going to be problematic and very expensive. Sonoma Water would have to acquire easements in some locations to gain access to its pipeline. Additionally, it would have to factor in excavation costs and the expense of putting valves into each section of the pipe.

“This method was going to be very costly; there had to be another way. I did an internet search to discover other ways to clean sewer force mains without intruding into the pipe itself,” Royall says. “I came across ice pigging from SUEZ Advanced Solutions and, from there, contacted the company. SUEZ’s water system consultant



The slurry used in ice pigging is a semisolid material that can be pumped like a liquid but behaves like a solid once the pig is formed in the main.

Daniel Eisenberg called me back, and the rest is history.

“Ice pigging was the most unobtrusive means of cleaning these lines that I could find,” Royall adds. “All we had to do was install a 2-inch fitting so the ice pigging truck could tie directly into it. Then the truck pumped the slurry directly into our force main. We didn’t have to cut any pipes or dig anything up — you’re just inserting the ice mixture into your system. Once you empty the truck, you turn the pumps on, and the pumps force the pig down the line. It’s the most efficient and effective means of cleaning a force main that I could find. I must admit, it almost seemed too good to be true: How can something so simple be so effective?”

The effectiveness of the ice pigging solution became evident when one of Sonoma Water’s engineers revisited the efficiency of the pumps. The agency reported an increase in pump efficiency of 12% on the northern section and 15% on the southern section.

In addition, in spite of having an extremely wet winter, Sonoma Water experienced virtually no overflows, avoiding fines and eliminating the time and expense needed to send notices out to customers.

The cost savings over excavation and its related requirements was a big benefit. Sonoma Water estimates that the cost of the ice pigging operation was only 10% of the alternative. ♦

About the Author

Paul Treloar is ice pigging product manager at SUEZ Advanced Solutions (www.suez-na.com).

C70

HD Video Cleaning Nozzle



A **Nozzle** Idea

The Sewer Robotics C70 video nozzle features 8 cleaning jets, battery pack, LED lighting, WiFi, and self-leveling HD camera for video recording and jetting 6" to 40" pipelines.

Video is recorded on an SD-card inside the nozzle and downloaded to the included tablet via integrated WiFi as soon as the nozzle has returned to the manhole.



Specifications

Scope of Use:	6" - 40" Diameter Pipelines
Jet Angle:	20 Degrees
Hose Connection:	1.25", 1", .75" Fitting
Flow:	40 - 170 GPM
Pressure:	2,000 - 4,000 PSI
Battery Runtime:	8+ Hours
Video Memory:	8+ Hours

Features

- Auto Upright HD Camera
- 7 Pressure Switched LEDs
- 8 Exchangeable Jet Inserts
- Double Sapphire Lenses
- Wireless Video Downloading
- Rugged Tablet with GPS
- Fully Submersible
- Cleaning Assessment Software (optional)



8TH EDITION!

the **Water** 2019 expo

In MIAMI **BOOTH #834**

AUGUST 28 & 29



The Kit - What's Included

- C70 Nozzle with HD Camera and LED lights
- Protective Case
- Tablet with GPS
- Pipeline Viewing Software
- Jet Inserts
- Battery Charger

Sold Exclusively Through **VAC-CON** in North America

CALL US TODAY FOR A QUOTE!

Email the Team Directly at

888 • 781 • 7971

Partsdepartment@vac-con.com

D.C. WANTS TO HEAR FROM YOU

Let your legislators know we need water and wastewater infrastructure funding

By Sheila Joy

I must admit, my first trip to Capitol Hill on behalf of NASSCO was a bit intimidating.

I was under the false impression that I had to know the proposed acts inside out and be able to rattle off facts and figures about our nation's infrastructure. The truth is, and to my great relief, representatives from Congress aren't looking for us to tell them what they already know; they are looking to industry experts to help them better understand why water and wastewater systems should be included in any infrastructure package.

Last May, NASSCO joined a fly-in hosted by the National Utility Contractors Association to build awareness in Washington for the need to invest in critical water and wastewater infrastructure. Joined by Steve Dye, NASSCO's government relations consultant, and Chase Deheny, NASSCO's Government Relations Committee co-chair, I had the opportunity to meet with representatives from Michigan (where Deheny is a constituent). Armed with excellent information provided by NUCA, topics included:

- The federal government's share of spending on water infrastructure has declined significantly over the last three decades.

- The Environmental Protection Agency estimates that at least \$271 billion for clean (waste) water and \$472 billion for drinking water will be needed over the next 20 years.
- An estimated 20,000 to 26,500 jobs can result from just a \$1 billion investment in water and wastewater infrastructure.

The majority of our time, however, was spent discussing the basics of what causes sanitary sewer overflows and combined sewer overflows and the need to address these issues before they happen through proper assessment, maintenance and rehabilitation of underground infrastructure.

NASSCO will be making another visit to Capitol Hill in early December, and we're hopeful members from other states will join us so the entire country is represented. For now, NASSCO has made it easy to reach out to your congressional leaders via the NASSCO Sewer System Heroes program at www.nassco.org/government-relations. It takes just two minutes to submit a prewritten letter to your congressional leaders, who truly do want to hear from you. ♦

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

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

Get the EDge Training and Continuing Education Courses

August 6

Amarillo, TX
Includes: PACP, MACP, LACP
Trainer: Sammy Maestas
505-412-3362 • sammymaestas@yahoo.com

August 6

Romulus, MI
Includes: PACP, MACP, LACP
Trainer: Jerry Weimer
513-659-5008 • jerryweimerconsulting@gmail.com

August 6

Columbia, SC
Includes: PACP, MACP, LACP
Trainer: Paul Booth
704-681-3989 • woodsdeenv@gmail.com

August 12

Marriottsville, MD
Includes: PACP, MACP, LACP
Trainer: Irvin Gemora
410-484-1730 • irv.gemora@gmail.com

August 13

Birmingham, AL
Includes: PACP, MACP, LACP
Trainer: Paul Booth
704-681-3989 • woodsdeenv@gmail.com

August 13

Houston, TX
Includes: ITCP - CIPP
Trainer: David A. Reaves
757-874-5670 • dreaves@prismce.com

August 19

San Francisco, CA
Includes: PACP
Trainer: Brandon Conley
248-349-0904 • pacp@dohenycompanies.com

August 20

Virginia Beach, VA
Includes: LACP, PACP, MACP
Trainer: Paul Booth
704-681-3989 • woodsdeenv@gmail.com

August 20

Covington, GA
Includes: PACP, MACP, LACP
Trainer: John Jones
678-527-4212 • plumblineconsultant@gmail.com

August 20

Kansas City, MO
Includes: PACP, MACP, LACP
Trainer: Jerry Weimer
513-659-5008 • jerryweimerconsulting@gmail.com

August 20

San Francisco, CA
Includes: PACP, MACP, LACP
Trainer: Brandon Conley
248-349-0904 • pacp@dohenycompanies.com

August 21

Marriottsville, MD
Includes: PACP
Trainer: Irvin Gemora
410-484-1730 • irv.gemora@gmail.com

August 27

Clearwater, FL
Includes: PACP, MACP, LACP
Trainer: Don McCullers
727-531-3505 • don.mccullers@cardno.com

August 27

Whitestown, IN
Includes: LACP, PACP, MACP
Trainer: Brandon Conley
248-349-0904 • pacp@dohenycompanies.com

August 28

Louisville, KY
Includes: ITCP - CIPP
Trainer: Gerry Muenchmeyer
252-626-9930 • gerry@muenchmeyerassoc.com

August 28

Louisville, KY
Includes: ITCP - CIPP
Trainer: Gerry Muenchmeyer
252-626-9930 • gerry@muenchmeyerassoc.com

September 9

Rochester, IN
Includes: MACP, LACP, PACP
Trainer: Brandon Conley
248-349-0904 • pacp@dohenycompanies.com

September 10

Oakland, CA
Includes: PACP, MACP, LACP
Trainer: Marilyn Shepard
916-899-8961 • mshepard1@hotmail.com

September 11

Covington, GA
Includes: PACP, MACP, LACP
Trainer: John Jones
678-527-4212 • plumblineconsultant@gmail.com

September 16

Marriottsville, MA
Includes: LACP, PACP, MACP
Trainer: Irvin Gemora
410-458-9591 • irv.gemora@gmail.com

September 17

Columbus, OH
Includes: MACP, LACP, PACP
Trainer: Jerry Weimer
513-659-5008 • jerryweimerconsulting@gmail.com

NASSCO PRO TRAINING



OTHER CLASSES FORMING

Contact one of the trainers listed above if you are interested in having a class at your facility or in your area.

delivering POWER



NEW



DESIGNED & BUILT
BY ARIES INDUSTRIES

WOLVERINE 2.0 CUTTER

©2019 ALL RIGHTS RESERVED

Powerful & Precise Cutter for Reinstating Laterals

Experience the next generation in cutters with the new electric Wolverine 2.0. Powerful and durable, it cuts through difficult material rapidly and accurately. The Wolverine 2.0 operates in pipes 6- to 18-inches. Features include:

- Fingertip control for outstanding operator ergonomics
- Infinitely adjustable speed and axis movement for accurate cutting
- Built-in lens wiper and scraper to keep the camera clear while in the pipe
- 500' cable reduces truck set-up time

Contact Aries today to see how Wolverine 2.0 is on the cutting edge.

Visit us at this
upcoming show.

weftec
the water quality event™

CHICAGO
SEP 21-25, 2019
BOOTH #1864

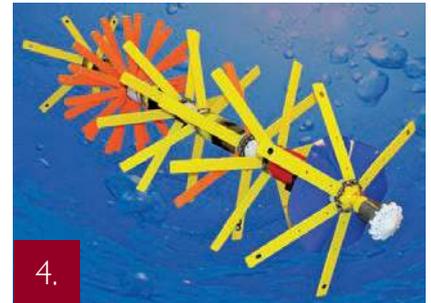
ARIES
INDUSTRIES, INC.

550 Elizabeth Street Waukesha, WI 53186 USA
800-234-7205 ariesindustries.com

raising the bar
UNDERGROUND

PIPELINE INSPECTION, SURVEYING AND MAPPING

By Craig Mandli



ASSET MANAGEMENT

1. InfoSense Sewer Line Rapid Assessment Tool

The **Sewer Line Rapid Assessment Tool**, or SL-RAT, from **InfoSense** can be used to screen 6- to 18-inch gravity-fed sewers for blockages. Results from over 120 million feet of screening show that 65% to 90% of pipes in the average utility do not need to be cleaned. This allows users to prioritize cleaning resources to areas that need it. With the capability to assess 10,000 to 20,000 feet per day, acoustic inspection can be a suitable preliminary screening tool. It requires no flow contact and is GPS-enabled. A full standard practice for using acoustic technology can be found in the ASTM Guide (F3220-17, Standard Practice for Prioritizing Sewer Pipe Cleaning Operations by Using Transmissive Acoustic Inspection). **704-644-1164; www.infosense.com.**

2. SmartCover Systems UnderCover 2

UnderCover 2 from **SmartCover Systems** makes use of advanced microelectromechanical systems technology for intrusion detection and unauthorized opening of sewer manholes to combat illegal dumping, vandalism and other security issues. The MEMS technology improves the robustness of entry detection and expands the configurability of the systems at remote and hard-to-access locations for utilities, communications, nuclear facilities, border security, transportation infrastructure, military installations and others. UnderCover 2 is now an integrated function within all of SmartCover's remote monitoring units, including leveraging Iridium satellite communications impervious to local power or cellphone outages. **760-291-1980; www.smartcoversystems.com.**

3. Superior Signal smoke testing

Smoke testing from **Superior Signal** can effectively help find cross-connected sewer lines and other sources of surface inflow causing wet-weather sanitary sewer overflows. Smoke candles provide visible smoke to detect more faults and at a longer distance. It is a fast, easy and inexpensive way to find leaks and faults in any type of collections system, with generators available in sizes to meet any need, from 30 to 500,000 cubic feet. **800-945-8378; www.superiorsignal.com.**

4. Xylem PipeDiver

The **Xylem PipeDiver** is a long-distance, free-swimming condition assessment tool that operates while the pipeline remains in service, providing utility owners with an alternative to inspection methods that require shut-down or dewatering. Its flexibility allows the tool to travel through a variety of pipe configurations including butterfly valves and sharp bends and tees, and because it deploys through existing appurtenances, it can reduce cost and effort to the utility. Pipeline owners receive comprehensive data on the condition of the pipe wall. For prestressed concrete cylinder pipe, that means identifying broken prestressing wire wraps; while on metal, it identifies localized areas of corrosion. **800-537-2806; www.xylem.com.**

CRAWLER CAMERAS

5. Aries Mobile Pathfinder System

The **Mobile Pathfinder System** from **Aries Industries** is a lightweight,



5.



6.



7.



8.

portable system for accurately inspecting mainlines 6 inches or larger. It includes a transporter, camera and lightweight reel 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 comes with a WiperCam Pan & 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. The transporter, camera, and reel are controlled by a single, all-in-one remote control with rechargeable wireless keyboard. **800-234-7205; www.ariesindustries.com.**

6. 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. Twelve-wheel 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.**

7. Forbest Products FB215

The **FB215** crawler inspection camera from **Forbest Products** is suitable for 6- to 16-inch pipe and comes with a waterproof crawler with three types of wheels on the six-wheel-drive system and double motors that can turn left or right with the creeping speed of 20 to 66 feet per minute. The waterproof, pan-and-tilt, high-resolution color camera head's focus can be adjusted with the high-brightness LED lights. It carries 500 feet of cable and includes a meter counter and universal wheels with braking function. The heavy-duty, waterproof control box includes a 10-inch LCD color screen with USB and built-in SD card to record photos and videos. Typing and editing are available. **877-369-1199; www.forbestusa.net.**

8. Pearpoint flexitrax P550c

The **flexitrax P550c** from **Pearpoint** is designed around simplicity of operation. Ready to use in 30 seconds from powering on, it requires minimal training to operate, letting the technician concentrate on pipe inspection. A large, 12.1-inch, high-definition, daylight-visible screen combined with full-size keyboard and dedicated function keys guide the survey process, making the system faster and easier to use. Built in is a high-capacity internal lithium-ion battery, providing power for up to a full day's typical usage, and 128 GB of solid-state memory, sufficient for over 90 hours' video recording. This portable and modular crawler system can be customized for the inspection of a vast range of pipes in all locations. It can be readily transported and easily wheeled onto site, allowing the technician to reach access points beyond the range of their vehicle. **800-688-8094; www.pearpoint.com.**

(continued)



9.



10.



11.



12.



13.

LASER PROFILING EQUIPMENT

9. RauschUSA KS135 Scan

The **KS135 Scan** from **RauschUSA** has two laser diodes integrated into a mainline TV camera head that projects lasers onto the pipe wall. It is designed to perform three tasks in one complete system: CCTV inspection, crack measurement and laser profiling. It is a full camera connected to the L135 steerable tractor. No lengthy, manual field calibration is necessary — simply place the profiler in the pipe and begin instantly. As it travels through the pipeline, it performs conventional CCTV inspection while taking accurate joint and crack measurements using the integrated laser diodes. On the return trip to the manhole, the rotating camera head analyzes the pipe profile via spinning laser technology. All data is instantly and accurately generated on site using the POSM software. There is no third-party analysis involved, thus providing immediate and reliable evaluation of the pipe right on site. It can be used in pipes 6 to 48 inches. **717-709-1005; www.rauschusa.com.**

MAINLINE TV CAMERA SYSTEMS

10. CPI Products Universal Roller Skids

Universal Roller Skids from **CPI Products** fit most push cameras and are designed to improve performance and protection in pipes from 3 to 16 inches in diameter. According to the manufacturer, using a plastic roller skid can protect a push camera from debris inside pipes and keep the lens from impacting pipe walls. A properly sized and fitted roller skid also keeps the camera centered for an improved image. **413-443-0925; www.cplproducts.com.**

11. EasyCAM M5200

The **M5200** sewer camera from **EasyCAM** is owner serviceable and only 12 inches tall and 27 inches wide. The camera head width is only 1 3/8 inches, which allows it to perform easily in 2-, 3- and 4-inch pipe. A robust fiberglass core allows the heavy-duty, midsize push cable to push through underground turns with ease. It offers 10- to 12-hour battery life and a Wi-Fi feature, which lets images be viewed on a tablet by the customer in the comforts of their home. The Wi-Fi also allows recorded videos to be uploaded with a couple clicks to any Dropbox or YouTube channel. Weighing only 38 pounds, this 200-foot sewer camera is available with a repair kit, allowing the technician to make field repairs. **239-260-2056; www.easycamllc.com.**

12. Electric Eel eCAM Ace 2 SL

A self-leveling color camera is standard on the **eCAM Ace 2 SL** from **Electric Eel**. The stainless-steel-housed, 1.68-inch-diameter, self-leveling color camera allows the operator to always have a clear, right-side-up view of the pipeline, providing a user-friendly way to inspect 3- to 10-inch pipelines for maintenance or troubleshooting. It comes with a 120-volt AC power supply or optional rechargeable battery pack, and a sapphire lens with 20-LED light ring and high-resolution CCD element. Its flexible camera spring helps navigate 3-inch P-traps, while its auto iris adjusts lighting automatically. It comes with an impact-resistant light ring cover, industry standard 512 Hz sonde, 5.4-inch LCD monitor with AR film for optimal viewing and 200 feet of braided fiberglass premium 1/2-inch pushrod. **800-833-1212; www.electriceel.com.**

13. General Pipe Cleaners Gen-Eye USB

The **Gen-Eye USB** video inspection system from **General Pipe Cleaners** records videos and photos on USB flash drives. The command module has a USB port to store video or still images up to 128 GB total capacity; a 10.5-inch LCD color monitor for crisp, clear pictures; a full-size, waterproof key-



board for on-screen titling, footage counter, date and time stamp, and voice-over microphone. All are safely contained in a heavy-duty Pelican case that weighs 12 pounds. Three models are offered: the Gen-Eye USB; the USB-W with Wi-Fi inside to record inspections on your smartphone or tablet; and the USB-P premium inspection system that includes all the features of the USB, plus a sunlight-readable screen and a four-hour battery for remote operation, as well as the Wi-Fi transmitter. **800-245-6200; www.drainbrain.com.**

14. Hathorn Cleaner Wi-Fi Doc

The **Cleaner Wi-Fi Doc** from **Hathorn** allows users to transmit wireless video to a tablet or phone in high definition. Simply download the Hathorn app, connect to the Wi-Fi stream and begin recording or taking pictures. Once finished recording, the technician can easily send videos via Messenger, email, AirDrop, YouTube or Facebook. The Wi-Fi reels come in three sizes and are available with multiple cameras and rod diameters. **905-604-7040; www.hathorncorp.com.**

15. Perma-Liner Industries drain/pipe inspection camera system

Perma-Liner Industries offers a drain/pipe inspection camera system with either a 130-, 165- or 197-foot cable length option and a diameter of 1/4 inch on each cable. The 7-inch monitor offers LCD color with universal installation brackets, a push record button, SD card slot and rechargeable battery that lasts up to five hours per charge. The camera head is made of 304 stainless steel, measures 1 1/2 by 3 1/4 inches, and features a view angle of 120 feet, focal distance of 5 to 47 inches, 1/3-inch Sony CCD, 480 TV lines sensor and self-leveling feature. The camera head is waterproof up to a maximum of 65 1/2 feet underwater. The inspection camera boasts two roller skids: a mini skid with a diameter of 2 3/4 inches and another universal skid with a diameter of 4 3/4 to 6 inches. The camera system is a lightweight design at approximately 25 1/2 pounds. **866-336-2568; www.perma-liner.com.**

16. RapidView IBAK North America MicroLite Pushrod System

The **MicroLite Pushrod System** from **RapidView IBAK North America** is a lightweight, small-diameter push system with a 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.**

17. Ratech Electronics Elite SD/USB Wi-Fi

The **Elite SD/USB Wi-Fi** pipeline inspection camera system from **Ratech Electronics** records pipe inspections wirelessly to an iOS or Android device and takes live video and digital still photos that can immediately be uploaded to YouTube. A smartphone app allows video to be streamed wirelessly. The Wi-Fi interface is available on any current Ratech Electronics products or existing Ratech Electronics systems in the field and is available with a sun-readable, 10-inch LCD monitor and either a self-leveling camera, small ultramicro camera or pan-and-tilt push camera. A built-in battery is optional. Users can also record to a USB stick or SD card if Wi-Fi isn't required. Systems come in cable lengths from 100 to 400 feet. **800-461-9200; www.ratech-electronics.com.**

18. RIDGID SeeSnake with TruSense

Connecting to **RIDGID SeeSnake** CSx series Wi-Fi enabled monitors, **TruSense** conveys information about the in-pipe environment, eliminating common challenges faced by diagnostic professionals. For example, the high dynamic range image sensor expands the camera's dynamic range,



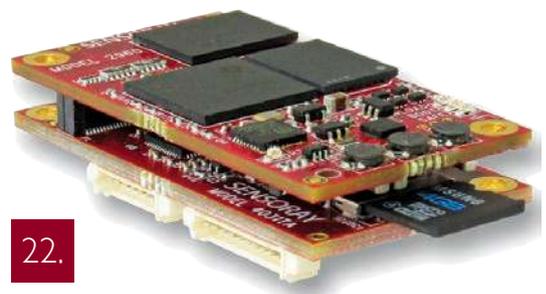
19.



20.



21.



22.

allowing a greater ratio of bright and dark areas to be displayed in the same image at the same time. This means fewer blown-out areas and sections of pipe that are too dark to see. In addition, the camera lets the user choose between fixed or self-leveling camera options. TruSense also includes an integrated TiltSense feature that reports back the pitch of the camera in-pipe. This on-camera inclinometer helps contractors accurately identify and diagnose problems underground. **800-769-7743; www.ridgid.com.**

19. Trojan Worldwide CI00-512SL

The **CI00-512SL** self-leveling color camera system from **Trojan Worldwide** is a lightweight, easy-to-operate system designed for 1 1/2- to 4-inch lines. It has a 1-inch, self-leveling waterproof color camera head with adjustable LED lights. The 512 Hz sonde transmitter is built into the spring of the camera, which allows more flexibility when maneuvering around sharp turns, and also creates a stronger signal for locating. The system has a 115-foot durable pushrod and a built-in footage counter. The display screen is a 7-inch LCD with DVR, with SD card recording and a built-in microphone for voice recording. The built-in battery offers seven hours' runtime and has an AC adapter for charging or direct power. Also included is the SD card, USB adapter for the SD card, protective visor, two skids and a waterproof case for the entire system to fit in for easy transportation. **800-392-4902; www.trojanworldwide.com.**

20. 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 choices of 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' 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 smartphone apps or directly to a computer for recording to the hard drive. **800-446-3392; www.vivax-metrotech.com.**

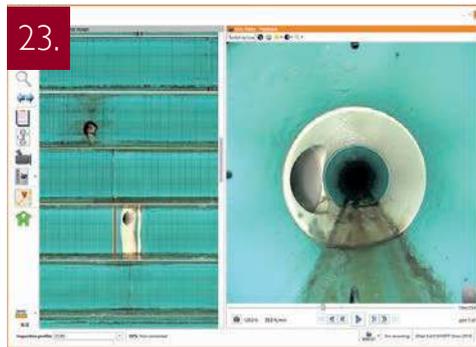
21. Wohler USA VIS 700

The **VIS 700** HD inspection system from **Wohler USA** provides flexible features needed for a variety of inspection applications. It offers razor-sharp, HD images; zoom; a focus function via joystick for precise inspection; and the ability to stream live images and video via wireless LAN. It comes with a removable touch-screen monitor with adjustable handgrip; automatic screen rotation; on-screen keyboard for notes; a voice-over recording option; an easy-to-clean, removable pushrod; and variable pan-and-tilt speed via joystick. **978-750-9876; www.wohlerusa.com.**

RECORDING/ARCHIVING/DATA DEVICE

22. Sensoray Model 4031

The **Sensoray** embeddable HD mini stand-alone DVR **Model 4031** is an ultracompact video capture device optimized for embedding in OEM systems. It is capable of capturing analog HD and SD video (AHD, HD-TVI, HD-CVI, NTSC, PAL) with resolutions up to 1080 pixels over up to 1,000



feet of coaxial cable. It records to a micro SD card and includes mic or stereo line audio inputs and a clock/calendar with battery backup. It captures JPEG snapshots without video interruption, with real-time video overlay of date and time, and a customizable user interface. **503-684-8005; www.sensoray.com.**

SOFTWARE

23. CUES GraniteNet

GraniteNet condition assessment software for the public works industry from **CUES** is asset based, which enables the software to easily interface with other asset-based software products such as Esri ArcGIS mapping systems and asset management systems to include Cityworks, Infor, IBM Maximo and others. Intuitive and easy to use, data and video can now be accessed via a web portal. **800-327-7791; www.granite.us.com.**

24. POSM Software

POSM Software comes preloaded with an accurate and robust solution that addresses cross bores in a way that reduces risk, maximizes accuracy and verifies actions. The management tools, combined with best practices, help minimize potential issues with cross bores. Tools include a bore card data manager, where POSM can import a scan of the handwritten bore card and allow the user to input this data into a searchable database. At the same time, the user can link each inspection associated to this bore card. The user simply opens the manager and fills out the fields. A location marker for GPS maps marks cross-bore locations during a pipeline inspection that makes it easy to review and plan a proper follow-up. Multiple file attach-

ments to the same location means everything tagged as important stays attached for reference and review with the cross-bore data. **859-274-0041; www.posmssoftware.com.**

25. WinCan software

WinCan software makes it easy-to-collect, detailed, standards-compliant inspection data. It identifies trends, pinpoints hot spots, prioritizes maintenance and helps the user forecast budgets. Its broad range of reporting and data visualization tools lets the user drill down to the insight they need. It can integrate with the GIS mapping system of the user's choice or use WinCan's own mapping tools for increased capabilities. It works with all brands of sewer inspection technology, including crawlers, zoom cameras and push cameras, as well as all major applications of side scanning, laser profiling, manhole scanning and other emerging technologies. It also integrates with many municipal asset management applications. Add-on modules support emerging technologies like side scanning, laser, sonar and 3D visualization. **877-626-8386; www.wincan.com. ♦**

**This is what it would look like if we printed MSWmag.com
– THOUSANDS OF STORIES, PRODUCTS AND IDEAS.**



**Get access to everything
we can't fit in the magazine.**

Additional stories, videos, news briefs and other great information that lets you get the most out of MSW.



**MUNICIPAL
SEWER
&
WATER**
www.MSWmag.com

Product Spotlight

A new entry in the lateral cutting game

By Craig Mandli



Reinstating laterals can be an arduous process without the right equipment. And while Aries Industries has long offered many of the products used in that process — including cameras and lateral location devices — the company had never produced its own cutter.

The Wolverine 2.0 cutting system changes that.

“Our customers have worked with a variety of cutters, so we knew what they were looking for,” says Jim Kraschinsky, vice president – sales for Aries Industries. “Our goals were to build a product with a longer cable length, better controls and maneuverability within the pipe. We’re excited about the result.”

Able to operate in pipes from 6 to 18 inches, the self-propelled, electric Wolverine 2.0 offers advanced ergonomic fingertip control and the ability to cut through materials with maximum speed and precision. Its linearly adjustable speed and axis movement offer maneuverability in a variety of pipe, coupled with a compact profile and all-wheel drive to navigate tough terrain. It is also designed to be modular, with spare parts readily available for in-field serviceability.

“It’s designed to be very quick to change out parts to get it back up and

running,” Kraschinsky says. “The technicians can do the work themselves pretty easily. Our customers were looking for more productivity and uptime, so we designed the Wolverine 2.0 to be very user friendly to work on.”

With that in mind, every element of the Wolverine 2.0 is built for ease of use and maintenance. A long, 500-foot cable reduces truck setup time, saving labor and logistical costs, while its camera uses a fixed lens with field-replaceable glass. An electric two-speed milling motor is field repairable and rebuildable, while its desktop, dual joystick controller uses CANbus technology, with touch-screen display and integrated DVR and on-screen display. Multiple wheel configurations adapt to different pipe conditions, while a stabilizing lift ensures balanced operation. A built-in lens wiper and scraper keeps the camera clear while in the pipe, keeping the unit on the job longer.

“When our designers designed this unit, it was with our customers in mind,” Kraschinsky says. “The feedback has pointed to that. The techs who are already using it in the field are pretty excited. It is exactly what they wanted and hoped it would be.” **800-234-7205; www.ariesindustries.com.**



CUES LOCK no-dig sewer rehabilitation product line

CUES LOCK includes structural point repair systems designed to be used for stand-alone spot repairs or to enhance quality and simplicity of CIPP relining. The LOCK products are easy to install, require very little equipment and most repairs can be carried out in live sewer operating conditions. It does not require digging or external point repair. The line includes stents to bridge holes, voids, cracks and weakened/broken sections in pipes; structural and sealer sleeves to restore damaged areas to full structural strength and seals infiltration; and end sealers to seal the annular space between the CIPP liner and the host pipe at the pipe ends. **800-327-7791; www.cuesinc.com.**

Advanced Drainage Systems Design Tool 2.0

The Design Tool 2.0 from Advanced Drainage Systems incorporates site-specific information, creates a customized CAD layout, and provides the ability to edit and save designs for review and modification. The tool also evaluates the feasibility of aboveground pond replacement, alternative underground products, land values and usage, regulatory compliance, rainwater harvesting, stormwater quality, green infrastructure applications and more. Users can add and specify a variety of Advanced Drainage Systems products to the StormTech design, including N-12 and HP pipe products as well as Nyloplast basins and Inserta Tee lateral connections. **800-821-6710; www.ads-pipe.com.**



Water Cannon FL-ABB 200 surface cleaners

The FL-ABB 200 stainless steel surface cleaners from Water Cannon Inc. - MWBE have an added air-recovery design and hook up to pressure washers and wet vacuums for almost any cleaning requirement. The cleaners remove dirt, paint, grime and even graffiti from a wide variety of surfaces. There is no overspray or flying debris, providing a safe and clean work area. They are available in 12-inch single arm and 21- and 30-inch double arm floor models. The air recovery port will accept 2-inch vacuum hose. Floor units are standard with three or four caster wheels, and all units are rated to 240 degrees F. The professional line is ready to use with no tools required for assembly. **800-333-9274; www.watercannon.com.**



Doosan Portable Power XPI85WDO air compressor

The Doosan XPI85WDO high-pressure air compressor produces 185 cfm and 125 psi, making it ideal for a variety of applications such as general construction, sandblasting, pneumatic tool operation, pipeline testing and fiber optic cable installation. It can simultaneously power both air and electrical tools when outfitted with an optional 4 kW generator. The machine is equipped with two 120-volt duplex outlets with access on the curbside, rear panel of the air compressor. An onboard toolbox allows for convenient storage of both air-powered and electrical tools for safe transport and easy access on the job site. The XPI85WDO offers a 10-hour runtime at 100% load. **800-633-5206; www.doosanportablepower.com.** ♦



STOP I&I AND MIC!



**MORE THAN 20 YEARS OF
PROVEN PROTECTION IN SOME
OF THE HIGHEST H₂S
SANITARY SEWERS IN THE USA**

MICROBIOLOGICALLY INDUCED CORROSION (MIC)
(Hydrogen Sulfide + Thiobacillus = Damaging Sulfuric Acid)

**Rehabilitate existing systems, and protect new structures, with the only
anti-microbial additive with more than 20 years of proven protection in the field.**



REHAB EXISTING STRUCTURES



NEW READY-MIX INSTALLATIONS



NEW PRECAST STRUCTURES

Rehab with AP/M Permaform & ConShield
800-662-6465 • www.permaform.net

New Construction with ConShield Technologies
877-543-2094 • www.conshield.com

Cretex Specialty Products hires new Northeast regional manager

Cretex Specialty Products announced that Scott Shipe has joined the management team as regional manager. He will oversee sales and marketing elements for the company, expand product specifications for promotional efforts to engineers and municipalities, provide support for contractors and further develop the distributor network in the Northeast. Shipe has over 30 years' experience in the water and sewer industry. He previously held positions at Hydra-Stop, O'Brien & Gere, and Frederick County, Maryland.



Scott Shipe

Granite Construction acquires assets of Lametti & Sons

Granite Construction announced that it has acquired certain assets of Lametti & Sons, a Minnesota-based company with expertise in CIPP rehabilitation and trenchless renewal. Lametti & Sons is one of the original certified installers of the Inliner CIPP product. As part of this transaction, Granite acquired assets and equipment related to Lametti & Sons' CIPP business.

GapVax launches new website

GapVax announced it completed its rollout of a new website. The site design is mobile responsive and works on a variety of screen sizes, from smartphones and tablets to traditional desktop computers. The improved www.gapvax.com contains concise product information and easy-to-use navigation; conversational quoting process; more useful tools for those who

shop for and own GapVax products and services; a product-centric focus on helping users accomplish key activities such as identifying the right machine for their use or locating a dealer; and easy spec-to-spec comparisons across GapVax models. The site features 20 new pages and hundreds of full-screen images of GapVax products.

Tesco Controls acquires Trimax Systems

Tesco Controls announced that it has acquired Trimax Systems for an undisclosed sum. Trimax is a Southern California-based systems integrator serving the water and wastewater markets and is also a leader in the utility, solar and renewable environmental energy industries. Trimax will continue to provide systems integration services under the name Trimax, a Tesco Controls Co. Tesco Controls' current CEO, Shain Thomas, will serve as CEO for both entities. The current Trimax executive team will stay on after the transaction. The combined company will now have 13 locations in the continental U.S. and Hawaii.

Madewell Products hires Donald Rigby

Madewell Products announced that Donald Rigby has joined the company. In a newly created position, Rigby will drive education and engagement within new and existing contracting partners, engineers and owners. Formerly vice president of Marketing and Education with Avanti International, Rigby will continue active participation in NASSCO, the North American Society for Trenchless Technology and the Water Environment Federation organizations.



Don Rigby

Pipe Lining Supply celebrates 15th anniversary

Pipe Lining Supply is celebrating its 15th anniversary. The company was founded on Jan. 1, 2004, by Linda Heisler. Her primary focus was the CIPP industry in the California area. Two years later, her husband, John Heisler, joined the company, bringing expansive knowledge of the industry including CIPP lateral lining, pipe bursting, horizontal directional drilling, pipe coating, sewage lining, open cut and cover, and water and sewer utility work. In 2017, the company introduced its AIPPR Quik-Coating System, designed for drain, waste and vent piping. The company has also expanded its market nationwide, and its team includes technical experts across the U.S.

Specialty Products joins the VersaFlex family of specialty coatings companies

Specialty Products has joined the VersaFlex family of companies. Headquartered in Lakewood, Washington, Specialty Products is a leading manufacturer of specialty polyurea and polyurethane coatings with over 45 years' experience formulating high-performance solutions. Specialty Products joins VersaFlex, Raven Lining Systems, Milamar Coatings, Bridge Preservation and Vanberg Specialized Coatings as part of a growing portfolio of specialty coating solutions across an array of markets and industries.

Felling Trailers announces 2019 Trailer for a Cause beneficiary

Felling Trailers has selected Children's Cancer Research Fund as its 2019 Trailer for a Cause auction beneficiary. Felling Trailers will be hosting its seventh annual Trailer for a Cause online auction of an FT-3 utility trailer to benefit the nonprofit organization. Felling Trailers' goal is to bring awareness to various nonprofits that are making a difference by donating 100% of the winning bid from the auction to a different nonprofit each year. ♦

RAISING AMERICA
AHP
ONE INCH AT A TIME

AMERICAN HIGHWAY PRODUCTS LTD.
RAISING AMERICA, ONE INCH AT A TIME

PIVOTED TURNBUCKLE MANHOLE RISER

The Most Efficient and Powerful Expanding Riser on the Market.

Riser heights 3/4" and up in all diameters. 1" diametric variance and DOT approved in most states.

Made in the USA

INCLINED MANHOLE RISER
Now you can raise and tilt the manhole cover to match the grade of the road surface.

Manhole Safety Ramp

Sewer Lid Seal Kit

Solid Rubber Adjusting Ring

Toll Free 1-888-272-2397 • www.ahp1.com • e-mail: sales@ahp1.com • Free Video/CD ROM

DRAIN/SEWER CLEANING EQUIPMENT

Used and rebuilt cable machines in stock: RIDGID K-7500, K-40, K-60, K-1500, Spartan #1064, #300, #100, Electric Eel model #C machines. The Cable Center: 800-257-7209. (CBM)

MISCELLANEOUS

DBE SUBCONTRACTING OPPORTUNITIES

South Coast Water District Sewer Tunnel Stabilization and Pipeline Replacement Project — South Coast Water District, located in Laguna Beach, California will be releasing a construction bid for Phase 3 of its "Tunnel Stabilization and Sewer Pipeline Replacement Project". This Project is funded by a loan from the Clean Water State Revolving Fund (CWSRF) Program. As such, State and Federal Requirements including Disadvantaged Business Enterprises (DBE) participation and Davis-Bacon prevailing wages (California, if California wages are higher) apply to the project. Categories for DBE subcontractor and supplier opportunities include concrete and shotcrete, rebar and structural steel, sewer pipe, spoil and waste hauling, surveying, security, and office supplies. Under the SRF Loan requirements, Contractors bidding on the District's project must demonstrate a good faith effort to hire DBE firms. Please note, DBE firms will not be contracting directly with the District. To learn more about the Project and the contractors approved to bid on the Project, you can visit the District's website at SCWD.org/bids, to register and view information. You can also email questions to mgeer@scwd.org. (M08)

PIPELINE REHABILITATION



2012 cementitious manhole lining trailer with 3,000psi pressure washer and high-speed, air-powered mortar turbine spinner head. \$45,000

Call Scott 660-281-7950 M08

POSITIONS AVAILABLE

GapVax, Inc., a nationally recognized manufacturing business, is seeking a talented, highly motivated individual to fill a full-time Sales Position in the Midwest (Iowa based preferred) region. GapVax is the leading manufacturer of industrial and municipal vacuum units and hydroexcavation units in the United States. We provide the most reliable, comprehensive, and efficient mobile vacuum units in the industrial and municipal markets. Specifications of the position are listed on our website, www.gapvax.com, click on the Now Hiring link in the left hand column. Send resumes to or betty@gapvax.com or 575 Central Avenue, Johnstown, PA 15902. (MBM)

RENTAL EQUIPMENT

Liquid vacs, wet/dry industrial vacs, combination jetter/vacs, vacuum street sweeper & catch basin cleaner, truck & trailer mounted jettors. All available for daily, weekly, monthly, and yearly rentals. **VS Rentals, LLC, (888) VAC-UNIT (822-8648) www.vsrentalsllc.com.** (CBM)

SERVICE/REPAIR

Dynamic Repairs - Inspection Camera Repairs: 48 hour turn-around time. General Wire, Ratech, RIDGID, Electric Eel Mfg., Gator Cams, Insight Vision, Vision Intruders. Quality service on all brands. **Rental equipment available.** For more info call Jack at 973-478-0893. Lodi, New Jersey. www.dynamicrepairs.biz (MBM)

TV INSPECTION

NEED TRACTION? We make aftermarket gritted/gripping pads for all chain-driven camera transporters. Custom fabrication secured to a high-quality, nickel-plated carbon-steel chain that doesn't stretch. Also have non-gritted pads, wheels, and tires for all different brands. Pad samples upon request. **Pipe Tool Specialties LLC:** Phone 888-390-6794; Fax 888-390-6670; Visit us online at pipetoolspecialties.com or email pts4422llc@gmail.com (MBM)

USED EnviroSight ROVER Sewer Inspection Crawler: Overhauled with new parts and ready to run. Includes automatic cable reel, pan/tilt/zoom camera, steerable 6-wheel-drive tractor with various wheel sets, controls, and accessories. Call for pricing 973-252-6700. (MBM)

CAMERA OPERATORS, STOP SPINNING YOUR WHEELS IN GREASY PIPE! Aftermarket gritted polymer wheels, steel carbide wheels, gritted and treaded tracks, tow cables, kiel sticks and more. Fitting Aries, CUES, EnviroSight, Ibak, Rausch, RST, Schwalm & IDTec. **ORDER TODAY** at www.TruGritTraction.com; info@trugrittraction.com; 407-537-0746 (MBM)



Pressure Washers & Drain Jetting Equipment

We Custom Build Machines To Your Specifications!

800-648-5011

www.camspray.com

sales@camspray.com

Van and Truck Mount Models Available
See All The Features And Specifications At CamSpray.com

STB Series Trailer-Mounted Drain Jets



- DC-Powered Jet Hose Reel and 4-Nozzle Set
- Pressure Gauge & Hour Meter
- Electric Start with Low Oil Shutdown
- Pumps Handle Fluids Up To 160°
- Lockable Tool and Storage Boxes
- 150' Garden Hose on Manual Reel
- 300 Gallon Tank with Low Water Shut Off
- Gearbox Drive Triplex Plunger Pump with Ceramic Plungers and Stainless Valves
- Trailer with Industrial Painted Finish and 15" Aluminum Wheels

STB4012K \$21,699
• 12 G.P.M. @ 4000 PSI
• 999 CC Kohler • 400' x 1/2" Hose

STB3015K \$20,999
• 15 G.P.M. @ 3000 PSI
• 999 CC Kohler • 400' x 1/2" Hose

STB2712K \$15,399
• 11.5 G.P.M. @ 2700 PSI
• 689 CC Honda • 400' x 1/2" Hose

STB3708K \$14,999
• 8 G.P.M. @ 3700 PSI
• 689 CC Honda • 300' x 3/8" Hose

STB4007K \$12,999
• 7 G.P.M. @ 4000 PSI
• 689 CC Honda • 300' x 3/8" Hose



TT4025HZ-35 \$55,399

- Produces 25 Gallons Per Minute at 4000 PSI
- 74 HP EPA Tier 4 Final Compliant Hatz Turbo Intercooled Diesel Engine
- Hydraulic Slide Out Swivel Reel with 500' x 5/8" Hose
- Air Purge Valve and 18 Gallon Anti-Freeze Tank and Freeze Protection
- Heavily Constructed Trailer with 2" x 4" Steel Tube Box Frame
- 26 Gal Fuel Tank Gives Hours of Run Time on a Single Fill
- Wireless Remote to Control Throttle Up and Down, Water Valve and More
- 350 Gallon Tank with 2" Hydrant Fill
- Features 150' Wash Down Hose and Front-mounted & Over-fender Tool Boxes

GET
EMAIL NEWS
ALERTS FOR

MUNICIPAL
SEWER
&
WATER

Go to
mswmag.com/alerts
and get started today!

PEOPLE/AWARDS

Jade Dunhour has been hired as the diversity, outreach and employment resources program manager for the borough of Chambersburg, Pennsylvania. She is tasked with creating a diverse pool of future local leaders and employees, including those in the stormwater sector.

OptiRTC, which makes a cloud platform for stormwater management, hired **David Rubinstein** as its CEO. Rubinstein served as its president and chief operating officer since he joined the Boston company in January 2018.

Jennifer Drake, civil engineering assistant professor at the University of Toronto, received the Engineers Canada Young Engineer Achievement Award. Drake and her team of researchers consult with cities, conservation authorities and the private sector to introduce “low impact development” systems using such integrated tools as green roofs and permeable pavement as an alternative to traditional stormwater solutions.

Lance Overstreet was hired as city engineer for the city of San Angelo (Texas), having previously served as assistant director of the city’s Water Utilities department and as assistant city engineer. He also worked for the city as a stormwater engineer and a project engineer.

The Chesapeake Bay Foundation presented **State Sen. Emmett Hanger** of Virginia with a 2019 Legislator of the Year award. Hanger helped ensure

continued investment in the Stormwater Local Assistance Fund, which supports small and large counties and cities that put in projects to reduce polluted runoff from developed areas.

The **New Castle County Department of Public Works** received a Conservation Award for the Westwoods Stormwater Management Pond Upgrade near Hockessin. The honor was presented as part of the Delaware Governor’s Agricultural and Urban Conservation Awards.

Clean Lake Union and **Salmon-Safe** received a Green Globe Award from King County (Washington) for partnering with Mark Grey of Stephen C. Grey & Associates on a project to treat 2 million gallons of polluted stormwater runoff flowing annually from the Aurora Bridge into the Lake Washington Ship Canal, where it impacts the health of migrating salmon and other aquatic species before flowing through the Ballard Locks into Puget Sound. The team designed and built rain gardens and bioswales on nearby land with funding from Boeing, technical and design services by KPFF and Weber Thompson, and outreach support from The Nature Conservancy in Washington.

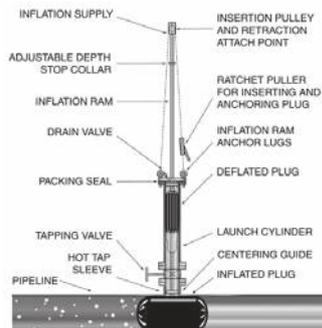
Sheila Kuehl, Los Angeles County supervisor, received a Bring Back the Beach Award from environmental group Heal the Bay. Kuehl was honored for, in part, championing Measure W, a ballot measure that will generate \$330 million annually to fund projects that capture stormwater, treat runoff and replenish the local water supply. ♦

Petersen® Pipe Plugging Systems



Pipe Plugs and Packers for all your Pressure, Chemical, and Temperature Requirements. Call us to quickly customize a pipe plug or plugging system for your specific application.

Economical Hot Tap Plugging Systems



www.pipeplug.com

Petersen PRODUCTS COMPANY
Serving Professionals Since 1916

PHONE 800.926.1926 OR 262.692.2416
FAX 262.692.2418

CALENDAR

Aug. 18-22

StormCon 2019, Hyatt Regency hotel, Atlanta. Visit www.stormcon.com.

Sept. 8-11

American Public Works Association Public Works Expo (PWX), Washington State Convention Center, Seattle. Visit www.apwa.net.

Sept. 9-11

National Rural Water Association WaterPro Conference, Nashville, Tennessee. Visit www.nrwa.org.

Sept. 21-25

Water Environment Federation Annual Technical Exhibition and Conference, McCormick Place, Chicago. Visit www.weftec.org.

Oct. 9-13

American Society of Civil Engineers Annual Conference, Miami. Visit www.asce.org.

Oct. 20-23

American Water Works Association Water Infrastructure Conference & Exposition, Hyatt Regency at The Arch hotel, St. Louis. Visit www.awwa.org.

Nov. 3-7

American Water Resources Association Annual Water Resources Conference, Sheraton Hotel, Salt Lake City. Visit www.awra.org.

March 23-26

American Water Resources Association Geospatial Water Technology Conference, DoubleTree by Hilton, Austin, Texas. Visit www.awra.org.

May 19-22

American Public Works Association North American Snow Conference, Salt Palace Convention Center, Salt Lake City. Visit www.apwa.net.

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

DYE TRACERS

Solutions for:

- Infiltration
- Septic Systems
- Cross Connection
- Leaks and more...





BRIGHT DYES

Division of Kingscote Chemicals

www.brightdyes.com • 1-800-394-0678

Coming In September

MUNICIPAL
SEWER & WATER
BUYER'S GUIDE

A complete listing of all manufacturers and suppliers of sewer, water and stormwater equipment
mswmag.com



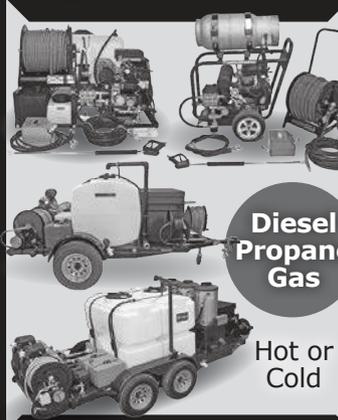
= Thank You!

Hand-selected Wisconsin sausage and jerky delivered in a 20-qt. **RUGID** cooler.

\$199.99 Delivered

Meaty-Delivery™
meaty-delivery.com
833-777-8443

Let Us Build Your JETTER



AMERICAN JETTER.COM
866-944-3569

Superior SMOKE

For SEWER TESTING

Superior Smoke Fluid Systems
Smoke Candles • Smoke Blowers



Superior Smoke Testing
The Most Cost Effective Method to Find Sources of Surface Inflow

SuperiorSignal.com/MSW

Durable Gear for Extreme Conditions



SNOW

SAND

SURF

SKY

SLATE

COLOR OPTIONS

CAM LOCK LATCHES

100% REPLACEABLE PARTS

5 YEAR WARRANTY

MAXIMUM ICE RETENTION

RUGID 833-777-8443 RUGIDGear.com



PATENT #US 8,273,162

IndustrialOdorControl.com

A Broad and Economical Range of Odor Control Solutions

- Manhole Odor Inserts
- Lift Station Odor Control
- Pollution Control Barrels
- Septic Vent Filters
- Activated Carbon
- Custom Solutions

Simple Solutions DISTRIBUTING LLC 866-NO-STINK (866-667-8465)
973-846-7817 in NJ
Makers of the Wolverine Brand of Odor Control Solutions

RAT OUT YOUR ROOT PROBLEMS



- Uniquely designed to make short work of big sewer line headaches.
- Interchangeable heads.
- Use the chain rotor for major obstructions and the cable rotor for less aggressive problems.

3/8", 1/2", 1" nozzles come in kit form.

ROOT RAT NOZZLES 330.874.4300
Patented • Made in USA • www.rootrat.net

Now That's Smokin'!

Tests up to 7500 cubic feet of pipe per minute

Turbo Fog MH75

• Easy • Cost Effective • Compact •



TURBO-FOG
1.800.394.0678 www.turbo-fog.com

Green Bison heavy duty degreaser

Superb product for grease control in collection systems. Emulsifies grease, improves high pressure cleaning performance. Highly recommended for cleaning/degreasing of tools, equipment and machinery. With Green Bison you do not have to trade efficiency for safety. Green Bison is a certified environmentally responsible product that utilizes natural and bio based ingredients, delivers industrial strength cleaning power while keeping your cost down.

Call us today 866-366-0587



This product meets the Green Seal™ standard for cleaning/degreasing agents based on its reduced hazard to humans, reduced aquatic impacts, reduced smog production, and low ozone depletion potential.

safe-tee chemical
safetechemical.com

THE ONLY HEAVY METAL SHOW YOU NEED TO SEE



**NORTH AMERICA'S LARGEST
CONSTRUCTION TRADE SHOW**
CONEXPOCONAGG.COM
MARCH 10-14, 2020 | LAS VEGAS, USA



OPEN HOUSE • SEPT 26 • JOHNSTOWN, PA



GapVax®

Combo JetVacs • Recycle JetVacs
Hydro Excavators • Air Movers
Jetters • Skid Mounted Vac Units
Parts & Accessories

#BESTTRUCKSINTHEBUSINESS

30 SAME
OWNER
UNMATCHED
QUALITY
YEARS SUPERIOR
PERFORMANCE

888-442-7829 Johnstown, PA

281-884-8658 La Porte, TX

www.gapvax.com

Functional FLEXIBILITY

Your day-to-day work changes.
Your equipment shouldn't have to.

VAC·CON RECYCLER



A true combination machine provides you with a choice depending on the job at hand. Vac • Con® combination machines are now available with an optional Water Recycling package to allow you more time, efficiency, and flexibility at the jobsite.



BOOTH #834 **AUG**
the **Water** **28**
expo **29**
In MIAMI!

Find Your Dealer!

www.vac-con.com/dealer-search/



VAC·CON

Schedule Your Demo

904.284.4200