

MUNICIPAL

SEWER
&

WATER™

FOR SANITARY, STORM AND WATER SYSTEM MAINTENANCE PROFESSIONALS

May 2022

www.mswmag.com

TECH TALK: THE RIGHT TOOLS TO
OPTIMIZE CLEANING OPERATIONS

PAGE 16

HUMAN SIDE: GETTING COMFORTABLE
WITH WORKPLACE CANDOR

PAGE 20

FEATURE: MODELING CLIMATE'S IMPACT
ON WATER RESOURCES

PAGE 22

PUMPS
DIRECTORY

PAGE 26

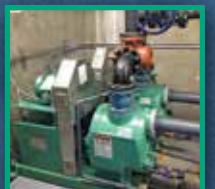
FLUSHING COMPLAINTS AWAY

Massachusetts utility
boosts water quality
with a carefully
executed treatment
and flushing plan

PAGE 12

Dan Rowley
Water & Sewer Superintendent
Shrewsbury, Massachusetts

PRODUCT FOCUS:
PUMPS, LIFT STATIONS AND CONVEYANCE



INSIGHTS DELIVERED INSTANTLY

QUICKVIEW

GET THE BIG PICTURE

Quickview airHD's high-powered zoom optics make it the perfect tool to assess your collection system. Lower into a manhole to rapidly prioritize CCTV, cleaning and rehab activities—and make better use of precious resources. Get instant insight on emergency callouts, as well as pre- and post-cleaning sewer assessments.

Ready for a demo? Scan here:

Learn more at envirosight.com/quickview



PRECISE

Fine-tune your view with remotely adjustable camera tilt and height.



WIRELESS

An app-based interface lets you stream and record HD video, and control zoom, illumination and tilt.



PORTABLE

Quickview fits in a pickup, deploys rapidly and can be operated by a single user.



(866) 936-8476

[ENVIROSIGHT.COM](https://envirosight.com)

©2021 Envirosight



A single source for your fluid solutions.

As the largest provider of both rental equipment and fluid solutions in North America, United Rentals can help you if you need one piece of equipment or a custom-engineered solution. We have pumps, tanks, filtration systems and experts who are ready to serve all your project needs.

Visit **UnitedRentals.com/Fluid** or call **800.UR.RENTS** for all your fluid solution needs.



CONTENTS

ACE PRE-SHOW ISSUE

PUMPS, LIFT STATIONS AND CONVEYANCE



ON THE COVER: Water & Sewer Superintendent Dan Rowley and his team have improved water quality in the Town of Shrewsbury, Massachusetts, with a comprehensive unidirectional flushing program. (Photography by Scott Eisen)



COMING IN JUNE 2022

ACE Show Issue, Manhole Equipment and Rehabilitation

- ◆ TECH TALK: The Costs of Uneven manholes
- ◆ SPECIAL: Stormwater management for specific objectives
- ◆ HUMAN SIDE: Handling the resident slacker

FEATURES

12 SEWER: Flushing Complaints Away

Massachusetts utility boosts water quality with a carefully executed treatment and flushing plan.

By Ken Wysocky

22 SPECIAL: Predicting Future Supply

Research aims to model climate's impact on water resources.

By Tim Dobbins

28 WATER: Growing With the Community

Operational improvements and a collaborative approach drive Westminster's quest for distribution system optimization.

By Andrea Song

COLUMNS

8 FROM THE EDITOR: Bless the Rains

Climate data can help forecast future water supplies and adjust distribution plans.

By Luke Laggis

10 @mswmag.com

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

16 TECH TALK: Optimize Cleaning Operations

Using the correct accessories will improve cleaning performance while minimizing water use.

By Del Williams

20 HUMAN SIDE: Getting Comfortable with Candor

While truth bombs can hurt, everyone benefits from honest feedback.

By Ken Wysocky

26 PUMPS DIRECTORY

32 NASSCO CORNER: Presenting Policy Recommendations

NASSCO's D.C. Fly-In events gaining traction with important members of Congress.

By Sheila Joy

34 PRODUCT FOCUS: Pumps, Lift Stations and Conveyance

By Craig Mandli

38 CASE STUDIES: Pumps, Lift Stations and Conveyance

By Craig Mandli

40 PRODUCT NEWS

Product Spotlight: Lateral launch crawler quickly locates cross bores.

By Craig Mandli

42 INDUSTRY NEWS

44 WORTH NOTING

People/Awards; Calendar

RADAR IS THE BETTER ULTRASONIC



\$693

VEGAPULS C 11

- Accuracy and reliability meet affordability
- Easy Bluetooth setup via the VEGA Tools app for smart devices
- Optional remote display available

All advantages of the radar technology:
www.vega.com/vegapuls

SAFE, SMOOTH BEVELS

BEVEL BOSS™ CORDLESS PIPE BEVELERS



- **Cut** a safe, adjustable length, smooth bevel
- **Eliminate** guesswork with guide plate
- **Reduce** prep time by quickly and consistently beveling for multiple cuts
- **Options** for DeWalt®, Milwaukee® or Bosch® die grinder adapters

CPBDK

RBIT2



PIPE TOOLS & VISES
SINCE 1896

Reed Manufacturing • Erie, PA USA
reedsales@reedmfgco.com
800-666-3691 • www.reedmfgco.com



ADVERTISER INDEX

COMPANY PAGE



American Highway Products, Ltd. 46



AMT Pump Company.....39



Applied Felts, Inc..... 17



Cam Spray 25

Composite Access Products (CAP)45

Crane Pumps & Systems23

Cretex Specialty Products 38

CrewPlex37



CUES 11, 25



Envirosight LLC2



Enz USA Inc.37

Fromatic Valves.....33



GapVax, Inc.47



Gorman-Rupp Company.....9

COMPANY PAGE

Hermann Sewerin GmbH24



InfoSense, Inc.8

No-Dig Show.....42

Patterson Manufacturing43



RapidView IBAK North America7

Reed Manufacturing.....6

RELINER/Duran Inc.33

Specialty Maintenance Products, Inc..45

Sprayroq, Inc. 19



T&T Tools, Inc. 18

United Rentals, Inc.3



Vactor Manufacturing.....48

Vaughan Company, Inc.21

VEGA Americas, Inc.5



Wachs Utility Products36

CLASSIFIEDS.....44

MARKETPLACE 46



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 2022, 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 Holly at holly.gensler@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*, PO 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 Holly Gensler at 800-257-7222 (715-546-3346) or email holly.gensler@colepublishing.com. To order reprints, call Jeff Lane at 800-257-7222 (715-546-3346) or email jeff.lane@colepublishing.com.

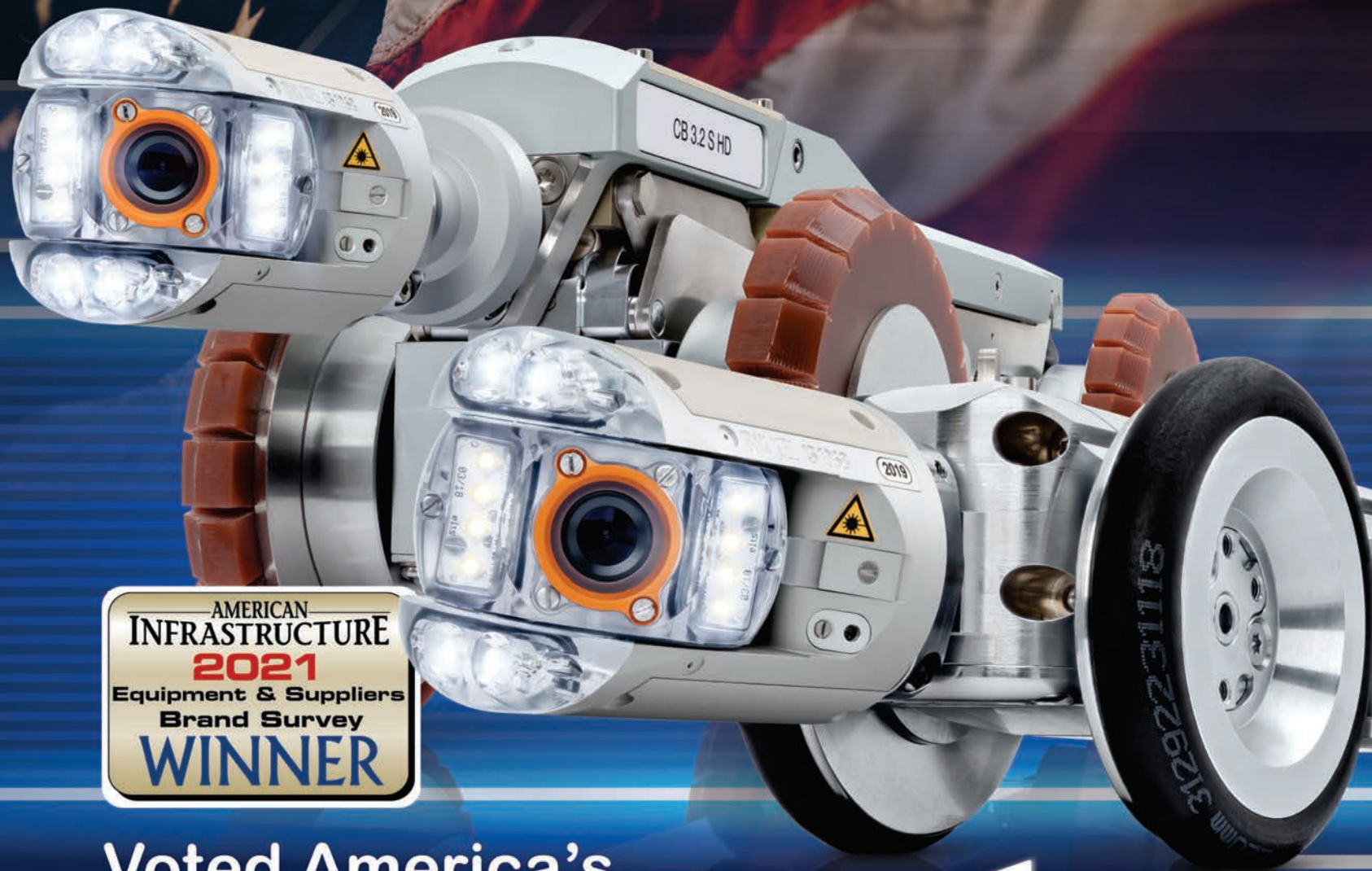
CONTROLLED CIRCULATION: 30,000 copies per month (U.S. and international distribution).



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



SUBSCRIBE TO
MSW FOR FREE!
Sign up at mswmag.com



Voted America's best camera supplier 5 years in a row!

Let us show you what over 60 years of innovation and commitment to quality can do for you! Since IBAK invented the sewer camera in 1957, we have always put the customer first. Contact us to learn more about the industry's broadest line of inspection and rehabilitation equipment, and to let us show you how **QUALITY MAKES THE DIFFERENCE!**

Sourcewell
Formerly NJPA
Awarded Contract

RapidView
IBAK North America

Push | High Def | Mainline | Lateral Launch | 3D Mapping | PANO 4K Scanner | Rehabilitation | Software
(800)-656-4225 | www.rapidview.com | Quality Makes the Difference.

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



Luke Laggis

BLESS THE RAINS

Climate data can help forecast future water supplies and adjust distribution plans.

I live in northern Wisconsin. I'm plenty familiar with snow and cold weather. Freezing rain comes around once in a while, too. But until my local meteorologist explained how it happens on the late news the other night after an unpleasant day of weather, I really had no idea.

If you're unaware, snow forms at a higher altitude and falls. On its way to the ground it passes through a warmer layer of air and melts, but then refreezes as it reaches the ground. Simple, but I'd never really given it much thought.

Precipitation has a significant impact on the work you do, both

positive and negative, but I doubt many people give that much thought either. It funnels through your stormwater systems, causes combined sewer overflow and creates unnecessary treatment costs, but it also irrigates and replenishes surface water sources. It's the latter that ties directly to a special feature in this month's issue about a study that's happening in Kansas, creating models to predict future water availability.

Researchers at the University of Kansas School of Engineering are set to begin a two-year project aimed at creating models using projected climates to help state officials better allocate water. The research aims to expand current models that are

largely based on data recorded during a 1950s drought in an effort to show different climate projections' direct impact on evaporation and streamflow. Ideally it will help with future water allocation decisions in Kansas.

The project is localized to the central and eastern portions of Kansas and incorporates six river basins, 21 reservoirs, 51 inflows and 163 sources of consumptive water use. These new models will compare multiple emission scenarios along with responses from the land, ocean and atmosphere.

Though this work will focus on Kansas specifically, the strategy and end results may benefit municipalities across the country. One of the goals is to inspire municipalities to use climate data in planning for different scenarios, and to show other states and regions an approach for forecasting future water supplies and adjusting water distribution plans.

We talk often in *MSW* about the need to take a proactive approach to utility planning and improvement, and it's hard to imagine a more proactive approach to planning for the future than this. Preparing allows you to respond rather than react.

While I learned a little something from that weather report I mentioned, forecasts are far from guarantees, especially the further out they range. You can plan for a sunny day if that's what the forecast calls for, but you'd be a lot better off if you're also prepared for rain. And since it's impossible to know what the future holds, careful consideration of all the possibilities can make your utilities and communities stronger.

I hope you enjoy this month's issue. ♦

You can plan for a sunny day if that's what the forecast calls for, but you'd be a lot better off if you're also prepared for rain.

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

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



The Pump People®

WATER PRESSURE REQUIRE A BOOST?

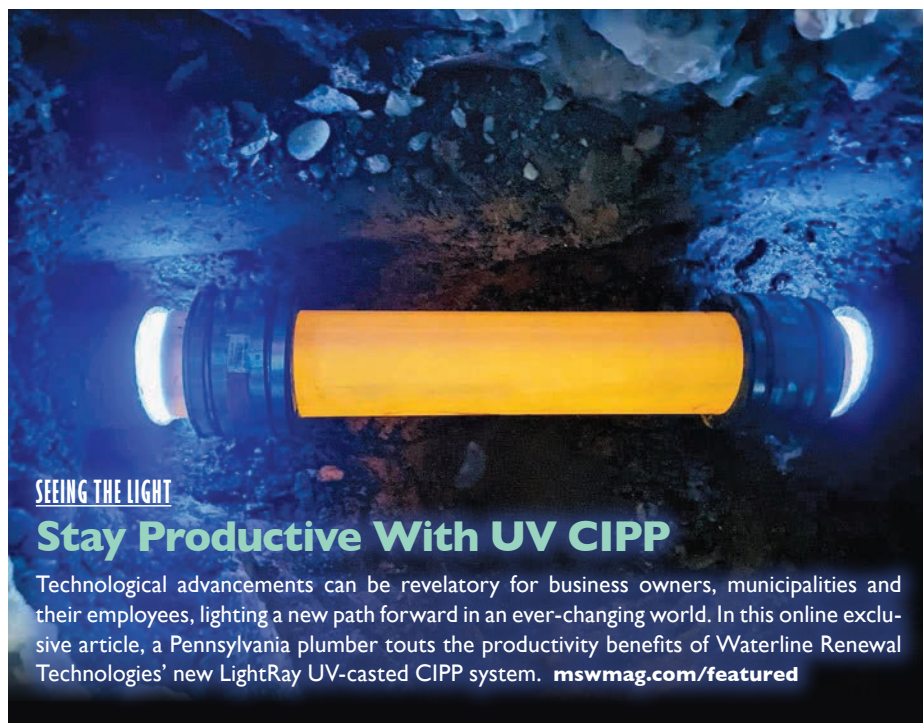
GORMAN-RUPP WILL PUMP YOU UP.

The Complete Package. Gorman-Rupp offers a complete line of packaged systems for boosting low line water pressure. This means faster, trouble-free installation and overall project savings. Our Reliasource® line of packaged, above- and below-ground booster and water reuse stations come with a 5-year warranty, eliminate costly service interruptions and deliver trouble-free performance you can rely on. Guaranteed.

For more information, call Gorman-Rupp at 419-755-1011 or visit GRpumps.com to find a distributor near you.

RELIA/SOURCE™

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



SEEING THE LIGHT

Stay Productive With UV CIPP

Technological advancements can be revelatory for business owners, municipalities and their employees, lighting a new path forward in an ever-changing world. In this online exclusive article, a Pennsylvania plumber touts the productivity benefits of Waterline Renewal Technologies' new LightRay UV-casted CIPP system. mswmag.com/featured

OVERHEARD ONLINE

“California needs to refocus its water supply strategy and bolster recent state investments to help ensure we are better prepared for this ongoing drought and for droughts to come.”

— **Utilities Group Comments on California Drought Conservation Order**
mswmag.com/featured



LAGOON DRAINING

‘Sea Dragon’ Unearthed

The routine draining of a lagoon in Britain recently exposed the remains of a Jurassic reptilian sea-dweller called the ichthyosaur — colloquially known as the “sea dragon.” The dinosaur fossil was discovered during preparation for re-landscaping and regrading islands in the United Kingdom’s Rutland Water Nature Reserve. mswmag.com/featured



WATER PRIZE WINNERS

Faster Lead Pipe Replacement

The Environmental Policy Innovation Center recently announced the winners of its Water Data Prize, demonstrating how lead pipes across America can be replaced quickly and equitably to ensure access to safe, clean drinking water. More than 50 organizations and individuals submitted entries aimed at effectively replacing lead water pipes. mswmag.com/featured



Join the Discussion

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



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.



*Compact, easy-to-use
pipeline inspection system
for pipe sizes ranging from
6" - 200"*

INSPECT PIPELINES IN ANY LOCATION



CUES WIRELESS BASE STATION PORTABLE PIPELINE INSPECTION SYSTEM

- Mount in an ATV, pick-up truck, trailer, or van to access easements and hard-to-reach areas
- Provides maximum protection via an enclosed video inspection system
- Operates all CUES transporters, cameras, and video cable reel functions to accommodate 6"-200" CCTV pipeline inspections
- Heavy duty welded lifting eyelets and forklift skids are provided for quick deployment to the host vehicle

CUES 



800.327.7791

salesinfo@cuesinc.com | www.cuesinc.com

FLUSHING COMPLAINTS AWAY

Massachusetts utility boosts water quality with a carefully executed treatment and flushing plan

By Ken Wysocky

To combat a long-standing water-quality problem, the Town of Shrewsbury Water and Sewer Division in Massachusetts recently completed a comprehensive unidirectional flushing project aimed at removing manganese from its water mains.

The roughly \$800,000 project, funded by water revenues, started in December 2019 and was completed in November 2021. It's the latest in a series of steps the utility has taken over the years to remove manganese from the town's drinking water, says Dan Rowley, water and sewer superintendent for the town, located about 35 miles west of downtown Boston.

The pandemic caused some project delays, Rowley notes. But the flushing program, which uses large quantities of water, also stopped during summers for fear the town's wells wouldn't be able to keep up with the extra demand during the peak-use months.



PROFILE:

Town of Shrewsbury
Water and Sewer
Division, Shrewsbury,
Massachusetts

SERVICE AREA:

About 22 square miles

WATER INFRASTRUCTURE:

207 miles of water mains, 11,500 service connections, 38,000 people served; eight gravel-packed wells, 1,538 fire hydrants, treatment plant handles an average of about 3.3 to 3.5 million gallons per day

SEWER INFRASTRUCTURE:

About 170 miles of sanitary sewer lines, roughly 4,430 manholes, 38 pumping stations, sewage treated by two regional facilities

DAILY WASTEWATER TREATMENT:

About 3.5 mgd

EMPLOYEES:

14

WEBSITE:

www.shrewsburyma.gov/287/Water-Sewer-Division

Jonathan Gonzalez-Rosario, an operator with local contractor Hydra Tech, checks the water pressure while flushing a fire hydrant in Shrewsbury, Massachusetts. The town contracted Hydra Tech to carry out its unidirectional flushing project. (Photography by Scott Eisen)

A local contractor, Hydra Tech, performed the flushing, using a plan developed by Tata & Howard, a firm that's been the utility's consultant since the 1990s. The high-velocity flushing scoured away manganese lining the pipes, as well as tuberculation.

"We used an outside contractor because we'd never done a flushing program before," Rowley says. "We also had no idea about the condition of the water main valves, so we needed a contractor with flushing experience and that could repair any damaged valves."

The water system features about 207 miles of mains, mostly made of asbestos cement, ductile iron and PVC pipes. It includes more than 11,000 service connections and serves about 38,000 people. Water is supplied by eight gravel-packed wells that pump groundwater. The wells vary in depth from 40 to 70 feet; they're located in the northwestern section of the town, near Lake Quinsigamond.

High levels of manganese

Manganese is a naturally occurring mineral that's prevalent in New England. It's found in rocks, soil and groundwater. While it's an essential mineral for proper nutrition, it can be harmful in elevated concentrations.

The U.S. Environmental Protection Agency and the Massachusetts Department of Environmental Protection established an "aesthetics-based" secondary maximum contaminant level for manganese of 50 parts per billion. When manganese concentrations exceed the 50 ppb level, it can produce discolored water, which was the case in Shrewsbury, Rowley says.

The town has been dealing with manganese since around 1990. It typically turns drinking water brown or black and can stain clothes and kitchenware. It can also carry an odor and make the water taste bad.

"On the technical side, manganese may build up in pipelines, pressure tanks, water heaters and the like, reducing the effective size of pipes, requiring more frequent replacement and increasing the operation and maintenance costs due to the extra power needed to pump water through smaller pipes," according to a town report.

Chemical solution

To deal with the manganese, the utility started injecting a chemical blend of half polyphosphates and half

orthophosphates into the water system in the 1990s, using a chemical pump at the town's water treatment plant. The phosphates prevent the manganese from oxidizing and keeps it in soluble form.

"That worked for many years, so we didn't have to take action," Rowley says. "But the levels slowly crept up and eventually, it would break off in the pipes, which created significant water quality issues."

"Around 2014 and 2015, we started to receive complaints about discolored water," he adds. "In 2016, we had one water quality report with manganese levels at 500 ppb. So we had to do something to remove the manganese."

Rowley believes the increased manganese levels might have stemmed from using different wells as the town's primary well. A severe drought in 2016 and 2017 also likely raised levels in the groundwater.

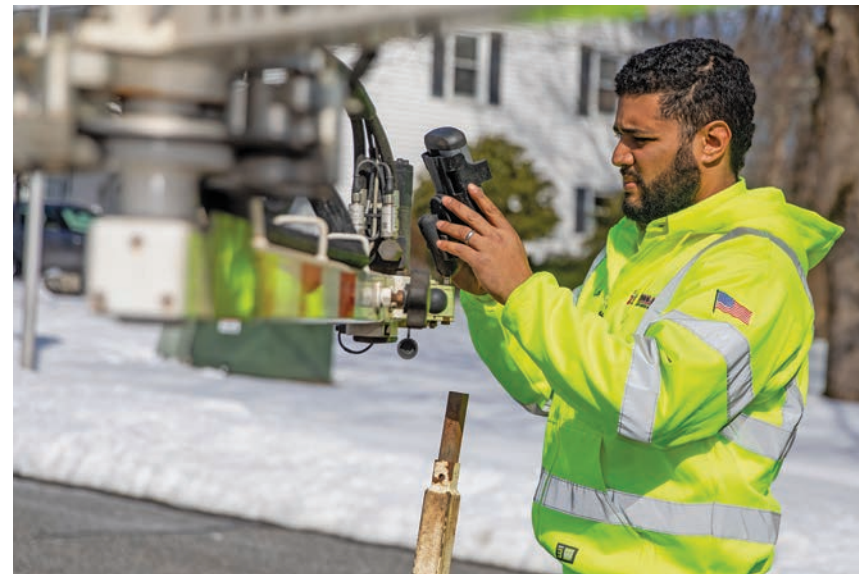
"Droughts can significantly change the pumping level or height of water in a well," Rowley notes. "When a drastic change in the well level occurs, mineral concentrations can change significantly."

"When a drastic change in the well level occurs, mineral concentrations can change significantly."

Dan Rowley

New treatment plant

After considering different options, the utility decided to build a \$12



Top: Jonathan Gonzalez-Rosario exercises a water valve using a Wachs Utility valve maintenance system in the roadway in Shrewsbury.

Bottom: Joseph Kennedy from the Shrewsbury Water Department watches as Gonzalez-Rosario folds in the boom arm on his work truck after checking the water valve.





Jonathan Gonzalez-Rosario attaches a hose to a fire hydrant before flushing a segment of the water system.

million, 8,580-square-foot water treatment plant equipped with a Mangazur manganese-filtration system. The project was funded by a low-interest loan from a state revolving fund.

“Our existing treatment center (built in 1990) couldn’t accommodate the large filters in the Mangazur system, which are 14 feet in diameter,” Rowley says. “The old treatment plant was primarily designed to remove volatile organic compounds using air scourers and it would’ve been difficult to retrofit it for a Mangazur system. So it was more economically feasible to start with a brand-new design.”

Developed in Europe by SUEZ Water Technologies and Solutions, the system uses a natural biological filtration process instead of chemicals to remove manganese from water.

A key component is naturally occurring bacteria found in raw water. In simplest terms, these microorganisms grow and create a bio-film that coats the giant filters — one in each of four large tanks — and oxidizes (solidifies) the manganese as it passes through. The manganese particles then get trapped in the filters.

Operators backwash the filters periodically to remove the solidified manganese, which flows into decant tanks and then into the town’s sanitary sewer system. The bio-film remains in the filters even after backwashing, allowing for continual operation and no filter replacements needed for long periods of time.

“I’m extremely impressed with the quality of water that the Home Farm Treatment Plant has produced,” says Rich Fox, the assistant superintendent of water treatment pumping stations and a 36-year employee of utility. “And the 700 hours in between filter

“It’s a very visual process. The water might be pretty rusty initially, but then it clears up.”

Dan Rowley

backwashes is unheard of, compared to conventional filtration.”

Construction of the Home Farm Water Treatment Plant began in July 2017. The facility started operating in early October 2018. The project also included refurbishing the eight wells with new pumps, motors and motor-control centers.

The plant can treat up to 7 million gallons of water per day but treats an average of 3.3 to 3.5 mgd. Rowley says operators have to closely watch the pH levels in the water and periodically add oxygen to keep the microorganisms alive.

The utility increased its water rates by 40% in 2018 to cover rising operational costs and to generate revenue to pay off the loan, Rowley says.

More work to do

The project was a success; within several weeks, water samples tested at the plant showed no presence of manganese.

But there was one issue the new treatment plant didn’t solve; the manganese that still coated the waterlines in the town’s water distribution system. That’s where the unidirectional flushing program came into play.

UDF differs from conventional waterline flushing because water flows only in one direction — downstream from a water tank or treatment plant — and the flushing occurs only in one isolated pipe segment at a time. By cutting off other water flows, the velocity of the flushed water, created by opening fire hydrants, increases to 5 to 10 feet per second, compared to 1 to 3 feet per second in conventional flushing, Rowley says.

The Shrewsbury water system has three pressure zones; each one func-



Rusty water pours from the hydrant at the start of the flushing operation. The unidirectional flushing process clears manganese and tuberculation from the distribution system.

The Town of Shrewsbury Water & Sewer Division team includes (from left) Superintendent Dan Rowley, Rich Fox and Joseph Kenney.

tions independently with its own water tanks.

“The town has such elevational differences and we have to have the water system function in line with those different elevations. One area of town is very high, so it has two water tanks.”

Block-by-block flushing

Under the game plan developed by Tata & Howard, the town was divided into 12 sections. A flushing sequence was laid out for each section, block by block, starting at either a water tank or at the treatment plant.

“You’re essentially working away from the source of the water,” Rowley says. “Step by step, the contractor would close off the appropriate valves at an intersection and then open a hydrant, which creates a high-velocity flush in one direction, created by the hydraulic pressure of the system.”

“Opening the hydrants moves an incredible amount of water. It can remove not only the manganese, but tuberculation, too,” he adds. “Then you systematically flush the side streets.”

Mains larger than 12 inches in diameter sometimes required opening a couple hydrants at the same time in order to generate the required velocity. The system has about 1,538 hydrants.

The flushing continues until the water runs clear. That could take as little as five minutes or as long as a couple of hours, Rowley says.

“It’s a very visual process. The water might be pretty rusty initially, but then it clears up.”

The water from the hydrants then drains into the town’s stormwater system.

Residual benefits

There are some side benefits to unidirectional flushing. For starters, the process uses an average of about 40% less water than conventional flushing, experts note.

In addition, removing tuberculation in pipes extends the life of water mains, Rowley says.

“We also found sections of water mains where the gates were closed and we didn’t know about it. And we found that some gates in new subdivisions were buried under pavement, so we dug them up to expose them.”

“It’s also good to open the hydrants and be sure they’re functioning correctly.”

As he looks back on the project, Rowley says he’s appreciative of the support received by the town’s leadership and the patience of the residents and businesses as the work took place. He also praised the entire Department of Public Works staff and Hydra Tech for their tireless efforts in making the project a success, noting it was truly a team effort.

“With close to 20 years of experience in water distribution and treatment, I’ve never been a part of a project of this scale,” adds Joe Kenney, assistant superintendent of water and sewer operations. “The ability to map out and execute a UDF program of this size is an incredible achievement.”



“The ability to map out and execute a UDF program of this size is an incredible achievement.”

Joe Kenney

UDF will continue

Looking ahead, the UDF program will continue indefinitely each spring and fall, taking two to three years to complete a full pass through the town. And because the pipes have already been scoured, the process should go faster and use less water going forward.

Rowley thinks there’s a lesson here for other utilities, starting with proof for UDF doubters.

“If someone doesn’t believe that unidirectional flushing works, our experience proves how effective it really is when done right,” he says. “Water utilities shouldn’t let their flushing programs lag. It’s an easy thing to push off and push off, but it’s really critical for optimizing your system.”

John Samia, chair of the town’s governing board of selectman, which also serves as the town’s water commissioner, says completing the flushing project was an important step for the town of about 38,000 residents.

“Improving water quality has been one of the most important goals for the town over the past several years,” he says. “The completion of the first full pass of all 12 flushing zones represents a significant step toward improved town water quality.”

“This important work will continue and we look forward to even more water-quality improvements upon further rounds of unidirectional flushing zone work and future water quality improvement projects.”

Would Rowley call the program a success? Absolutely, he says.

“When we started the UDF program in 2019, we had a lot of complaints about water quality. And now we have hardly any. So we’re in a much better place than we were a few years ago.” ♦

FEATURED PRODUCTS FROM:

SUEZ Water Technologies & Solutions
215-355-3300
www.suezwatertechnologies.com

Wachs Utility Products
800-323-8185
www.turnvalves.com
(See ad page 36)

OPTIMIZE CLEANING OPERATIONS

Using the correct accessories will improve cleaning performance while minimizing water use

By Del Williams

The right tools are essential for collections system crews facing difficult cleaning challenges and stubborn obstructions. A well-equipped vacuum truck is a big piece of the puzzle, but so is selecting the proper accessories — tools that can take performance to another level and save considerable time, labor and water resources.

Industry expert and consultant on vacuum sewer trucks Matthew Woods, vice president of sales and marketing at Haaker Equipment, says the right accessories are essential to help crews perform more efficiently.

“The value of having the right accessory for the job cannot be overlooked in terms of operating safely, quickly, efficiently and cost-effectively,” he says. Haaker Equipment is a dealer of vacuum sewer trucks, sewer cleaners, pipe inspection equipment and other tools for municipal utilities.

“The pole-mounted camera allows the prioritizing and allocating of resource-intensive inspection and cleaning crews.”

Matthew Woods

Nozzles

As industry professionals understand, jetting nozzles are some of the most important tools on sewer trucks and are used daily to clean sanitary and storm lines. Nozzles direct pressurized water to clear out obstructions such as silt, sludge, grease and mineral buildup as part of required maintenance or to prepare pipes for relining.

Although nozzles with many configurations are used, the industry rates nozzles based on efficiency. Since utilities are always looking for more effective ways to conserve valuable water resources, companies like Haaker recommend purchasing higher efficiency nozzles with every vacuum sewer truck.

“We regularly recommend stepping up to a higher-efficiency nozzle,” Woods says. “The ultra-efficient nozzles play



a key role as freshwater becomes scarcer because the nozzles provide more efficient fluid mechanics to prevent the waste of water and reduce operating pressures."

"Today, most vacuum trucks are still filled with clean, treated, fluoridated drinking water [from hydrants], which is an increasingly costly resource to put down a sewer line to clean it."

The most efficient nozzles offer tight water patterns that effectively clean the pipe wall and create a powerful water stream to move debris long distances and propel the nozzle.

"With a more effective high-efficiency nozzle, operators will get better performance and clean more pipe using less water. They will be able to clean more square footage of sewer line with the water available on the truck," says Woods.

Reducing water also saves costs by eliminating unnecessary extra trips to refill the truck's water tank and keeps crews effectively on task.

Sewer line cameras

Having a camera or nozzle camera can help operators assess pipe condition without a CCTV truck. A camera is often necessary to not only locate pipe offsets, collapses and infiltration but also avoid obstacles that could trap a nozzle. Video or photo

documentation of before-and-after pipe condition is advantageous to ensure the pipe is completely free of obstructions.

"Without using a camera, sewer truck operators are going into the pipe 'blind' and do not know what is down there or what they are cleaning," says Woods. "It is much easier for crews to clean once they identify what is going on inside the pipe. With this information, the operator can apply the right tool or technique and speed completion of the job."

According to Woods, a pole-mounted camera can be used to quickly assess sewer lines from an adjoining manhole to determine if they need cleaning, repair or further inspection. A unit with Wi-Fi wireless control and video will eliminate cables and allow live video sharing on multiple devices.

"The pole-mounted camera allows the prioritizing and allocating of resource-intensive inspection and cleaning crews, to keep the operation running smoothly," says Woods.



Combination jet/vac trucks are a prerequisite for effective sewer cleaning, but the right accessories can significantly improve the speed and quality of cleaning by any work crew, while conserving water.

Introducing **EnviroCure®**

Let the Liner Do the Work.

Your answer to CIPP styrene emissions

The Global Leader in CIPP Liners Introduces Groundbreaking Benefits to the Mainline CIPP Industry. Applied Felts' proprietary multi-layer felt liner coated with a styrene barrier, vastly reduces if not eliminates styrene odors and emissions on the jobsite before, during and after your installations - taking away the significant cost and unpredictability of styrene-free resin systems.

Advancing the CIPP Industry Since the 1970s. From traditional all-felt and fiberglass reinforced AquaCure® to today's EnviroCure® liners, Applied Felts' culture of listening, innovating and growing to supply customers' needs is still in full force.

It's even easier with FerraTex!

Streamline the job with pre-impregnated liners from our regional wet-out facilities at FerraTex Solutions.

Ferratex.com | 844.433.7728

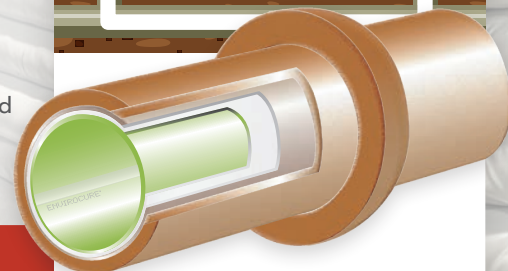
AppliedFelts.com



EnviroCure®

A heat cure, **STYRENE IMPERMEABLE** polymer coating that eliminates styrene emissions and odor.

EnviroCure reduces on-site styrene emissions to less than 1 part per billion*



*IUPUI Test, Oct. 2021



APPLIED FELTS®



The most efficient nozzles offer tight water patterns that effectively clean the pipe wall and create a powerful water stream to move debris long distances and propel the nozzle.

To further simplify inspection down the sewer line, camera nozzles provide operators the ability to clean sewer and storm lines while recording video. Self-leveling camera heads, onboard illumination, high-definition



Nozzles, like these models from KEG Technologies, come in many configurations. The key is matching the nozzle to the type of pipe and the specific task at hand.

recording, memory capacity and Wi-Fi downloading are all features worth considering.

"During routine cleaning, the nozzle camera captures video that can show if there are roots in the pipe that should be removed before they even become a problem," Woods says. "If the roots cannot be removed by the action of the nozzle itself, an operator can go back in later with a chain cutter."

Chain cutters

Tree roots are often the cause of blockages in sewer and storm lines. Blockages can also occur due to accumulated hard mineral deposits, grease, silt or debris.

When a severe blockage is identified, chain cutter nozzles might be required. Most are hydraulically powered, which reduces the overall cost of the unit, but many supply sufficient power or torque to cut through heavy roots or hard mineral deposits.

Chain cutter nozzles that utilize water pressure, however, are more efficient and can deliver the required torque to cut through thick masses. In this approach, high-pressure water enters the chain cutter nozzle chamber and is directed to spin the cutting chains at high velocity.

Sewer maintenance tools

Another valuable addition to the accessory list is the broader category of general "tools" that simplify tasks and improve efficiency. This includes items such as manhole hooks/picks, telescoping claws, sewer brushes, debris baskets, tubing transition couplers, vac-traps and the like.

"For sewer cleaning and maintenance, there are many special tools and accessories that crews use on a daily basis that facilitate safety and productivity," Woods says.

The bottom line

The bottom line for collections system crews is that having the right accessories can significantly improve the speed and quality of cleaning by any work crew, while conserving water.

With so much to gain, cleaning crews are advised to spend the time and energy investing in the accessories they need. Those that seek out best-in-class options and use them effectively to complement the vacuum sewer truck itself will enjoy dramatically improved performance and productivity. ♦



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

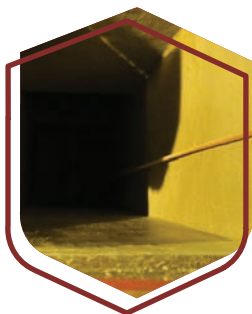
Email: sales@mightyprobe.com Fax: 800.521.3260

CALLING TIMEOUT FOR YOUR INFRASTRUCTURE



1 MILLION APPLICATIONS & COUNTING

- + RESTORE & PROTECT AILING INFRASTRUCTURE WITH THE ONLY STRUCTURAL & CORROSION LINING ON THE MARKET
- + PROVEN TO ADD YEARS OF SERVICE LIFE TO PUMP STATIONS & WET WELLS
- + FAST-CURING SPRAYWALL STRUCTURAL LININGS PROVIDE YEARS OF DEPENDABLE SERVICE LIFE



LEARN MORE TODAY. YOU'LL BE GLAD YOU DID.

You deserve to experience iron-clad, long-term solutions that you can trust with absolute confidence. With Sprayroq®, you can depend on reliable solutions to your biggest challenges.



WANT TO SEE THE PROCESS HAPPEN FOR YOURSELF?

Scan the QR Code to request a 30-minute online presentation, and see the product in action. We'll follow with a Q&A session so you can get all of the information you need.



P: 205.957.0020
E: info@sprayroq.com
W: sprayroq.com

GETTING COMFORTABLE WITH CANDOR

While truth bombs can hurt, everyone benefits from honest feedback

By Ken Wysocky

In the corporate world, it's so much easier for managers to gloss over employees' weaknesses or for employees to give some manager's zany proposal a free pass, no questions asked. Just go with the flow and it's all good.

Until it's not.

Here's the thing: When managers don't give employees the critical intel they need to get better, they're tacitly indicating that underperformance is OK. That then places an unfair burden on high-performing employees who pick up the slack. And that, in turn, leads to resentment and low morale, poor team results and higher turnover as star employees tire of the charade.

The same is true for a group-think mentality where no one raises questions about proposals and projects. There are many reasons for this. One obvious factor is concern about retaliation. Or employees are afraid they'll be the only one to say something — even if they know others share their skepticism. Or perhaps they lack the confidence or conviction to express an opinion, fearing it's without merit.

How can you tell if an organization cultivates a culture of fear instead of candor? The telltale signs are obvious, says Dana Brownlee, the founder of Professionalism Matters.

You probably know the drill: There's the "meeting after the meeting," where employees who smiled and nodded their approval as the boss announced another doozy of an idea then gather in a break room and whisper about the ridiculous proposal.

"Or you're attending a large, all-hands meeting and the president of the company asks if anyone has questions about a new proposal, and no one raises their hand," she adds. "If you have that many people in a room and you have zero questions, you're working in an organization with low trust."

Worse yet, it convinces leaders that bad ideas are viable, she says.



"It's a simple idea — care personally while at the same time you challenge directly."

Kim Scott

It's all about context

While honesty truly is the best policy, it also can have negative consequences if not presented tactfully and diplomatically. Like so many things in life, it's not what you say, but how you say it, along with the context you provide for your candid comments, experts say.

Best-selling author and executive coach Kim Scott has a name for it: radical candor.

"It's a simple idea — care personally while at the same time you challenge directly," says Scott, the co-founder of Radical Candor, a consulting firm that helps organizations create a culture of effective feedback. "It's like delivering love and truth at the same time."

"Very often we think there's a dichotomy between the two, but I believe that's wrong," continues Scott, the author of the best-selling book, *Radical Candor: Be a Kick-Ass Boss Without Losing Your Humanity*. "If you truly care about someone, you also must challenge them — tell them when they make a mistake."

That raises a crucial point about radical candor: It only works when employees know their

managers care about them. Without that key ingredient, praise sounds insincere, and criticism becomes what Scott calls obnoxious aggression.

The converse to that is when managers care about employees but fear that delivering bad news will hurt their feelings. Scott calls this "ruinous empathy."

But when managers both care about and challenge employees, they've entered the radical candor zone.

Two-way street

So if managers realize they're obnoxiously aggressive, how do they change without making their team members leery about the sudden transformation? Start by first inviting criticism, rather than dishing it out, Scott suggests.

"If you solicit feedback and respond well to it, they see that you view feedback as a gift," she explains. "And going forward, they'll now understand the spirit in which you offer them feedback."

When managers ask for feedback, it's important to ask questions that can't be answered with simple "yes" or "no" answers. For example, managers might start by asking what they can do to make employees' jobs easier.

Moreover, it's important to first give praise for what employees do well. "It's not a complicated process," Scott notes. "After you solicit feedback and give praise, you're in a better frame of mind and the employees are in a better frame of mind and it becomes easier to offer criticism."

Radical candor also requires two-way dialogue, not a monologue. In short, managers must be mindful that they're not the sole arbiters of good or bad performance. Instead, they should emphasize that they're not passing judgement, just sharing a point of view, she recommends.

"It's better to say, 'Here's what I see and I'm curious to understand what you see,'" Scott suggests. "You don't want to sound like you have a

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.

pipeline to God, where you know what's true and what isn't. You're simply trying to find a better answer together. This should be more about listening than talking. Be humble."

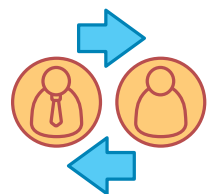
Get permission to criticize

Similar guidelines apply when questioning crazy managerial proposals. For instance, it's a bad idea to just tell someone a proposal is terrible, Brownlee says.

"Instead, tell them it's a good idea, but I'm concerned about x, y and z," she suggests. "Or say, 'I know this is your baby, and I fully support it, but I've heard some rumblings that could raise red flags. Do you want me to bring those up to you or keep it to myself?'"

"It's always good to ask for permission up front, and phrasing concerns as a question is much less threatening."

On a broader level, organizations need to let employees know that candor is a corporate value to be prized, not punished. They should encourage employees to play devil's advocate because it's better than finding problems with projects or products after the fact.



There are ways to make employees feel more comfortable with candor. Brownlee says one manager she's worked with puts \$5 in a jar every time one of his reports pushes back on a new idea. He then uses the money to fund a once-

a-month pizza party.

Managers also can pick a rotating devil's advocate that's responsible for raising tough questions during meetings.

"It might sound silly, but when you do things like that, it starts to shift the culture," she explains. "You take away the fear factor and pressure for people who don't want to push back because for that one person, it's their assigned job."

Brownlee also suggests a tactic she used back when she was a team leader and project manager for a major telecommunications company. When she'd hold meetings to announce new initiatives, she'd place an index card on every chair in the room. On the card was written, 'My biggest concern about this project's success is _____.'

When the presentation concluded, she'd ask employees to anonymously fill in the blank and drop the card in a bag as they left.

"This technique gave me tons of candid feedback," she explains.

Start small, but aim big

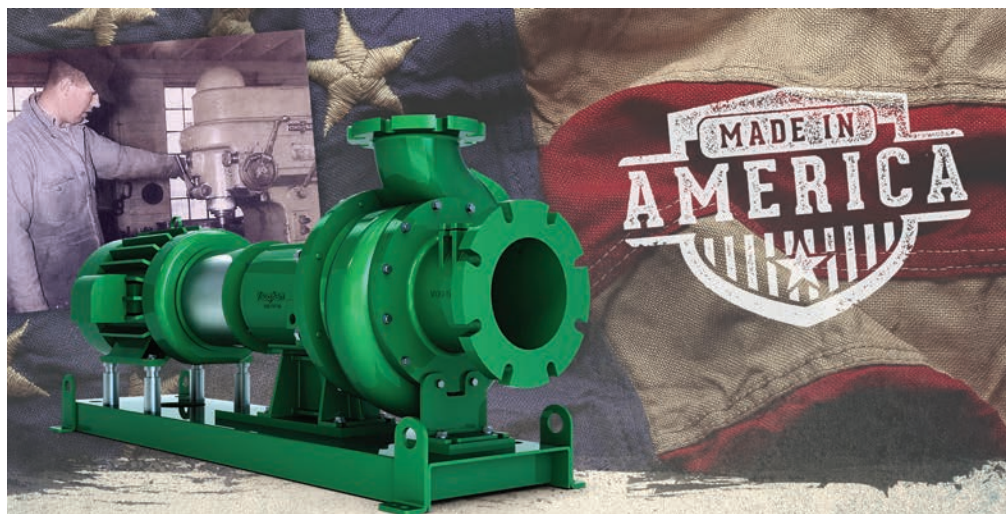
In the end, changing an organization's culture

can be a lot like turning around an aircraft carrier: It takes time. And it's the little things that matter, Brownlee says.

"There's no real formula for changing it," she notes. "It takes a lot of role modeling by managers. It's the small things you do at the granular level that change the paradigms." ♦

"It's always good to ask for permission up front, and phrasing concerns as a question is much less threatening."

Dana Brownlee



PROUDLY MADE IN THE USA.

Since 1960, Vaughan Company has been manufacturing the toughest no-clog pumps in the USA. Our 3rd and 4th generation family-owned and operated company builds cutting edge products that are built to last and keep things flowing smoothly.

Choose the unmatched reliability of Vaughan. Ask about our free trial program and on-site demos.

ChopperPumps.com

888-249-CHOP

EXPEDITED DELIVERY

ELIMINATES COMMUNUTORS

EXTERNALLY ADJUSTABLE
CLEARANCES

Vaughan
Unmatched Reliability

PREDICTING FUTURE SUPPLY

Research aims to model climate's impact on water resources

By Tim Dobbins

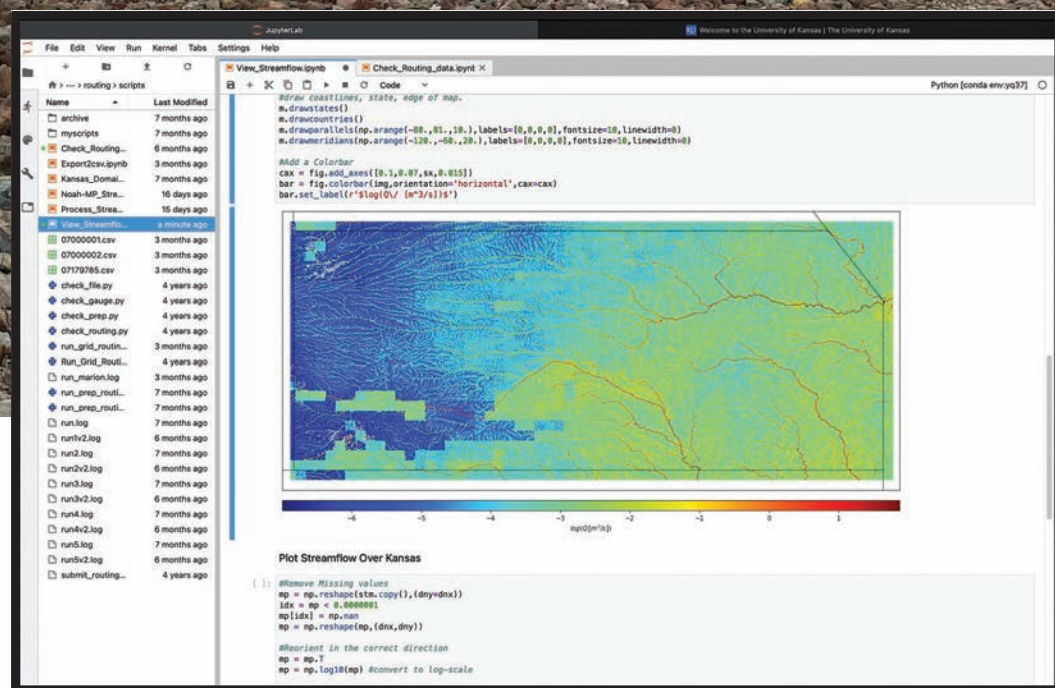
Researchers at the University of Kansas School of Engineering are set to begin a two-year project aimed at creating models using projected climates to help state officials better allocate water.

The idea came a few years ago when Josh Roundy, associate professor of civil, environmental and architectural engineering at KU, met with a representative from the Kansas Water Office and together realized the need for more in-depth models depicting water availability in different climate scenarios.

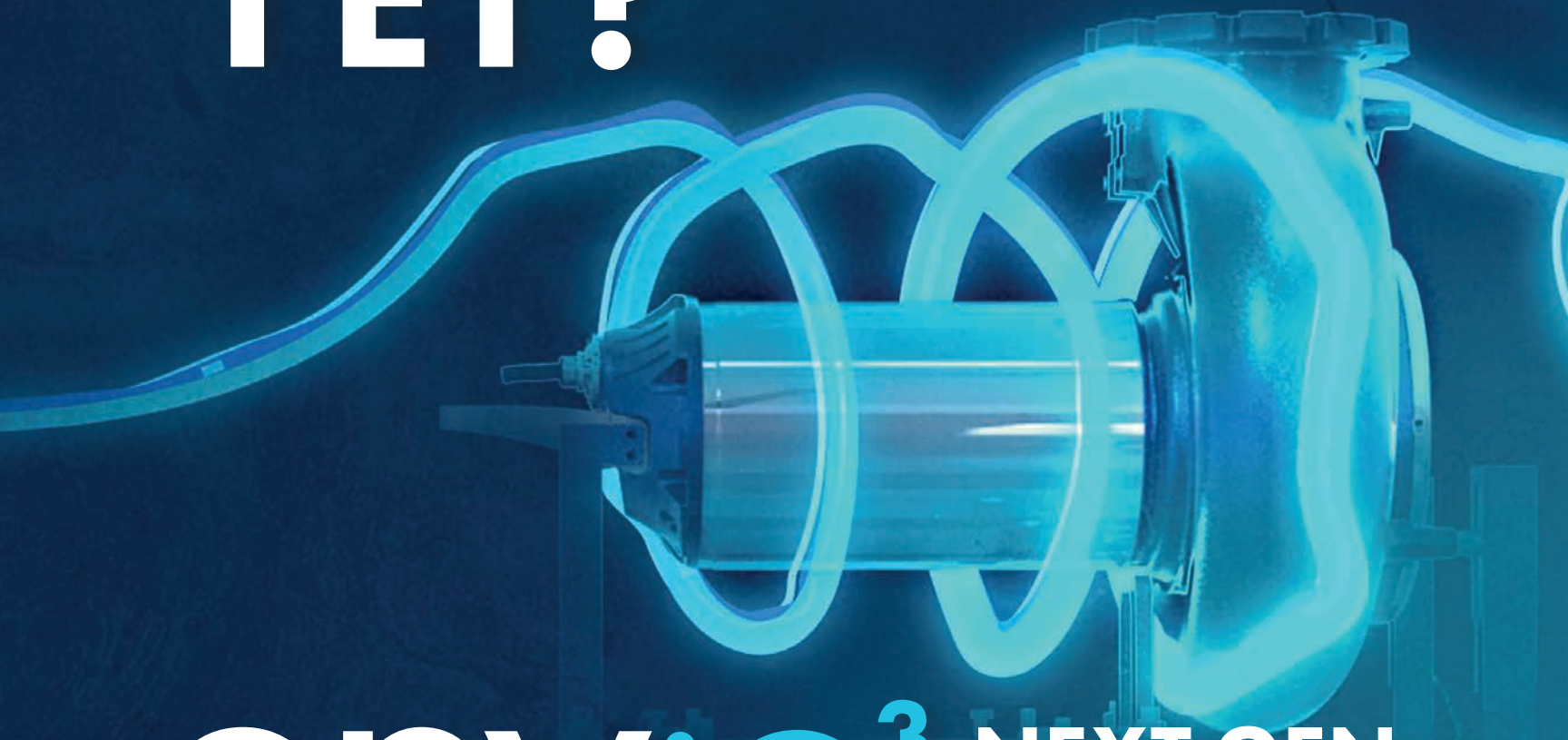
A proposal was drawn up and eventually chosen to receive funding from the Bureau of Reclamation's WaterSMART grant with additional funds from KU and the KWO.

The proposed research will expand the models currently used by the KWO that are largely based on data recorded during a 1950s drought. Roundy thinks the outcome of this project will make it possible for officials to consider different scenarios besides drought by looking forward to climate predictions and their direct impact on evaporation and streamflow. The proposed project will do just that and ultimately help with future water allocation decisions in Kansas.

(continued)



ARE YOU ENVIEOUS YET?



**envie³ NEXT GEN
PUMPS**

FOR SUBMERSIBLE & DRY PIT APPLICATIONS

envie3.cranepumps.com

CRANE
PUMPS & SYSTEMS

**BARNES
DEMING**

While others are still searching ...
... WE ARE FINDING LEAKS!



SePem 155

Noise logger for mobile and/or permanent use

Hermann Sewerin GmbH | Office +1 888 592 9916 | Cell +1 888 592 9916 ext. 102 | sewerin-usa@sewerin.net | www.sewerin.com

"Because of my degree in civil engineering, I'm very interested in working with people and infrastructure," Roundy says. "I want to make the data that we work on as climatologists useful in terms of making better decisions. That's always been the motivation for why I do what I do."

Scope

The project is localized to the central and eastern portions of Kansas and incorporates six river basins, 21 reservoirs, 51 inflows and 163 sources of consumptive water use. The team, led by Roundy, will use the Couple Model Intercomparison Project Phase 5 from the World Climate Research Programme to forecast how climate changes will impact rainfall and water availability in upcoming years. These models compare multiple emission scenarios along with responses from the land, ocean and atmosphere.

"We're going to be taking down-scaled climate scenarios, which the Bureau of Reclamation has already done for all of the U.S., and using those, we will be running a model that is going to calculate stream flow and evaporation," Roundy says. "So, we will model what that type of data looks like under different climate scenarios. The challenge is then to be able to validate that our hydrologic model that we're using is giving us useable results."

Roundy says they will spend a lot of time validating, calibrating and checking the values they get from the hydrologic models compared to those observed in the past.

Though this work will focus on Kansas specifically, the strategy used and the ending results may benefit municipalities across the country. "More broadly speaking, I think municipalities will be more inspired to actually take on using climate data in different scenarios and use that in their planning and maybe not be so intimidated by it," Roundy says.

That part of the project is important. Compiling data into models is only useful for the KWO and other utilities if it's in a form and presented

in a way that is easily understood. "The whole idea behind this is that we can come up with ways to do that processing and put it in a way that's simple for the Kansas Water Office to put in their model. To remove that technical barrier, so more people can use that data."

"I want to make the data that we work on as climatologists useful in terms of making better decisions."

Josh Roundy

Broader reach

It's Roundy's goal that the project will result in a published academic paper showing other states and regions an approach for forecasting future water supplies, providing an extra tool to scheme and adjust future water distribution plans.

Another challenge for Roundy and his team is the fact that their research is dependent on a very unpredictable field of data. "Climate data is

very uncertain. We are trying to form this uncertainty in a way that can still be very useful," Roundy says. What he means is that even though their estimates might not be completely accurate, the work could still offer a level of risk assessment for water supply; it just comes down to displaying it in the right way.

Managing water supplies may become more and more challenging in upcoming years as increased periods of drought are projected as well as periods of increased flooding. Generating scenarios based off climate changes like more frequent droughts and flooding and how the seasonality may change are the types of models that could exponentially help local authorities make educated decisions moving forward.

"I think there are a lot of applications for climate scenario data," Roundy says. "The ultimate goal is to help make water allocation more sustainable long term and to help the Kansas Water Office make good decisions about allocation into the future while encouraging conservation and being all around smarter with our water." ♦

Affordable. Secure. Hosted.

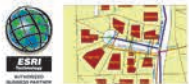
CLOUD-BASED ASSET MANAGEMENT PLATFORM

The turnkey foundation for public works condition assessment and proactive decision making.

powered by 

DEFECT CODING AS-A-SERVICE

GIS



ASSET
MANAGEMENT

Cityworks
Partner Network

IBM maximo

infor

lucity

GraniteNet
Web Office

Sync data
through the
Internet
to the Cloud



MANAGE OFFICE TASKS &
REVIEW INSPECTIONS



PERFORM & VIEW INSPECTIONS /
REVIEW TASKS



FIELD INSPECTIONS

MOBILE
INSPECTIONS

- Enable your remote workers to work via the Cloud, as well as your on-site resources, too.
- Securely access and store everything in the Cloud.
- Scale capacity and storage up or down as needed.
- Quit buying, patching or managing servers - we'll do it for you!
- Decrease dependence on local IT resources and increase operational excellence and performance.
- Add-in optional Web Applications, as needed.

Ask for a demo! <http://gnet.us.com>

 CUES

GraniteNet
ASSET INSPECTION / DECISION SUPPORT SOFTWARE

800.327.7791 | salesinfo@cuesinc.com | www.cuesinc.com



WORKING WELL UNDER PRESSURE

Pressure Washers &
Drain Jetting Equipment

NEW



RCJ4008H

»8 gpm @ 4000 psi »200' x 3/8" Jet Hose
»800 cc EFI on Manual Reel
Honda Engine

Call for Quote

NEW



LJ4008H

»8 gpm @ 4000 psi »200' x 3/8" Jet Hose
»800 cc EFI on Manual Reel
Honda Engine

(NARROW DESIGN)

Call for Quote

NEW



4008H Power Unit

»8 gpm @ 4000 psi »400' x 3/8" Jet Hose
»800 cc EFI on DC Powered Reel
Honda Engine

Just Add A Tank!

Call for Quote

3012H Power Unit

»12 gpm @ 3000 psi »400' x 1/2" Jet Hose
»800 cc EFI on DC Powered Reel
Honda Engine

Call for Quote

3012H Compact Skid

»12 gpm @ 3000 psi »400' x 1/2" Jet Hose
»800 cc EFI on DC Powered Reel
Honda Engine

(100 GALLON TANK)

Call for Quote

4008H Compact Skid

»8 gpm @ 4000 psi »400' x 3/8" Jet Hose
»800 cc EFI on DC Powered Reel
Honda Engine

(100 GALLON TANK)

Call for Quote

NEW



VM4008H

»8 gpm @ 4000 psi
»690 cc
Honda Engine
»50' x 3/8" Washdown
Hose on DC Reel

Call for Quote



STB3012H

»12 gpm @ 3000 psi
»800 cc EFI
Honda Engine
»400' x 1/2" Jet Hose on
DC Reel

Call for Quote



TT4 SERIES

»18 gpm @ 4000 psi
»74 HP Turbo Intercooled
HATZ Engine
»500' x 1/2" Jet Hose/
Hydraulic Reel

Call for Quote

*** All Jets Shown Come with Pulse Valve, 2 Jet Nozzles, Tool Box, Gloves, Safety Glasses, ***
Tip Cleaner, Tiger Tail, Wash Down Trigger Gun with Nozzles.

Building Drain and Sewer Equipment since 1981.

We Build Electric, Gas and Diesel powered models
up to 4000 psi, flows up to 40 gallons per minute.

Don't see exactly what you want...

We will custom build exactly what you want!

800-648-5011 | www.camspray.com | sales@camspray.com

MUNICIPAL
SEWER & WATER
**PUMPS
DIRECTORY**

		CENTRIFUGAL	DEWATERING/BYPASS	EFFLUENT	GRINDER/SUMP	HIGH PRESSURE	METERING	PUMP CONTROLS	PUMP PARTS/COMPONENTS	PUMP REPAIR/SERVICE	SOLIDS/SLUDGE	STORMWATER	SUBMERSIBLE	TEST	VACUUM PRESSURE	VERTICAL/LIFT STATION	WASHDOWN	WATER	OTHER
 AMT Pump Company 400 Spring St. Royersford, PA 19468 610-948-3800 F: 610-948-5300 sales@amtpump.com www.amtpump.com See ad page 39		YES	YES	YES	YES	YES			YES		YES	YES	YES				YES	YES	
 CRANE PUMPS & SYSTEMS See ad page 23	Crane Pumps & Systems 420 Third St. Piqua, OH 45356 937-778-8947 crane pumps@cranepumps.com www.cranepumps.com	YES		YES	YES						YES		YES			YES		YES	Chopper
 Franklin Electric	Franklin Electric 9255 Coverdale Rd. Fort Wayne, IN 46809 866-271-2859 F: 866-271-2709 franklinwater@fele.com www.franklinengineered.com	YES	YES	YES	YES	YES		YES	YES		YES	YES	YES			YES	YES	YES	
 GLOBAL PUMP A HERZBERG COMPANY	Global Pump 10162 E Coldwater Rd. Davison, MI 48423 866-360-7867 810-653-4828 F: 810-658-0632 sales@globalpump.com www.globalpump.com	YES	YES			YES			YES		YES	YES	YES			YES			
 GORMAN-RUPP PUMPS See ad page 9	Gorman-Rupp Company 600 S. Airport Rd. Mansfield, OH 44903 419-755-1011 F: 419-755-1251 grsales@gormanrupp.com www.GRpumps.com	YES	YES	YES		YES		YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
 INDUSTRIAL FLOW SOLUTIONS™	Industrial Flow Solutions 104 John W Murphy Dr. New Haven, CT 06513 860-631-3618 sales@flowsolutions.com www.flowsolutions.com		YES	YES	YES			YES			YES		YES			YES	YES	YES	Direct In-Line Pump System
 JAECO FLUID SYSTEMS, INC.	JAECO Fluid Systems, Inc. 100 Quaker Ln. Malvern, PA 19355 877-778-3456 www.jaecofs.com		YES			YES	YES		YES	YES							YES	YES	
 Komline-Sanderson	Komline-Sanderson 12 Holland Ave. Peapack, NJ 07977 800-225-5457 908-234-1000 F: 908-234-9487 info@komline.com www.komline.com		YES			YES					YES								
 Liberty Pumps A Family and Employee Owned Company	Liberty Pumps 7000 Apple Tree Ave. Bergen, NY 14416 800-543-2550 585-494-1817 F: 585-494-1839 Liberty@LibertyPumps.com www.LibertyPumps.com			YES	YES				YES				YES			YES		YES	

MUNICIPAL
SEWER & WATER
**PUMPS
DIRECTORY**

		CENTRIFUGAL	DEWATERING/BYPASS	EFFLUENT	GRINDER/SUMP	HIGH PRESSURE	METERING	PUMP CONTROLS	PUMP PARTS/COMPONENTS	PUMP REPAIR/SERVICE	SOLIDS/SLUDGE	STORMWATER	SUBMERSIBLE	TEST	VACUUM PRESSURE	VERTICAL/LIFT STATION	WASHDOWN	WATER	OTHER
	PRIMEX PO Box 1708 Detroit Lakes, MN 56501 218-847-1317 F: 218-847-4617 info@primexcontrols.com www.primexcontrols.com							YES											Pump Control Panel
See ad page 33	RELINER/Duran Inc. 9 Matthews Dr. A1/A2 East Haddam, CT 06423 800-508-6001 F: 877-434-3197 info@reliner.com www.reliner.com															YES			
	Smith & Loveless, Inc. 14040 Santa Fe Trail Dr. Lenexa, KS 66215 800-898-9122 913-888-5201 F: 913-888-2173 answers@smithandloveless.com www.smithandloveless.com	YES						YES	YES	YES	YES	YES				YES			
See ad page 3	United Rentals, Inc. 100 First Stamford Place, Ste. 700 Stamford, CT 06902 www.UnitedRentals.com	YES	YES		YES	YES		YES	YES	YES			YES		YES	YES			
	Vaughan Company, Inc. 364 Monte Elma Rd. Montesano, WA 98563 888-249-2467 360-249-4042 info@chopperpumps.com www.chopperpumps.com	YES	YES								YES	YES	YES			YES		YES	
	Vertiflo Pump Company 7807 Redsky Dr. Cincinnati, OH 45249 513-530-0888 F: 513-530-0893 sales@vertiflopump.com www.vertiflopump.com	YES	YES	YES	YES				YES		YES	YES				YES	YES	YES	
	Wastecorp Pumps PO Box 70 Grand Island, NY 14072 888-829-2783 201-445-2882 F: 888-888-3320 info@wastecorp.com www.wastecorp.com	YES	YES	YES	YES			YES	YES		YES		YES		YES	YES			



Check Out the
Pumps Directory Online

www.MSWMag.com/equipment/2022-msw-pump-directory

GROWING WITH THE COMMUNITY

Operational improvements and a collaborative approach drive Westminster's quest for distribution system optimization

By Andrea Song

The city of Westminster, Colorado, is a vibrant, growing city along the Denver-Boulder corridor. Like many cities across the country, Westminster is faced with managing aging distribution infrastructure.

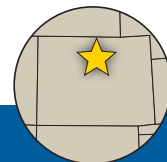
The challenges of aging infrastructure require innovative approaches to becoming a more reliable and efficient service provider while making the most of existing infrastructure, and doing so as cost-effectively as possible. Replacing infrastructure with new assets is not always fiscally or operationally feasible.

The distribution system includes approximately 550 miles of waterlines, 15,955 isolation valves, 4,840 hydrant valves, and 10 pressure zones. The city also has 10 storage tanks with a total storage capacity of 31 million gallons.

Westminster's primary source of water is Standley Lake, and its potable water demand ranges from 10 mgd in the winter to 44 mgd in the summer. The city has two drinking water treatment facilities. The Semper plant has a rated capacity of 44 mgd and the Northwest plant has a rated capacity of 15 mgd.

To become a more reliable and efficient service provider, the city has been an active participant in the American Water Works Association's Partnership for Safe Water drinking water optimization program sponsored by AWWA, the U.S. Environmental Protection Agency and other organizations to recognize water suppliers that continuously go above and beyond regulatory requirements to provide high-quality drinking water through treatment plant and distribution system optimization.

Westminster's distribution team has been an active participant since 2017 and received the Phase III Directors



PROFILE:

Westminster (Colorado) Water Utilities

SERVICE AREA:
34 square miles

WATER DISTRIBUTION EMPLOYEES:
35

WATER CUSTOMERS:
34,000 meters serving 125,000 residents and residents of neighboring community Federal Heights

MILES OF WATER MAIN:
550 miles

NUMBER OF FIRE HYDRANTS:
4,840

SUMMERTIME PEAK DEMAND:
44 mgd

WEBSITE:
www.cityofwestminster.us/publicworksutilities

Westminster (Colorado) utilities specialist Preston Geib checks water pressure with a backflow hydro construction meter on a local hydrant. (Photography by by Cara LeFebvre)

Award for the Distribution System Optimization Program in 2018. The team is currently working toward becoming one of the very few utilities in the country to achieve the Phase IV Presidents Award, which is an important milestone in continuous distribution system performance and operational improvement.

Culture of empowerment

Maintaining existing infrastructure may begin with equipment and materials, but it's also about empowering people. Over the past 70 years, the city has taken successive steps to provide a reliable and safe water supply, manage growth and adapt to changing needs by developing a culture of teamwork among the city's public works and utilities staff. That culture is essential in attracting and retaining great employees.

The distribution team is known for fostering a caring, team-oriented working environment with a commitment to excellence. Westminster's work culture encourages innovation and creativity. The clear goal is to provide core services and foster economic resilience to give their community the opportunity to thrive.

Asset management

The city has been actively addressing water main breaks and overall distribution system health through a proactive water main replacement program. The distribution construction team, established in 1985, currently replaces 2 to 3 miles of primarily residential mains per year. This main replacement program was accelerated in the early 2000s to counteract increasing break rates within the distribution system. The program has been successful, with break rates steadily dropping from approximately 33 water main failures per 100 miles of pipe in 1996 to around seven failures per 100 miles in 2021.

"The in-house construction team has proven to be very nimble and helps save costs when needed," says Water Distribution Superintendent Roger Harshman.

A few years ago, the city planned to remove several pressure reducing valves and vaults at an estimated cost of \$350,000 to \$400,000. Instead of contracting the project out, the construction team was deployed and they completed the project at a fraction of the cost.

"Not only do we replace water mains, we help our meter team rebuild meters, along with replacing vaults and valves," says distribution construction team foreman Matt Bueno, who has worked in the utility for 17 years.

In 2014, the city hired a consultant to conduct an analysis aimed at optimizing and prioritizing water main rehabilitation and replacement. "This project has allowed appropriate prioritization of work, and it has given a schedule and roadmap for the city to replace top priority water mains at the right responsible moment," Harshman says. "We are focusing on the pipes with the highest risk condition score or on stretches of pipe that have broken several times."

In 2018, Westminster implemented the Cityworks asset management platform to help focus maintenance and capital spending on priority assets and areas. The distribution maintenance team is responsible for a variety of specialized work activities from valve maintenance and inspections to hydrant repair and flushing. The team is able to enter data in their trucks and make important decisions in real time by accessing Cityworks on their tablets.

"Cityworks is a powerful tool our team uses to leverage information to make informed decisions about whether to repair, renew, replace or allow assets to run to failure," Harshman says. "They are staying on top of things through state-of-the-art technology and in-house skills, which allow more data-driven decisions to be made."

"The in-house construction team has proven to be very nimble and helps save costs when needed."

Roger Harshman



Utilities operators Nick Craig (left) and Trueman Sanchez exercise a water main valve with a Wachs Valve Maintenance System.

Better metering

Gone are the days of customers waiting two months for a bill to find high water usage or waiting for city staff to drive to homes and read customers' meters or check for leaks. From 1992 to 2020, the department relied on a drive-by automatic meter reading system that was a big step up from reading each meter individually. "It took one person 10 days a month to read all the meters," says Brad Bettale, meter shop and cross-connection control foreman.

Westminster recently invested \$14 million in new advanced metering infrastructure to replace over 30,000 residential and small commercial water meters. The new meters have reduced maintenance costs and improved customer service by giving customers more timely information about their water usage, including automatic leak notifications. These leak notices allow customers to find and fix leaks before they receive a high bill. By replacing outdated meters, the city also reduced labor and equipment costs associated with meter reading and maintenance.

OPTIMIZING LEAK DETECTION, PRESSURE MONITORING AND VALVE MAINTENANCE

For the city of Westminster, Colorado, the most common approach to asset management was once reactive. When something would break or malfunction, a repair crew was dispatched to make repairs.

While emergency repairs are unavoidable, the city is now focused on preventive maintenance and solving problems before they arise. “Optimizing leak detection, pressure monitoring and valve maintenance has changed our maintenance program from reactive to more proactive,” says Mark Uhland, distribution maintenance team foreman.

To be more proactive, the city purchased a Gutermann leak detection system approximately seven years ago. “The fact we are seeing more leaks is partly from just being able to detect them,” Uhland says. “But that’s a good thing. It lets us be proactive. If we didn’t detect them, the number of complete main break failures compared to small leaks would increase.”

Other improvements include the installation of pressure surge tanks at three pump stations along with variable frequency drive motors on the pumps. Additionally, the city installed 100 pressure sensors across the system’s 10 pressure zones and has implemented a comprehensive water pressure monitoring program. By tracking pressure and unexpected changes in water flow, which can cause a high- or low-pressure event, the distribution team is supplied with actionable information to minimize service disruptions and decrease emergency repair costs. Planned maintenance is always less expensive than emergency repairs.

Constant pressure readings have led to the replacement of valves that otherwise would have been left in place and failed. “We found an unknown 4-inch pressure reducing valve that needed to be removed as it was a potential hazard,” Uhland says.

By keeping a more constant eye on system pressures, the city has minimized high-pressure occurrences, which put a strain on aging infrastructure and lead to water main cracks, leaks and breaks.

Nick Craig lowers a Gutermann Zonescan 820 Logger into a valve box.



“The willingness to learn also comes with a willingness of staff to take responsibility for the system’s performance.”

Roger Harshman

“Switching over more recently to an advanced metering infrastructure, we have increased the efficiency of the process, simplified the data collection work and saved staff time,” Bettale says.

One utility

The city’s public works and utilities department is comprised of four divisions (utilities operations, streets operations, water resource and quality, and utilities engineering) and the business operations group that maintain and enhance the safety and well-being of the community by providing water and wastewater service as well as maintaining the extensive network of street infrastructure. Westminster’s public works and utilities department adopts a “one utility” ethos that fosters collaborative planning between teams.

The utilities operations division operates and maintains the city’s waterlines, 25 miles of reclaimed waterlines, 23 miles of raw waterlines,

420 miles of sanitary sewer lines, 10 water storage facilities, two water treatment facilities, one reclaimed water treatment facility and one wastewater treatment facility. The operations division coordinates water and sewer system improvement projects and programs. It also administers the maintenance/asset management program that provides the public works and utilities department the resources needed to effectively maintain the many assets customers use on a daily basis.

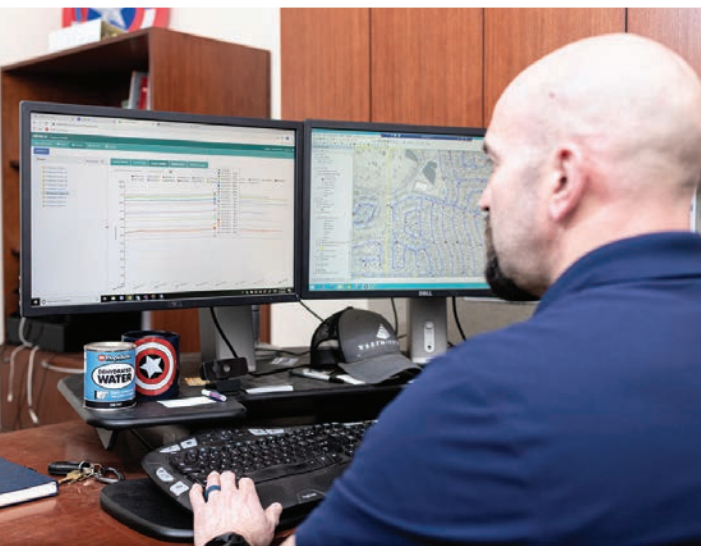
The utility operations division, which includes the water distribution and wastewater collections teams, works closely with the streets operations division to coordinate street surface and subsurface construction work, such as waterline replacement, to maximize efficiencies and lower maintenance costs. The streets operations division provides overall maintenance of streets, manages annual street improvement projects, traffic control devices, stormwater drainage, street sweeping, and snow and ice control.

“They have a lot of streets they need to rehab and we work efficiently to coordinate fixing waterlines on the streets they work on. So, we prioritize and determine which lines we should focus on,” Bueno says.

Both the streets division and the utilities operations division work together to take into consideration the most critical needs of the dis-



The Westminster Water Utilities team includes (from left) distribution maintenance foreman Mark Uhland, meter shop cross connection control foreman Brad Bettale, Water Distribution Superintendent Roger Harshman and distribution construction foreman Matt Bueno.



Distribution maintenance foreman Mark Uhland remotely analyzes data using the Xylem Sensus Pressure Profile software.

tribution team in planning its work schedule.

"The collaboration is great. They'll shift the scheduling of their street rehabilitation projects around to where we need to do water main repairs," Bueno says.

Willingness to learn

Westminster's utilities operations division takes pride in its employees' education and opportunities to become state-certified water professionals. Harshman credits his team's commitment to training and staying up to date on the latest industry certifications for their success.

"The city encourages professional society involvement and sends staff to external trainings and conferences," he says. "The willingness to learn also comes with a willingness of staff to take responsibility for the system's performance."

Harshman says managing water distribution today requires a higher skill set, with more instrumentation and controls, data and stringent regulations for system compliance.

When the Colorado Department of Health and

Environment came out with stricter backflow protection requirements, for example, distribution staff provided not only training for internal employees but also educated residents and now verifies certification for cross-connection installers and testers. Cross training is also encouraged throughout the utility's various teams and helps strengthen the one utility concept.

Response network

The city believes that regional collaboration is a valuable approach for sharing knowledge, technology innovations and helping other utilities respond in times of emergency. Westminster is a part of Colorado's Water/Wastewater Agency Response Network (CoWARN), which connects utilities to communities during an emergency when water or wastewater services are interrupted by natural or manmade disasters.

When Lyons, Colorado, a small city 35 miles northwest of Westminster, was inundated with a 100-year flood in 2015, Westminster's water distribution team helped locate waterlines and leaks. When Paonia couldn't keep water in its tank, two members of the team traveled 230 miles to the western Colorado town to pinpoint leaks using its Gutermann leak detection equipment.

"They thought it would take them two weeks to get it back. We did it in only two days."

Mark Uhland

More recently, when the Marshall Fire hit the communities of Superior and Louisville, they had to bypass their water treatment plant and send untreated water to fight the fire, which resulted in a boil order. "To bring the system back online, they had to do extensive flushing of the lines," says Mark Uhland, distribution maintenance team foreman.

Eight Westminster team members joined other community departments in the flushing effort. "They thought it would take them two weeks to get it back. We did it in only two days," Uhland says.

Helping other communities is part of Westminster's culture, and Harshman says it's mutually beneficial. It helps build knowledge, reliability and resilience. "We all talk to other utilities and network and are here for them. It is our responsibility to help others be better. We're all in this together." ♦

FEATURED PRODUCTS FROM:

Cityworks
801-523-2751
www.cityworks.com

Gutermann, Inc.
603-598-7560
www.gutermann.us.com

Wachs Utility Products
800-323-8185
www.turnvalves.com
(See ad page 36)

Xylem Inc.
800-247-8674
www.xylem.com

PRESENTING POLICY RECOMMENDATIONS

NASSCO's D.C. Fly-In events gaining traction with important members of Congress

By Sheila Joy

For the second year in a row, NASSCO's 2021 Annual Washington, D.C., Fly-In was virtual.

Held over several days, from Dec. 6-17, the 29 meetings included NASSCO members from 15 different states with the following Members of Congress:

- Sen. Mike Braun (R-Indiana), member of the Senate Appropriations Committee
- Sen. Todd Young (R-Indiana), member of the Senate Finance Committee
- Rep. Jackie Walorski (R-Indiana), member of the House Ways & Means Committee
- Rep. Trey Hollingsworth (R-Indiana),

Of the 29 meetings, 22 were with congressional offices that NASSCO has never met with before, or new congressional staffers who were learning about NASSCO's policy recommendations (see below) to Congress for the first time. Additionally, the NASSCO members and staff met with some of the most important congressional offices, including Senate Majority Whip Dick Durbin (D-Illinois), House Majority Leader Steny Hoyer (D-Maryland), Senate Appropriations Committee Vice Chair Patty Murray (D-Washington), Senate Republican Policy Chairman Roy Blunt (R-Missouri), Senate Democratic Conference Chair Tammy Baldwin (D-Wisconsin) and Senate Infrastructure Subcommittee Chairman Ben Cardin (D-Maryland).

The goal of these meetings was to inform and educate members of Congress on the need to fund underground infrastructure and share NASSCO's 2021 Policy Recommendations:

- Provide in the FY22 Omnibus bill the fully authorized funding levels from the recently passed infrastructure package for the Clean Water State Revolving Fund (\$2.4B in FY22), EPA Sewer Overflow & Storm-

water Reuse Municipal Grants (\$280M in FY22), Water Infrastructure Finance and Innovation Act (\$50M in FY22) and Connection to Publicly Owned Treatment Works Grants (\$40M in FY22).

- Fund the EPA Section 106, Section 319, and Office of Enforcement and Compliance Assurance at the highest possible levels in FY22.
- Request the GOA to complete a report to Congress on the state of the nation's wastewater and stormwater collections and conveyance infrastructure.
- Require recipients of federal water infrastructure funding to have an asset management plan developed by certified inspectors using a standardized infrastructure assessment method.

The Infrastructure Investment & Jobs Act, also known as the bipartisan infrastructure package, that passed Congress in November 2021 includes authorization for over \$29 billion in wastewater and stormwater infrastructure funding. Of that amount, \$12.7 billion is guaranteed, with the remaining amount needing to be included in the annual appropriations bills over the next five years.

It is critical for NASSCO and its members to continue to be a strong voice for increased funding for buried water infrastructure. In addition to the Fly-In, in 2021 NASSCO's members used the "Sewer System Heroes" grassroots advocacy webpage to send over 576 letters to Congress calling for increased funding for water infrastructure.

Whether you are a NASSCO member or not, we invite you to call upon your members of Congress by using NASSCO's simple tool. Just text "PIPE" to 25994 or visit www.nassco.org/advocacy/government-relations to participate and for more information. ♦



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

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

Get the EDge Training and Continuing Education Courses

PACP TRAINING

May 2, 8 am EST

Virtual

Includes: PACP/LACP/MACP
Trainer: Michael Lukas

May 4, 8 am PST

Virtual

Includes: PACP/LACP/MACP
Trainer: Brandon Conley

May 10, 8 am EST

Virtual

Includes: PACP/LACP/MACP
Trainer: John Jones

May 11, 8 am EST

Virtual

Includes: PACP/LACP/MACP
Trainer: Brandon Conley

May 11, 8 am EST

Virtual

Includes: PACP/LACP/MACP
Trainer: Jerry Weimer

May 17, 8 am EST

Virtual

Includes: PACP/LACP/MACP
Trainer: Jerry Weimer

May 18, 8 am EST

Virtual

Includes: PACP
Trainer: Michael Lukas

May 19, 8 am MST

Virtual

Includes: PACP
Trainer: Brandon Conley

May 24, 8 am EST

Virtual

Includes: PACP/LACP/MACP
Trainer: Jerry Weimer

May 25, 8 am EST

Virtual

Includes: PACP/LACP/MACP
Trainer: John Jones

May 25, 8 am CST

Virtual

Includes: PACP/LACP/MACP
Trainer: Brandon Conley

June 1, 8 am PST

Virtual

Includes: PACP/LACP/MACP
Trainer: Brandon Conley

ITCP TRAINING

May 5, 8 am EST

Virtual

Includes: ITCP-CIPP
Trainer: Michael Lukas

May 10, 8 am EST

Virtual

Includes: ITCP-CIPP
Trainer: Gerry Muenchmeyer

May 16, 8 am EST

Virtual

Includes: ITCP-CIPP
Trainer: Michael Lukas

May 24, 8 am EST

Virtual

Includes: ITCP-CIPP
Trainer: Lou Krch

May 26, 8 am EST

Virtual

Includes: ITCP-Manhole Rehab
Trainer: Tim Back

June 2, 8 am EST

Virtual

Includes: ITCP-CIPP
Trainer: Michael Lukas

**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.

COMMITTED TO YOU.

COMMITTED TO THE FUTURE

With an extensive offering of American Iron and Steel Act (AIS) compliant valve products, we are dedicated to engineering and manufacturing lasting and reliable valves-ready to perform and meet your ever-changing needs.

From Ball Check Valves, to Swing Check Valves, to Control Valves and more, no matter how complex the application we can help you select the most efficient valve product for your application.



LEARN MORE



(800) 233-2040
WWW.FLOMATIC.COM
15 PRUYN'S ISLAND DR
GLENS FALLS, NY 12801

RELINER® / Duran Inc.

Invert Channel System, Inside Drop System, Stainless Brackets



The RELINER® Modular Manhole Invert Channel System provides durable factory quality flumes for optimum flow conditions.

The RELINER® Inside Drop System is the solution to troublesome outside drops and interior tee's.

Simple to install
Cost effective
Reduces maintenance
Simplifies cleaning

www.reliner.com
1-800-508-6001



PUMPS, LIFT STATIONS AND CONVEYANCE

By Craig Mandli

CONTROL PANEL

Orenco Controls OLS Control Panels

OLS Control Panels from **Orenco Controls** come with the choice of either integrated starters or variable frequency drives that optimize system operation. These panels are suitable for a variety of pumping applications, such as lift stations, stormwater pump stations, water boosting, dewatering or sludge pumping. They can also be used as a SCADA patch, connecting peripheral equipment to future or existing SCADA systems. Parameters can be configured via a human-machine interface and include a user-friendly startup wizard. Engineers can preprogram user interfaces to the site-specific needs of an installation, making the panel virtually plug-and-play. Maintenance staff can easily adjust settings and monitor the system remotely. These weatherproof control panels are UL 508A listed and include service-rated circuit protection, phase and voltage protection, and level controls. **877-257-8712; www.orenco.com**



LIFT STATIONS

Legacy Building Solutions Tension Fabric Buildings

Combining rigid-frame engineering with the proven benefits of tension fabric membranes, **Legacy Building Solutions** offers fabric structures that are fully customizable. They utilize a durable rigid frame in place of the hollow-tube, open web truss “hoop” framing traditionally used for fabric structures. The strength of the structural steel frame provides several engineering advantages, most notably the ability to easily customize buildings to the exact width, length and height required. In addition to long clear spans, the buildings have straight sidewalls that maximize the useable square footage inside the structure. The design allows for much more structural flexibility than traditional fabric structures, including the ability to add lean-tos, mezzanines, sidewall doors and more. The structures are also engineered to provide desired overhangs or handle additional loads for items such as sprinklers and conveyors. **877-259-1528; www.legacybuildingsolutions.com**



RELINER/Duran conveyance products

RELINER/Duran provides a full range of products specifically developed to provide efficient, controlled conveyance of flow through manholes. Inside Drop Bowls capture inflow and convey it directly to the invert channel through the drop pipe. They are available with outlets ranging from 4 to 24 inches and are available to fit most round and flat-walled structures. Force line hoods are available for high velocity inlets. Stainless pipe support brackets securely fasten drop pipes or any other pipes to structure walls. Available in Type 304 or Type 316 stainless, they are noncorrosive and adjustable to align the drop pipe properly to the Drop Bowl. Modular manhole invert channels are made from marine grade fiberglass, providing a consistent cross-sectional area with very high flow capacity for the most efficient conveyance through the manhole. **800-508-6001; www.reliner.com**



PUMPS

Boerger BLUEline Rotary Lobe Pumps

Boerger BLUEline Rotary Lobe Pumps are engineered for low maintenance and high performance. These pumps feature pulsation-free operation and dry-run capabilities, which is key to avoiding downtime. They were designed with maintenance in place, which means they can be serviced without having to take them offline. This heavy-duty pump is a self-priming, valveless, positive-displacement pump that can be used for loading and unloading simply by reversing the flow direction. **612-435-7300; www.boerger.com**



Crane Pumps & Systems Barnes RAZOR

The **Barnes RAZOR** grinder pump from **Crane Pumps & Systems** is a suitable 2 hp pump for light commercial and residential solids-handling applications. It is designed with axial cutting technology to efficiently reduce solids like flushable wipes, diapers and other nonbiodegradable items. Maintenance is easy and convenient with only a single tool needed for disassembly. The plug-and-play cord also provides easy servicing without requiring removal of



epoxy in the conduit. Unlike nonclog pumps with large discharge sizes, its 1.25-inch discharge is suitable for preconfigured packaged systems and turn-key solutions. It is available in the Barnes EcoTRAN Pressure Sewer System, allowing superior waste grinding in tough terrain. It provides a practical and environmentally safe alternative to traditional gravity systems, according to the maker. Numerous configuration options are available. **937-778-8947; www.cranepumps.com**

Duperon 5-in-1 Dual Auger System

The **Duperon 5-in-1 Dual Auger System** is deployed in targeted high-ragging manholes/wet wells to remove problematic debris and prevent chronic pipe and pump clogging. Removing wipes at, or near, the point they enter the sewer stops the problem where it starts without impacting downstream operations. The system captures, dewateres, compacts, conveys and stores problematic debris in a below-grade discharge pipe, where it can be emptied by vacuum trucks. This creates an opportunity to transform emergency, dirty, unsafe and manual clean-outs into planned, safe and coordinated debris removal. Simply uncover, insert vacuum truck suction tube into the discharge chute, remove debris and landfill. **800-383-8479; www.duperon.com**



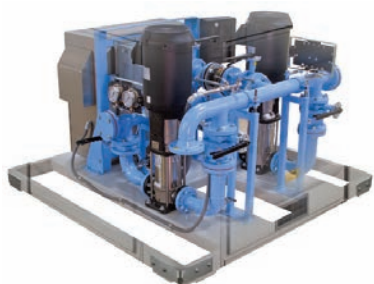
FPS IGP Series

Suitable for residential and light commercial applications, **FPS IGP Series** grinder pumps are a reliable solution for sewage and wastewater transfer. Featuring a floating cutter system that holds tighter tolerances between the rotating and stationary cutters, the pumps offer superior grinding at 414,000 cuts per minute. A 1 1/8-inch-diameter motor shaft prevents deflection during tough grinding situations. These pumps offer decreased runtime and cycles compared to lower hp progressive cavity pumps for more efficient operation. Available in standard, high head, dual seal and retrofit kit configurations, the series is engineered for performance and reliability in the most demanding applications. Exclusively designed control panels are also available for complete systems integration. **866-271-2859; www.franklinengineered.com**



Gorman-Rupp ReliaSource Pressure Booster

Gorman-Rupp ReliaSource Pressure Booster pump packages are designed for long-lasting, trouble-free operation. A variety of pump designs offer flexibility in selecting the right pump for the job. Simplicity, precision balancing and accurate machining ensure reliable, long-lasting, efficient operation. Each package is equipped with advanced control technology and superior logic that provides operators with the flexibility to adapt to a variety of operating conditions. Combining high-quality components and custom programming ensure the



entire package, including pumps, motors and controls, works in harmony to meet system requirements. **419-755-1011; www.grpumps.com**

JWC Environmental Monster Stack

Since materials in the waste stream vary, grinders need to address multiple challenges from the bottom to the top of the grinder. Waste streams often consist of hard, abrasive materials such as rock and sand that are pushed along the bottom, materials that float such as stringy wipes and food scraps, or corrosive environments above the wastewater where the air is often high in hydrogen sulfide. The **Monster Stack** from **JWC Environmental** is a solution to this problem: a customized cutter stack to address the specific challenges of your installation. Because it uses individual cutters for its grinders, it is possible to mix different cutter types in the stack, and those changes can happen anywhere along the stack. It will mix and match the right cutter at the right location to optimize grinder performance and unit longevity. **800-331-2277; www.jwce.com**



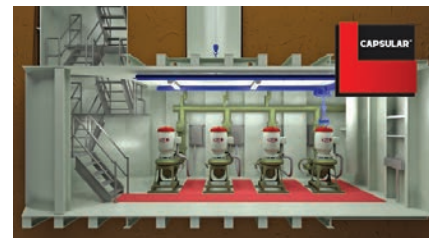
Liberty Pumps ProVore

The **ProVore** grinder from **Liberty Pumps** is designed for use in applications where the addition of a bathroom or other fixtures below sewer lines requires pumping. It has the same V-Slice cutter technology used in the Omnivore Series. Powered by a 1 hp motor, this smaller grinder is designed to operate on a standard 115- or 230-volt circuit, requiring only a 20-amp breaker. No special wiring is needed. The pump comes with a 2-inch vertical-style discharge and a standard leg pattern matching the LE Series. This allows for an easy retrofit into existing systems. Compact factory-assembled systems are available in simplex and duplex versions: the ProVore 380 and ProVore 680. **800-543-2550; www.libertypumps.com**



Smith & Loveless CAPSULAR Underground Pump Station

The **CAPSULAR Underground Pump Station** from **Smith & Loveless** provides an operator-friendly and economical solution for large-flow pumping up to 20,000 gpm. With a Safe-Stair entryway module and integrated HVAC, the pump station design meets the OSHA definition of "designed for continuous human occupancy" and therefore does not require classification as confined-space entry. It comes with simplified-yet-powerful QUICKSMART Touchscreen Controls and a spacious interior offering a variety of user options including shelving, work desks, sinks and storage. The station is pre-engineered and fabricated, allowing for simple installation and future flow capacity increases via adaptation of additional pumps or larger rotating assemblies. **800-898-9122; www.smithandloveless.com**



(continued)

HITCH & TURN



Valve Maintenance Trailers

Wachs makes complete valve maintenance trailers that are ready to hitch up and start turning valves. Our Standard LX and Grand LX trailers contain everything needed for daily operations: pressure washer, vacuum, spoils tank, class 2 hydraulics, valve exerciser(s), and a wireless handheld controller that runs our industry standard VITALS valve maintenance software.



WACHS Utility Products
The Valve Maintenance Experts™

Extend the Life of Your Valves

Call (847) 537-8800 or Visit
turnvalves.com/MSW

PRODUCT FOCUS

PUMPS, LIFT STATIONS AND CONVEYANCE

Vaughan self-priming Chopper Pump

Self-priming **Chopper Pumps** from **Vaughan** are designed to be easily accessed outside of the wet well while pumping waste solids at heavy consistencies, without plugging or dewatering of the solids. They eliminate the loss in production and mess, along with making it easy to service the pump to get it back in operation. 888-249-2467; www.chopperpumps.com



VALVES

Cla-Val Model XP2F

The **Cla-Val Model XP2F** is an all-encompassing data acquisition instrumentation package option available for any Cla-Val control valve. It has flow calculation data and is a differential pressure-based solution and comes complete with pressure transmitters, a valve position transmitter and flow calculation module. It is IP 68 rated, has 12-24-volt DC input, four analog inputs and four analog outputs with the ability to accept additional field instrumentation and retransmit measurements to PLC/SCADA via 4-20mA signals. 800-942-6326; www.cla-val.com



Flomatic Valves 80DI-VFD Submersible Pump Check Valve

Engineered to perform from the inside out, epoxy coated ductile iron **80DI-VFD Submersible Pump Check Valves** from **Flomatic Valves** are engineered to prevent water flow reversal while operating in wide water flow range applications. NSF/ANSI 61 approved, their exclusive poppet system automatically closes tightly and quietly after each pump cycle to prevent backflow. Features include a self-cleaning seat/stem, which helps increase service life of the application, and an optional break-off plug, which is convenient when servicing the system. Benefits include low head loss, corrosion resistant internals and a custom-molded nitrile (Buna-N) seal. They are designed for horizontal or vertical installation and specifically built for use with submersible pumps utilizing VFDs or applications where it's necessary for a check valve to be installed in a well casing. 800-833-2040; www.flomatic.com



JAECO Fluid Systems Stainless Steel Check Valves

JAECO Fluid Systems offers a broad line of stainless steel check valves to control backflow of critical fluids. They have male-to-male NPT threads and a durable design that is suitable for injection line and metering pump applications. The 316 stainless steel valves are compact and provide maintenance-free, dependable service. Options include spring-loaded ball or poppet valves with 2 or 10 psi cracking pressure and Viton or PTFE O-rings. 877-778-3456; www.jaecofcs.com ♦



HANDS-FREE CREW COMMUNICATION

MAXIMIZE EFFICIENCY | IMPROVE SAFETY | BOOST PROFITABILITY



**MORE HEADSET OPTIONS
THAN ANY OTHER SYSTEM**

"CrewPlex helped us dramatically. We boosted our productivity by doing 12 hours worth of work in a regular 8-hour day."



NATHAN BOULWARE
FSC ELECTRICAL CONSTRUCTION



Call or visit to learn more about **CREWPLEX**.

Copyright © 2022 CrewPlex. All rights reserved.

+1.334.321.1400
sales@crewplex.com
www.crewplex.com



READY FOR ACTION!

**PUT A NEW SPIN ON
LIFT STATION CLEANING!**

- **ELIMINATES WASTEWATER DISPOSAL.**
Emulsifying the grease allows the operator to pump the wastewater to a treatment plant.
- **FAST & EFFICIENT.**
Just lower the nozzle into the wet well and reach all the spots you want to hit in a matter of minutes.
- **SCOURING FORCE & DEBRIS-FLUSHING.**
Four radial rotating jets propel water, cleaning the walls, then act like a blender at the bottom liquefying grease chunks suitable for treatment.
- **5 models available to fit connections from 1/2" - 1-1/4"**



**CALL 877-ENZUSA1 FOR
(369-8721)
A DEALER NEAR YOU**

ENZ USA INC. • 1585 Beverly Ct., Unit 115 • Aurora, IL 60502
www.enz.com



Golden Jet Radial RotoJet
RGS Nozzle (Type 01.100A/L5)



Surge relief angle valves prevent surge damage on lift station

Problem:

New freeway construction required an existing lift station to be relocated in the city of Phoenix. The new location was in a hilly part of town with some significant elevation changes that could potentially cause a damaging surge event.

Solution:

APCO brand **SRA surge relief angle valves** from **DeZURIK** were installed on the lift station to prevent line damage from surges that occur when the lift station pumps cycle on and off. The valve is an elbow body-style surge relief valve that is held normally closed by a compression spring or system of nested springs. These valves are designed to prevent damage from water hammer in the system by opening when the system pressure exceeds the set shut-off pressure of the valve disc. As the disc opens, the surge pressure rise that caused it to open is spilled and dissipated through the open valve. When system pressure drops below the set shut-off pressure, the valve disc slowly closes against the oil contained in the cushion cham-



ber and cylinder. The valves are designed with a smooth flow and minimal obstruction to flow for efficient surge relief. The surge valves at this lift station were installed and set to relieve system pressure at 135 psig.

RESULT:

The lift station now discharges into a force main system. DeZURIK PEC eccentric plug valves are used as isolation valves on the lines. The valves continue to perform as designed. **320-259-2000; www.dezurik.com**

Flushed wipes plague high-rise until pump system saves the day

Problem:

A 23-story, 320-unit Austin, Texas, high-rise residence building with a grocery store and restaurant experienced frequent pump clogs, with six faults in two months. The primary culprit: not so "flushable" wipes. The building management team needed a solution. Despite multiple notifications to the building occupants, the team had no control over what was being flushed, clogs persisted and pump service charges were piling up.

Solution:

Installing an **OverWatch Direct In-Line** pump system from **Industrial Flow Solutions** saved the day by eliminating the wet well entirely. Now, wipes and fats, oils and grease are no longer a problem because influent is lifted directly from the gravity invert and they don't have the opportunity

Did you know that mechanical seals cost the same as applied seals but last 3.5 times longer?

The American Society of Civil Engineers (ASCE) reported a mechanical seal and an applied seal cost about the same, but mechanical manhole frame-chimney seals will last 3.5 times longer.* Contact a Cretex representative to learn more about the LSS Internal Chimney Seal advantages for new construction and rehabilitation projects.



* Data provided by the ASCE Manuals and Reports on Engineering Practice No. 92, "Manhole Inspection and Rehabilitation", 2008 Update.



Cretex
Specialty Products

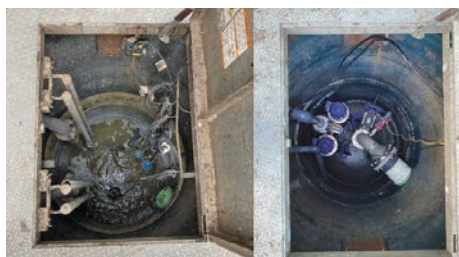
800-345-3764
info@cretexseals.com www.cretexseals.com

to separate and solidify. Fibrous materials are contained in solution and ejected from the system before solidifying. Since the influent is also contained, it never becomes atmospheric, which eliminates odors and dangerous gases.

The system also prevents grease buildup on basin walls that can cause leaching into the adjacent soil or groundwater.

RESULT:

This technology not only eliminates the wet well, but also eliminates clogs, odors, gases and maintenance. The building management team is saving time and money with this installation. **860-631-3618; www.flowsolutions.com**



Combining radio and wireless broadband provides city with reliable SCADA system

Problem:

The Public Works and Utilities Department of Duluth, Minnesota, manages all aspects of the drinking water, sanitary sewers and natural gas for the city and some of the surrounding communities. The department and city leaders realized that much of the SCADA infrastructure that the citizens relied on for these services had significantly aged and needed to be updated.

Solution:

PRIMEX was selected as the contractor and integrator to develop and manage all aspects of the rejuvenation of the city's SCADA infrastructure. The biggest issue was that the control equipment for all three entities (wastewater collection, drinking water distribution and natural gas distribution) was obsolete and not in working order. The 2 1/2-year project included control modification to every site, including radio telemetry to connect all remote sites with the central SCADA system running on **Wonderware System Platform** for all three entities. Historically, the topography of Duluth made radio communication a challenge. To solve this problem, PRIMEX developed a combination of radio and wireless broadband to provide redundant systems that ensured reliable communication.



RESULT:

PRIMEX was able to deploy the Wonderware System Platform across all three entities and yet use only one application. Redundant servers and redundant communications links were used to ensure all communications and remote sites operated as desired. PRIMEX has been retained as the SCADA integrator for the city. **844-477-4639; www.primexcontrols.com** ♦

ENGINE DRIVEN DIAPHRAGM HIGH PRESSURE/FIRE SELF PRIMING ELECTRIC STRAIGHT CENTRIFUGAL HVAC/BOOSTER COOLANT SUBMERSIBLE DRUM PUMPS



A Gorman-Rupp Company





The Pump People.

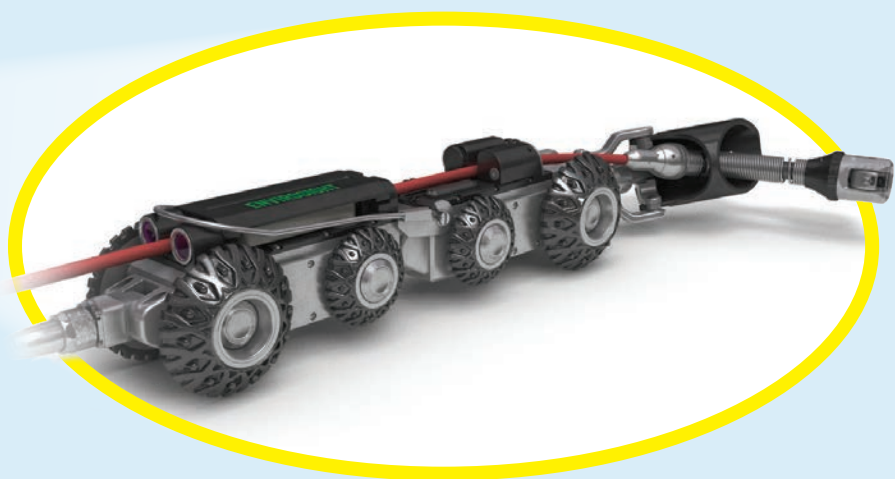
Please visit us at www.amtpump.com

ENGINE DRIVEN DIAPHRAGM HIGH PRESSURE/FIRE SELF PRIMING ELECTRIC STRAIGHT CENTRIFUGAL HVAC/BOOSTER COOLANT SUBMERSIBLE DRUM PUMPS

Product Spotlight

Lateral launch crawler quickly locates cross bores

By Craig Mandli



Locating cross bores can be a long, tedious process without the right equipment. Since there are only so many work hours in the day, the ROVER X SAT II lateral launch inspection crawler from EnviroSight is designed to find cross bores and illicit flows with speed and versatility.

Its steerable 8x8 drivetrain reaches crawl speeds of 98 feet per minute with a range of 984 feet, and the camera head launches 147 feet into laterals at up to 23 feet per minute. With quicker inspections, you succeed in accomplishing more per deployment and more per hour. In addition, its new belt drive minimizes pushrod wear and tear and increases uptime and productivity.

“Most lateral launch crawlers use geared or abrasive rollers to propel the launch camera into a lateral. These mechanisms have a habit of wearing dead spots in the pushrod, which diminishes launching power over time,” says Jake Wells, director of marketing for EnviroSight. “We devised a drive belt system that delivers excellent pushing force while inflicting little wear on the rod. The implications for reducing downtime and cost-of-ownership are profound.”

The ROVER X SAT II can be maneuvered past mainline obstacles like debris, sludge, roots, offsets and protruding taps. Its wheels can be swapped without tools, and launch tube extensions can be custom-cut

from standard PVC tubes to address challenging lateral geometries. All told, it offers launch capabilities in pipes from 6 to 80 inches in diameter. The crawler’s hinged body bends through vertical accesses as narrow as 12.5 inches in diameter, and locks rigid when not needed. It includes a launch camera with 360-degree pan articulation and +150/-30-degree tilt, a 5-megapixel aiming camera that offers digital pan/tilt/zoom capability for pinpoint launching in any size line, a rear-facing camera to help manage cable during reverse crawl, and other built-in sensors to monitor pressure, inclination and travel distance. Twin sonde transmitters allow accurate location of crawler and launch camera.

“Launching in larger lines is a mechanical challenge,” Wells says. “The crawler’s aiming mechanism has to move with force and precision, and then hold very steady during launch. We really beefed up that mechanism to ensure reliability in these extreme cases.”

The feedback from municipal and contractor customers has been glowing. “They say they have the power and maneuverability to complete more launches, and that the reliability of the system — the push mechanism in particular — helps them avoid downtime,” Wells says. “We’ve also heard that the lack of wear on the pushrod and push mechanism bodes well for substantially reducing maintenance costs.”

866-936-8476; www.envirosight.com

Elastec DrumIt drum-filling vacuum head

Elastec’s DrumIt is a drum-filling vacuum head with an automatic shut-off setup. Simply connect the DrumIt to any vacuum source, such as a vacuum truck, to intercept liquids or solids. DrumIt fills each drum to a consistent level every time. The lid assembly is constructed in stainless steel and fitted with a 3- or 4-inch cam-lock coupling. It is suitable for U.S. standard 55-gallon open-top oil drums with an opening diameter of just under 24 inches. (Oil drum sold separately.)

618-382-2525; www.elastec.com



Mueller Water Products HYMAX Grip for gate valves and hydrants

Mueller Water Products now offers its HYMAX Grip restraint on the 4- to 12-inch A-2361 Mueller Resilient Wedge Gate Valves and Super Centurion 250 fire hydrants. It is a versatile, single-bolt restraint capable of joining a wide selection of pipe types and diameters, resulting in easier, more flexible installations. The factory-assembled grip restraint reduces installation time and effort. Coupled with the A-2361 Mueller RWGV and Super Centurion 250 fire hydrant, the HYMAX Grip restraint helps to drive improvements in planning, efficiency and cost savings within the water network. 800-423-1323; www.muellerwaterproducts.com



SPECIAL REPORT

Patterson Davit Cranes



Give your operations a lift with Patterson Davit Cranes, available in ½-ton and 1-ton capacities. The low maintenance, easy-to-assemble design offers adequate reach to accommodate lifting

large loads within tight spaces, and a boom that can be adjusted to nearly 45 degrees to allow for clearance over obstructions such as handrails. Built for durability, it comes standard with a hot-dipped galvanized finish and stainless steel hardware to prevent rust and corrosion in wet work environments. Following Patterson's tradition of safety-focused innovation, the davit features a reliable brake to keep loads in position without creeping. For over 160 years Patterson has been a trusted supplier of winches, rigging, fittings and custom products for lifting applications. Patterson Davit Cranes are made in the U.S.A. and deliver on the company's promise of helping businesses run safer, easier and faster. Find out how Patterson can improve employee safety and positively impact your bottom line. **800-322-2018; www.pattersonmfg.com/davit-crane**

SPECIAL REPORT

OZ Lifting Products stainless series



OZ Lifting Products' stainless steel range includes chain hoists, trolleys and beam clamps, all designed for use in corrosive environments. The centerpiece of the line is the lightweight stainless steel chain hoist, which helps lift loads with minimal effort but is durable enough for the industry's most demanding applications. The hoists feature fully enclosed gearing; fully machined lift wheel; weatherproof holding brake; roller bearings on all gears and shafts; and forged stainless steel hooks and safety latches. Chain hoists, like the trolleys, are available in 1/2-, 1- and 2-ton capacities. The stainless push beam trolley fits most I, S and W beams and has precision ball bearing trolley wheels. The beam clamps are available in 1- and 2-ton capacities. All products in the line are made from Type 304 stainless steel and come with individual test certificate and serial number. **800-749-1064; www.ozliftingproducts.com**

Hercules Shutout manhole sealant and lubricant

Hercules, a part of the Oatey family of companies, launched Shutout, a non-toxic, universal manhole sealant and lubricant that reduces inflow and makes manhole maintenance easier. Shutout is applied to manhole frames to create a seal, enabling airtight and watertight frames and cover interfaces. It adheres to dry, wet, hot and cold surfaces, offering optimal protection in both freezing and high temperatures. Using Shutout requires no additional training and only takes a couple of minutes to apply, including preparation and cleanup. Applied with a caulking tube, Shutout can be easily transported for use as part of regular operations and maintenance activities. Shutout also makes it easier to open manhole covers, providing lubrication that prevents rust and corrosion between the two metal surfaces, decreasing the force required to open the cover. **800-321-9532; www.oatey.com**



QED Well Wizard ST100 groundwater sampling pump



QED Environmental Systems' Well Wizard ST1000 groundwater sampling pump provides high sample accuracy and reliability of QED's Well

Wizard dedicated bladder pumps in a smaller-diameter format. The sampling device is the heart of every low-flow groundwater monitoring system. The 0.8-inch ST1000 can sample wells as small as 1 inch in diameter at depths over 600 feet, and wells can be sampled at almost unlimited depth with its optional drop tube inlet kit. The pump also fits larger wells with partial obstruction. It has a 316 stainless steel construction and uses QED's exclusive DuraFlex PTFE bladder formulation. The pump has an operating pressure of up to 300 psi. **800-810-9908; www.qedenc.com**

Vac-Con PRO hose reel

The PRO hose reel from Vac-Con offers 16 feet of traversing motion across the front of the machine and 180-degree articulation for 69.6-square-feet of working coverage. With 115% more coverage than the standard Vac-Con articulating hose reel, this flexibility allows operators access to manhole and lift station locations without having to park the unit precisely over the job site. A front-mounted camera system and companion ARC visual screen provides 180 degrees of visibility to the driver in the cab with a generous range to park the unit and still have access to the manhole. Adjustable motions allow for any operator to comfortably use the system. The control panel features four rotational positions, an 8-inch vertical adjustment and an arm rest at the joystick. The PRO Reel can accommodate up to 850 feet of 1-inch hose. **904-284-4200; www.vac-con.com** ♦





Call for Abstracts

Submission Deadline: June 30, 2022

The North American Society for Trenchless Technology (NASTT) is now accepting abstracts for its 2023 No-Dig Show in Portland, OR at the Oregon Convention Center April 30 - May 4, 2023. Prospective authors are invited to submit a 250-word abstract outlining the scope of their paper and the principal points of benefit to the trenchless industry.

The abstracts must be submitted electronically at NASTT's website by June 30, 2022:

nastt.org/no-dig-show



The No-Dig Show is owned by the North American Society for Trenchless Technology (NASTT), a not-for-profit educational and technical society established in 1990 to promote trenchless technology for the public benefit. For more information about NASTT, visit our website at nastt.org.

Virginia Rubber Corp. Founder Harry Ronald Selfe Dies at 86

Harry Ronald Selfe of Clifton, Virginia, founder of Virginia Rubber Corp., died at Arden Courts Memory Care unit Jan. 14, 2022, at the age of 86.

Selfe began his career in the industry as a salesman at Industrial Rubber in Maryland. In June of 1974, he left Industrial Rubber to form Virginia Rubber Corp., selling industrial hose and supplies. Working with two salesmen, he grew the business and interacted with many vendors, creating long-lasting relationships that survive today.

When his son Ron took over in 2007, Selfe came to work daily, attending the pumper trade shows and meeting with vendors. As his memory declined and the business grew, he would still come to work daily, helping out as best he could. Cars and biking were his passions and he spent much of his time with his beloved employees talking about them.

He is survived by his wife Judy, sons Ron and Brian, Brian's wife Andy, and granddaughter Tori.

Reed Manufacturing celebrating 125 years

Erie, Pennsylvania-based Reed Manufacturing is celebrating 125 years in 2022. Carl Reed, along with three partners, started the business in 1896 by manufacturing pipe wrenches and plumbing supplies, and also scales, bicycles and laundry machinery. In 1902 Reuben Wright of Westfield, New York, bought Reed and installed his sons to run the business. His great-great-grandsons Scott, company president and chairman of the board, and Mark, a board member, are still actively involved with Reed today.

Aries awarded Sourcewell contract

Aries Industries was awarded a cooperative purchasing contract by Sourcewell. Sourcewell is a self-sustaining government organization offering a cooperative purchasing program with more than 400 competitively solicited contracts to government, education and nonprofit entities throughout North America.

Aquarius Spectrum to partner with EJP

Israel-based Aquarius Spectrum is expanding its operations in the U.S. with the announcement of a new partnership with Everett J. Prescott. EJP will introduce and deploy Aquarius acoustic water leak detection technology in the 10 states in which they operate, enabling more water utilities to solve water loss challenges caused by hidden background leaks.

Franklin Electric announces recipients for outstanding achievements

At Franklin Electric's annual Commercial Summit — a gathering of team members from across its operations — winners of this year's awards for outstanding performance, sales and customer support were announced. The winners named were Field Salesperson of the Year, Jimmy Vela; Field Service Engineer of the Year, Ryan Horner; and Team of the Year, U.S. South Central Region. The team members, led by Darol Hayes, included Chase Ellsworth, Dave Batdorff, Erasmo Barron, Ilse Gallegos, Jennifer Ford, Jesse Zwiebel, Jimmy Vela, Hannah Kiningham and Woody Kunkel.

Brown and Caldwell appoint Mid-South leader

The environmental engineering and construction firm Brown and Caldwell announced Erin Williams joined the firm as vice president and leader of its Mid-South business. Bringing over 17 years' water engineering design and construction experience, Williams will help municipal and private clients meet challenges related to capital program implementation, infrastructure reliability and effective utility management.



Erin Williams

Clayton County Water Authority wins awards

The Clayton County (Georgia) Water Authority earned the Georgia Association of Water Professionals Consumer Confidence Report Award for Large Surface Water Systems during the association's fall conference in November. Clayton County Water Authority's communications and community relations department won a 2021 Public Relations Society of America - Georgia Chapter Phoenix Award in the Community Relations - Associations/Government/Nonprofit Organizations category for its I'm Invested! CCWA Rate Awareness Campaign. The campaign was a collaboration with Jacobs Engineering.

ADS issues 10-year sustainability goal report

Advanced Drainage Systems announced the release of its 10-year sustainability goals in its newly launched Fiscal 2021 Sustainability Report. The report and goals can be accessed in the sustainability section of the company's website. Highlights of the report include 510 million pounds of recycled plastic used in the company's products; 6% decrease in greenhouse gas emissions; \$4.5 million in capital spent on environmental, health and safety projects; and key partnerships formed with nonprofit organizations that share a commitment to recycling, water and community.

AWWA Board selects president-elect

The American Water Works Association's board of directors selected Patrick Kerr of Baton Rouge, Louisiana, as the association's next president-elect. He was selected during the board's annual winter meeting, which was conducted virtually. Kerr will begin his term as president-elect in June at the conclusion of AWWA's Annual Conference & Exposition, and his term as president begins in June 2023. He follows current president-elect Joseph Jacangelo. Kerr has been a member of AWWA for 28 years and is the chair of the Water Utility Council and an active member of the Southwest Section. He is president and CEO of Baton Rouge Water Works Co. in Louisiana. ♦

 From Water Environment Experts



LIFT LARGE LOADS IN TIGHT SPACES

WITH A BOOM THAT CAN BE ADJUSTED TO NEARLY 45 DEGREES WITH EASE.

NEW
Patterson
Davit
Cranes

Reliable Brake with Long Life
& Readily Available Parts

Easy to Assemble & Maintain

1/2-Ton & 1-Ton Capacities



800.322.2018 | PattersonMfg.com/msw

JOIN
The Conversation.
The Camaraderie.
The Community.

www.facebook.com/MSWmag

www.twitter.com/MSWmagazine

www.plus.google.com

www.youtube.com/MunicipalSewerWater

www.linkedin.com/company/municipal-sewer-&-water-magazine

JETTERS-TRAILER



The Hot Jet II® is a best-selling hot- and cold-water drainline cleaner featuring a 35 hp Vanguard engine by Toyota and delivering 10 gpm @ 4,000psi that cleans drains up to 300' and 12" in diameter. Priced at \$39,995 the Hot Jet II® is American made using nonproprietary parts for affordability and ease in serviceability making its return on investment truly impressive. Prices subject to change. Financing available. 800-624-8186; sales@hotjetusa.com; www.hotjetusa.com (MBM)

JETTERS-TRUCK



2005 International 7600 Jeter/Vacuum Truck 6 x 4. Vactor 2100 Series Vacuum Body, Cummins Engine, Push button Transmission, Aluminum Water Tanks, Floation Fronts, 65,000k GVW, Showing 16630 Hours, Odometer 119,678k miles, PRICE \$60,000. Please contact Mitch@mitchellcontractinginc.com or call 985-200-0518. (M07)

SERVICE/REPAIR

Dynamic Repairs - Inspection Camera Repairs: 48-hr. turn-around time. General Wire, Ratch, Ridgid, Electric Eel, 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



2018 Ford F550 Combo RowerX/SAT System including the following: RAX300 cable reel, RCX90 Zoom camera for mainline inspection, DCX5000 controller, Rover X SAT Lateral launch cable reel, Rover X SAT Lateral launch tractor Pan and Tilt lateral camera Rack mount computer with Windows 7 Pro, Intel I-Quad 1333FSB Processor, PCI wireless ER, 2GB DDR-3 1600FSB RAM, 2 Seagate 500GB SATA-2 hard drives, DVD-RW Supreme Box with EnviroSight SAT build. \$185,000. Please note we have (2) 2018 Ford F550 Combo RoverX/SAT Systems for sale. (See other ad) Contact Mitch@mitchellcontractinginc.com or call 985-200-0518. (M05)

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, lbak, Rausch, RST, Schwalm & IDTec. ORDER TODAY at www.TruGritTraction.com; info@trugrittraction.com; 407-900-1091 (MBM)

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: 888-390-6794; Fax 888-390-6670; pipetoolspecialties.com or email pts4422llc@gmail.com. (MBM)

WORTH NOTING

PEOPLE/AWARDS

The **Southeast Michigan Council of Governments** received a \$62,204 grant from the Michigan Department of Environment, Great Lakes and Energy to identify high-priority publicly owned properties based on public input and assess feasibility for green stormwater infrastructure.

The **city of Kenosha** received a Local Award for Excellence from the Wisconsin Association for Floodplain, Stormwater and Coastal Management for its efforts to mitigate major flooding issues.

The **city of Auburn** (Kansas) received \$330,765 in Community Development Block Grants for stormwater street improvements.

Charlotte-Mecklenburg Storm Water Services (North Carolina) received an Excellence in Communications and Green Infrastructure Award from the National Association of Flood and Stormwater Management Agencies.

The **city of Fredericksburg** received a \$3.25 million grant from the Virginia Department of Environmental Quality to aid in improving the city's overall stormwater quality and its effects on the Rappahannock River.

Woolpert promoted **J.P. Johns** to water market director. Johns is a member of the Southeast Stormwater Association and the Florida Stormwater Association.

KPFF Consulting Engineers promoted **Peter Craig** to the role of associate. Stormwater design is among his areas of expertise.

Al Cablay was hired as the director of public works for the city of New Bern (North Carolina). Stormwater inspections is among his specialties. ♦

CALENDAR

May 2-4

Montana Stormwater Association Annual Conference, Holiday Inn Downtown, Missoula. Visit mtstormwaterconference.org.

June 5-8

American Society of Civil Engineers World Environmental and Water Resources Congress, The Hyatt Regency Atlanta Hotel, Atlanta. Visit asce.org.

June 12-15

American Water Works Association ACE22, Henry B. Gonzalez Convention Center, San Antonio. Visit awwa.org.

June 27-29

Water Environment Federation Stormwater Summit, Hyatt Regency, Minneapolis. Visit wef.org.

Aug. 28-31

American Public Works Association Public Works Expo 2022, (hotel TBA), Charlotte, North Carolina. Visit pw.apwa.net.

Aug. 29-31

Smart Water Summit, Hyatt Regency Hill Country Resort & Spa, San Antonio. Visit smartwatersummit.com.

Sept. 11-14

American Water Works Association Water Infrastructure Conference, (hotel TBA), Portland, Oregon. Visit awwa.org.

Sept. 26-28

StormCon and National Rural Water Association WaterPro Conference, Gaylor National Resort and Conference Center, National Harbor, Maryland. These events are being held as parallel conferences. Visit nrwa.org or stormcon.com.

Oct. 24-26

California Stormwater Quality Association Annual Conference, Palm Springs Convention Center, Palm Springs, California. Visit casqa.org.

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

MUNICIPAL
**SEWER
&
WATER**

AVERAGE MONTHLY CIRCULATION REACHES

30,000+ READERS!

SUBMIT YOUR CLASSIFIED AD **ONLINE**
at www.mswmag.com

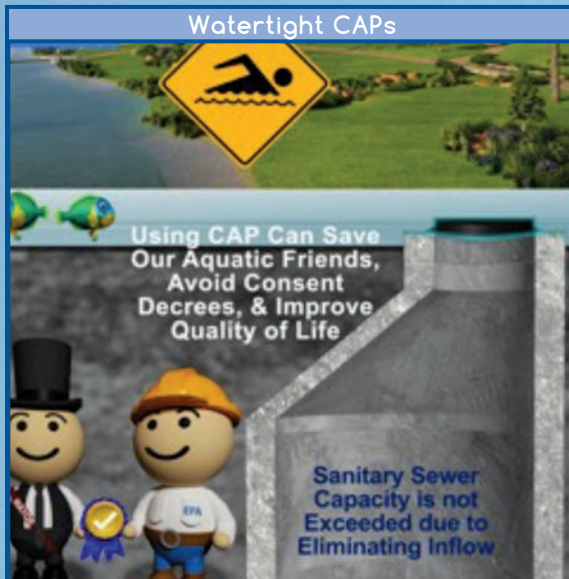


**Get new content
right to your inbox!**

www.MSWMag.com/alerts



Not Just a Manhole Cover... A Solution for Water Pollution!



www.justcapthat.com/i%26i

Follow link to watch full animation explaining how inflow can cause water pollution, and how watertight CAPs prevent inflow, so ...

Just CAP That!®

Composite Access Products (CAP) • 5216 N26th St, McAllen, TX 78504 • www.justcapthat.com • 844-344-CAP1



VALVE-OUT TOOL

FLANGE SPREADING & VALVE REPLACEMENT



Spread outside flanges & remove old valve



Prepare gasket surfaces



Reinstall new valve

VALVE-OUT TOOL WORKS ON FLANGES WITH BOLT HOLES FROM 3/4" TO 1-3/8" (STUD SIZES 5/8" TO 1-1/4")

CAN BE USED ON ANY VALVE WIDTH

REQUIRES NO GAP AND CAN BE USED TO SPREAD FLANGES AND REPLACE GASKET

SAFER, FASTER, EASIER

EMAIL: SALES@SMPTOOLS.COM

PHONE: 713-667-4402

Watch it in Action Right Now!



ASK ABOUT OUR
Water Service Kit



RAISING AMERICA
AHP
ONE INCH AT A TIME

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

PIVOTED TURNBUCKLE MANHOLE RISER



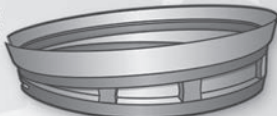
The Most Efficient and Powerful Expanding Riser on the Market.

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

HOTJET II

OUR BEST SELLING DRAIN LINE JETTER COMBINED WITH A POWERFUL HYDRO-EXCAVATOR/VACUUM SYSTEM



- JETTER
- HYDRO-EXCAVATOR
- VACUUM
- POWER WASHER

HotJetUSA
1-800-624-8186
WWW.HOTJETUSA.COM

OVER 30 YEARS BUILDING QUALITY EQUIPMENT
PRICES SUBJECT TO CHANGE - CONTACT US FOR A QUOTE!



Cua Claws

A Simple Solution for Slippery PVC Pipe -

21 Years of Service

We resurface all makes of steel transport wheels

CALL JERRY AT 714-697-8697
www.cuaclaws.com

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

OceanQuip Connectors

ORCA TOUGH CABLES



Your #1 Source of Aftermarket Video Inspection Cables, Connectors, and Pigtails

504.738.7833
info@oceanquipconnectors.com
www.oceanquipconnectors.com

OFF-THE-SHELF & CUSTOMIZED ODOR CONTROL SOLUTIONS



Wastewater Systems, Manufacturing Plants, Breweries, Mines & More

Simple Solutions (866-667-8465)
DISTRIBUTING LLC 973-846-7817 in NJ

sales@industrialodorcontrol.com
IndustrialOdorControl.com

866-NO-STINK (866-667-8465)
973-846-7817 in NJ

AMERICAN JETTER.COM



51T Trailer Jetter Hot or Cold
20 GPM @ 4000 PSI
76 HP Kohler EFI
FREE Shipping/Delivery



58 Trailer Jetter Hot or Cold
10 GPM @ 4000 PSI
38 HP Kohler EFI
FREE Shipping/Delivery

866-944-3569

Follow MSW on

www.facebook.com/MSWMag | twitter.com/MSWMagazine

CONFINED SPACE ENTRY PACKAGE

ONLY \$3,195

The Best Package On The Market Includes:

- 4-Gas Air Monitor (3 Year Sensor Warranty)
- 7' Tripod
- 3-Way Fall Protection
- Work Winch
- Full Body Harness

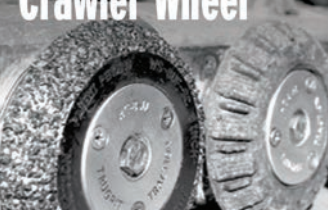


Add a Blower with 15' of duct for only \$400!
Add a 5 Minute Escape Respirator for only \$500!

MTECH 800.362.0240
www.mtechcompany.com

TRUGRIT

The world's first flexible, patented Carbide Grit Camera Crawler Wheel™



- Gains traction
- Never gets dull
- Doesn't damage pipe
- Fits all major camera brands
- We have gritted tracks, too.

TruGritTraction.com | 407-900-1091

ESSENTIAL EQUIPMENT FOR ESSENTIAL WORKERS



HAVE YOU CHECKED OUT
OUR NEW G7 JETTER TRAILER?



For the #1 Choice Manufacturer of Custom-Built industrial and municipal vacuum equipment, GapVax has what you need! Air Movers, Jetters, Hydro Vacs, Combo JetVac, Recycle JetVacs, Skid-mounted vac units, Parts and accessories & more! Check out gapvax.com for more information and keep up to date with us on social media!



281-884-8658
LA PORTE, TX

Twitter Instagram Facebook YouTube LinkedIn
GAPVAX.COM

888-442-7829
JOHNSTOWN, PA

WE MADE THE BEST EVEN BETTER.



The 2100i employs advanced technology that not only enhances the performance of the equipment but the individuals who operate it. Less fatigue. More comfort. Push button operation. Greater precision. Superior power and performance. Controls that truly put the operator in control. All of this in a system designed to be the ultimate in ruggedness, reliability, simplicity and value.

Vactor has proudly been dedicated to continuously improving combination sewer cleaners for over fifty years. Our team is looking forward to showing you the latest innovations. More than a manufacturer, Vactor offers you customized solutions featuring unmatched quality and backed by powerful support. Vactor is the brand you can trust.

Features:

- ***The revolutionary IntuiTouch® control system***
- ***Low-maintenance Jet Rodder® water pump***
- ***Exclusive Modul-Flex design***

© 2022 Vactor Manufacturing, LLC

VACTOR® 2100i

**TO SEE OUR FULL LINE
OR REQUEST A DEMO**

