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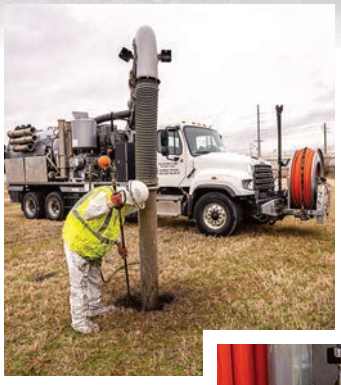

It's an exciting season at Vac-Con as we begin our 33rd year in business. The past year brought with it an abundance of opportunities, challenges and successes, and we are looking forward to putting all we learned and achieved into 2019.

Edition 7 of *IVT magazine* will inspire both returning and new readers as we continue to engage and interact with the best dealers and end users in the industry. We anticipate that 2019 will be our best year yet as we continue to focus on the customers and the growing demands of the market.

This issue details both new and loyal customers and the many projects and roles with which they are engaged in their communities. Our market continues to evolve with the release of products and techniques that provide efficiency and quality on the job site. Vac-Con is proud to be a leader in the innovation and manufacturing of such products, and we hope that those reading have experienced the power of our machines, our people and our culture.

We hope 2019 brings you and yours good health, happiness and prosperity!

Todd Masley
Executive Vice President
Vac-Con, Inc.

VAC-CON

IVT is a specialty publication produced by COLE Publishing, Inc. on behalf of Vac-Con, Inc. and is distributed to nearly 8,000 private, industrial and municipal vacuum truck owners throughout North America. This publication is dedicated to showcasing Vac-Con's outstanding products and industry leading customer service through its extensive network of authorized dealers. For more information on Vac-Con or feedback on this publication, our products, employees or dealers, please contact us at 904-493-4969, or online at www.vac-con.com.

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Better Together

Two New York Public Works departments go all-in on hydroexcavation unit

By Jared Raney

PHOTOS BY **KEVIN BLACKBURN**

Village of Scarsdale (New York) Public Works Department

Population: 17,000
Sanitary sewers: 81 miles
Stormwater catch basins: 2,000
Water mains: 100 miles
Connections: 5,600
Website: www.scarsdale.com/166/public-works

Keeping up with the cost of repairs and replacement of an aging water system is cumbersome for any municipality, but the Scarsdale (New York) Public Works Department found a way around that: sharing assets between departments.

Instead of spending hundreds of thousands on equipment for both water and highway departments, management in Scarsdale decided to put a hydroexcavator attachment on the highway department's vacuum truck, splitting the cost between the two budgets.

"A cooperative share just made sense. It actually boosts the whole morale of the various departments because we're working together with the same piece of equipment, and it's doing a great job," says Benedict Salanitro, superintendent of Public Works. "It's just a matter of utilizing current practices and standards and not being afraid to change for the better."

Steven Brady of the Scarsdale (New York) Public Works Water Deptartment guides the vac truck's boom in for an excavation operation.

The idea may seem fraught with potential pitfalls at first glance, but it has allowed the small, mostly residential community to care for both sides of the infrastructure at half the cost.

THE RIGHT PUSH

Salanitro has been with the village for about 20 years, and in all that time there was little interplay between water and highway departments, including equipment. But when a new water superintendent, Stephen Johnson, entered the picture about four years ago, he brought along fresh ideas and a willingness to try something new.

"Working on a very antiquated water system that drew a lot of repair, he realized that there has to be a better way," Salanitro says. "Obviously, being part of professional organizations like AWWA and APWA, where you network and talk to other people, the concept of hydroexcavating was discussed.

"He formulated the discussion to retrofit our existing piece of equipment as: We've got nothing to lose; let's try it. The guys, the workers, were a little reluctant, so we said, 'Let's lead by example; let's get it done.' He basically brought it to the forefront."

They started by adding a hydroexcavating attachment to the vacuum truck that Public Works had at that time — a 3-yard Vac-Con. So when it came time to step up their game with a larger 9-yard unit, a hydroexcavation package was part of the plan from the get-go.

"He said, 'Let's do it together. I'll split the costs with you,'" Salanitro says. "We joined our finances together with the water division and we put on a hydroexcavation component, and they have used it for a lot of their system repairs. They've found a tremendous cost-savings and ease of operation. Hydroexcavation has been a godsend to the water division."

Andrew Waldbaun, right, operates the vacuum boom while Brady uses a hydro-excavation lance to break up dirt and guide it into the vacuum in preparation to place new mainline valves.

The Scarsdale Public Works Department has put an emphasis on cooperation with its new vac truck. The Vac-Con unit is used by the municipal water and highway departments.

Above: Benedict Salanitro, superintendent of Scarsdale Public Works

A SOUND INVESTMENT

Scarsdale, a village of approximately 17,000 in the New York metropolitan area, has 81 miles of sanitary sewer, 2,000 stormwater catch basins, 100 miles of water main and 5,600 connections.

"As a municipal government, we are fully developed: About 99.9 percent of our territory is developed for housing and other buildings," Salanitro says. "We supply the drinking water to all of it, and we also have sanitary sewer and stormwater infrastructure in place to supply these structures as well."

Much of the village infrastructure dates back to the early 1900s, which makes aging infrastructure a top priority. Point repairs and rehabs are common, and cleaning can be a challenge, which makes a powerful in-house unit well worth the cost.

"It's an antiquated system, so the challenges that we face are cost and repairs, doing a lot of the work in a preventive manner to just making sure the system is operating. And there's a lot of on-the-ground investigative work that's done to ascertain the condition — get an overall assessment of the systems."

Scarsdale Public Works contracts out leak detection and analysis services, but with the new Vac-Con in play, Salanitro points out that more is being done in-house.

"It's paying for itself where we're saving a lot of money on outside contractors and doing routine maintenance ourselves. It's an asset. The residents don't realize it, but they get a huge benefit because we're responsive to getting repairs done in an efficient way. It's definitely well on track to paying for itself."

A SMOOTH OPERATION

Previously, Scarsdale contracted out cleaning and hydroexcavation work. Even after purchasing a smaller 4-yard unit over a decade ago, the village still needed help for larger projects. Now, according to Salanitro, the equipment is rapidly paying itself off in saved contractor costs.

"The concept of buying was novel for many people since it was a lot of money," Salanitro says. "But when we started doing a lot of our catch basin cleaning required under the Clean Water Act, we were contracting that out, and it was getting very expensive."

It didn't take long for the leadership at Scarsdale to realize that investing in vacuum trucks pays off big for municipalities, and after beginning the sharing program between the water and highway departments, they went all-in on a 2018 Vac-Con. With a 9-yard debris tank, larger pump and overall higher capacity, Salanitro says it has been a game-changer. "When we got the big boy in, we were like 'Wow, how did we get away with that small guy for so long?'"

The idea of sharing equipment might induce cringes from municipal workers who have seen the hazards of intradepartmental communication, but for Scarsdale, simplicity is key to making the arrangement work.

"The truck sits in the garage, and every morning there's a coordinated discussion between various foremen — who needs what for what reason, and if there's a planned activity between the water division and the highway division, they'll discuss that between the foremen. Sometimes, we've had this happen: We both need it during the same day, so the manpower will go with the equipment. It's been working out very nicely, where they basically have their own operation running, and we share. Overall it's really just been a great piece of equipment for Scarsdale."

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West Melbourne (Florida) Public Works equipment operators, from left, John Marsden, Oadian O'Connor and Donald Gagum set up to clean a sewer line as crew leader Sean Morrisson looks on.

Stepping Up on Safety

Florida city depends upon versatility of new vac truck to keep stormwater flowing

By Pete Litterski

PHOTOS BY **ROB HERRERA**

City leaders in West Melbourne, Florida, know how to make the most of their small city's resources and take care of its major equipment. And yet, when Mark Piccirillo was hired as the new Public Works director in 2017, the city's Vac-Con vacuum truck had passed its scheduled replacement age.

As Piccirillo settled into the job, he took a close look at the existing equipment while preparing to work with the City Council on the scheduled replacement of the aging vacuum truck. The new director found that after 11 years, the truck was still performing well and was being used not only by the city's Water, Streets, and Drainage departments, but also by West Melbourne's Sewer Department, which is operated under contract by Jacobs, a private company.

Piccirillo determined the 11-year-old truck might be a good asset to trade or sell when the city proceeded with its scheduled replacement, but he decided to raise an additional option with the council, making a proposal to keep the truck as a dedicated piece of equipment for the city's sanitary sewer system. Piccirillo says his recommendation was based on several factors including the advantage of having a backup vacuum truck that could be used if the new equipment ever had to be taken out of the lineup for repairs or updates.

He also told the council that having one truck dedicated to the sewer system and the new one used by the Streets and Drainage department as well as the water distribution system makes it easier to ensure there would be less chance of cross-contamination between the water and sewer systems. It also means the city's crews don't have to spend time doing the kind of cleaning and decontamination needed after working on or in West Melbourne's sewers.

"When we deal with potable water, there are so many issues we have to stay on top of," Piccirillo says. By avoiding contact with the sanitary sewer system, city crews avoid many of the possible risks to public health.

Today, the city has two trucks, both assembled a few hundred miles north at Vac-Con's facilities in Green Cove Springs. The new truck was purchased through the Florida Sheriffs Association bid process from Southern Sewer Equipment Sales based in Fort Pierce, less than 60 miles south of West Melbourne. The city uses Southern Sewer Equipment Sales for any maintenance or repairs that its own staff is not equipped to handle.

In addition to price and proximity advantages, Piccirillo says the city had several more reasons for its desire to replace its older vehicle with another Vac-Con truck. "We wanted to keep the same manufacturer so we could take advantage of any interchangeability between the trucks." He says having both trucks in daily use will also help as the city continues what might be its final growth spurt, bringing new construction, new utility hookups and new demands for services that require the capabilities of the new Vac-Con truck.

West Melbourne (Florida) Public Works Department

Population: 21,990
Water customer total: 11,330
Waterlines: 150 miles
Largest water mains: 20 inches
Storm drains: 10 miles
Drainage canals: 10 miles

A DIFFERENT PURPOSE

Officially, the new truck is part of the city's Streets and Drainage department fleet and is staffed with a five-man crew under the direction of crew leader Sean Morrisson. It is used frequently to do routine maintenance and cleaning of West Melbourne's drainage system, making sure that its storm drains, baffle boxes, ditches, settling ponds and canals connecting to Brevard County's canal system can flow freely when it rains. All of West Melbourne's excess stormwater eventually drains into the St. Johns River or Indian River, and city leaders maintain close contact with Brevard County officials who oversee the quality of the water in the rivers as they meet with the Atlantic Ocean.

The truck is also used to help prevent unwanted materials from entering the drainage system when crews use it to pick up and dispose of excess sand and gravel as they perform maintenance and repairs on city streets.

But the city's approach to making the most of its assets really shows when the West Melbourne Water Department calls upon Morrisson's crew to support its work. The truck is frequently used to locate and expose leaking waterlines buried in the sandy soil the city was built upon. West Melbourne is about 4 miles inland from the ocean and midway down Florida's east coast.

Morrisson says the truck serves many different purposes when his crew is called to work on underground waterlines. First, it can excavate quickly and precisely to help Water Department crews when trying to pinpoint the location of a waterline break or a malfunctioning valve in the system.

"Where we are, we're on sugar sand, not the clay and heavy soils that many cities face," Piccirillo says. "We use the vac for locating and soft-digging the leak. It's efficient because you are not digging a big hole, and it's easier to clean up and makes us less intrusive. We're not leaving a lot of material behind because we can suck it up and haul it off."

Morrisson says it is often faster and more economical to repair a site with new sod. "It means that when we leave, you may have a hard time seeing where we even worked."

The streets and drainage crew handles all of the operations of the vacuum truck, Morrisson says, because it makes more sense to train just one crew. And, he says, "They (the Water Department) can just concentrate on getting the actual water break repaired."

Because the city's water table is high and its soil is primarily porous sand, it is important to make the excavations for waterline repairs safe for workers. To that end, Morrisson says the city's new vacuum truck is a big step up. With its 824 Roots rotary positive displacement blower (Howden) drawing power from the truck's 370 hp motor, the Vac-Con can be used to pump out infiltrating water so the crews are not threatened by rising waters or falling sand.

PULLING OUT THE STOPS

Although the vacuum truck is always on call to handle urgent problems in the water distribution system, Morrisson and his crew are kept busy maintaining West Melbourne's stormwater drainage system that moves rainwater out of the city and into the rivers before flooding becomes a problem. Because of the flat, low-lying topography of the city and its location in an area often hit by heavy tropical storms and occasional hurricanes, keeping the drainage systems in the region flowing freely is an important responsibility for the city crews.

The truck is used to clean out the baffle boxes on West Melbourne's stormwater system. The boxes, located at strategic points of the network, slow the flow of the water passing through the system, allowing gravel, sand and other heavy surface waste to settle in one of a series of chambers before the water flows into the county's canals and eventually the rivers.

While the vacuum end of the truck is used to clean out the baffle boxes, the crews also turn to the high-pressure water pump driven by an auxiliary John Deere diesel engine to feed two

> "We use the vac for locating and soft-digging the leak. It's efficient because you are not digging a big hole, and it's easier to clean up and makes us less intrusive. We're not leaving a lot of material behind because we can suck it up and haul it off."
>
> ***MARK PICCIRILLO***

A West Melbourne Public Works operator rinses the vacuum boom after cleaning a sewer line as Logan Davis, maintenance technician, looks on.

Right: The West Melbourne Public Works job site crew includes, from left, Oadian O'Connor and Donald Gagum, equipment operators; Mark Piccirillo, Public Works director; Sean Morrisson, crew leader; Logan Davis, maintenance technician; and John Marsden, equipment operator.

Below: The Public Works Department's new Vac-Con truck ready to roll out to a job site.

high-pressure waterlines that are used to cut and force larger obstacles out of the pipes — from branches and yard waste to items improperly disposed of by people.

"Before the hurricane season, we'll go into our stormwater inlets and clean all of them out," Morrisson says.

In addition to flood prevention, Piccirillo says West Melbourne is concerned about water quality since its stormwater enters the county's canal system that then drains into the local rivers.

"We're making sure we are getting unwanted material out of our system before the water reaches the St. Johns River," he says. "We do it on our end. Anything that has a baffle box or a settlement pond, we make sure that we remove all the sediment to keep a cleaner flow into the canal system. It's a big part of our maintenance operation."

Morrisson adds, "We do our best to keep the water clean before it heads into the county system."

THE RIGHT CHOICE

Between the water distribution system and the stormwater drainage system, Piccirillo says Morrisson's crew stays busy with the new Vac-Con, which confirms that keeping the older truck for the Wastewater Department was a good idea for a city that had just under 10,000 residents at the turn of the century and about 18,500 residents in the 2010 census.

Morrisson says that although the old truck is still serving the needs of the Sewer Department, his crew has been able to take advantage of many advances that were available when the city purchased the new truck.

He said that the addition of a wireless remote control "is huge for the operator who can stand right over the hole and see what they are doing." The remote eliminates the possible delays and missteps that could happen when operators were tied to the truck itself while trying to excavate holes or vacuum lines or settling facilities.

The crew leader is also pleased with the performance of the new truck's three-stage positive displacement blower powering the vacuum system. With the vacuum system driven by the 370 hp diesel engine of the 2018 Freightliner chassis, Morrisson says his crew can now dip the vacuum tube into a pipe or box and suck out a lot more material without worrying about overtaxing the equipment, making the work go faster.

The pumping side of the new system is also a step up, according to the crew leader, who calls the truck "very user-friendly." It comes with two high-pressure guns that can be used in different situations, and Morrisson says one of the guns is so powerful it can do a lot more when it comes to cleaning stubborn debris and blockages out of the storm sewers. "They say it can even cut through concrete if we need to."

Some advantages of the new equipment are more basic, but just as important to the operators in a small, but busy city. Morrisson praises the new truck's self-lubrication system, noting that just four of about 150 grease nipples now require manual service. The rest of the truck's nipples are self-greasing, cutting deeply into the man-hours required for routine maintenance.

Finally, the crew leader says, one of the most valuable options is one that he hopes his crew will never have to use: the truck's redundancy system. "We can use the auxiliary 12-volt electric motor to pressurize the hydraulics so we can retrieve the hoses and equipment that we may have down the hole or in a pipe," Morrison says.

REACHING THE LIMIT

Piccirillo says that now with 22,000 residents and 10,000 water customers, West Melbourne's 10 square miles are about 85 percent built out. He says the current surge of new construction has led to rapid growth and that city leaders have been told that in the next five years they will be completely built out.

As that kind of growth continues, the new vacuum truck spends a lot of time out of the garage and in the public's eye. The new Public Works director understands that the price tag on the new tool was a major investment for both the City Council and the taxpayers.

That's one reason he makes sure to highlight the truck's uses in a weekly newsletter that he sends to the city manager and shares with the public. The newsletter serves several purposes, both highlighting the performance of the new truck and the many functions it can serve in a matter of days.

Mike Beauregard, general manager of Ring Power Utility Equipment in Jacksonville, Florida, stands beside a Vac-Con X-Cavator truck.

DIRECT EXPOSURE

Florida Vac-Con dealer keeps a strategic eye to the future with hydroexcavation line

BY **SARAH UMHOEFER** | PHOTOS BY **ROB HERRERA**

Some partnerships are a natural fit. That was the case for Ring Power Utility's Equipment Division as Vac-Con looked to expand the availability of its hydroexcavation line.

"Todd Masley [Vac-Con executive vice president] approached Ring Power last year with a new opportunity to represent the hydroexcavation line," says Mike Beauregard, vice president of Jacksonville, Florida-based Ring Power Utility. "With our business on the utility side with power companies, we have a direct opportunity for Vac-Con to talk to customers they've never really talked to before. It was direct exposure to an entirely new market, and it's off to a great start."

As this partnership was forming, Beauregard made it a priority to get to know Vac-Con inside and out, a task made easier with Vac-Con's main facility and plant located just 20 minutes from Ring Power headquarters.

"It's very convenient to be able to go over and foster a good relationship and a good partnership," he says. "I've made several trips over there because I wanted to understand the quality, I wanted to understand how hydroexcavators were built and why they are a market leader. So I started walking the floor and talking to people, and what you see is the employees' loyalty to the company."

Beauregard says that Vac-Con's switch to an employee-owned business structure has only bolstered that internal loyalty.

"It makes the employees care about putting out the highest-quality product. When it comes down to it, things are done right, they're done well and they're done on time. Vac-Con is a well-designed machine with a long history of being innovative and bringing new technology, new ideas, to the field. That's really where I was sold on the product and why I'm happy to be doing business with them. Vac-Con is a very professional, well-organized company."

EMPHASIS ON SAFE EXCAVATION

Ring Power represents the Vac-Con hydroexcavation line in Florida and Georgia, where the need for safe digging practices is high.

"With Florida and Georgia being the two states that have accidental line strikes more often than any others, this product line is the ideal fit," he says. "Traditionally contractors would use a digger derrick with an auger on it, but you get into any congested areas, any urban area, and there's a high threat of hitting a line. With what you can destroy by putting an auger in the ground if you grab a fiber bundle or anything like that, it's not worth it.

"Now what we're seeing are companies hydroexcavating a hole and setting casing in it, and then the line crews can come along and everything is preset."

Ring Power Utility Equipment took on the task of representing Vac-Con's hydroexcavation line in 2017 — including the Mudslinger, pictured below. With Vac-Con's focus on safe digging practices, Ring Power Vice President Mike Beauregard knew it was the right fit for their market.

"MY FAVORITE PART OF WORKING WITH VAC-CON IS THE EASE OF WORKING WITH THEM. IT'S EASY TO CALL THEM. IT'S EASY TO GET AN ANSWER FROM THEM. WHEN YOU NEED EQUIPMENT, THEY HAVE IT READY. IT'S NEVER A 'NO.'"

Mike Beauregard

From left, Field Service Master Technician Darren Osbourne, Beauregard and Utility Account Manager Will Courtney stand beside a Vac-Con X-Cavator.

Though Ring Power Utility Equipment services Florida and Georgia as the hydroexcavator dealer, its Vac-Con rental territory stretches across the country. That is how the company was first introduced to Vac-Con about 20 years ago.

"We've had a relationship with Vac-Con and Todd Masley for a very long time. It goes back 20 years, I would imagine, of us representing Vac-Con in the rental fleet," he says. "We rent our equipment all over the country, we can RPO (rental purchase option) our equipment, and we sell our secondary-used equipment. Before this year, the only means we didn't have was going direct to market with new product. Still, we were buying quite a few Vac-Cons every single year. Over the history of Ring Power, we've probably gone through 200-plus Vac-Cons."

BUILT ON QUALITY SERVICE

"Our service and backing what we say we're going to do is what Ring Power was built on. If we tell you we're going to be there, we're going to be there," Beauregard says. "If a product goes down, we're going to make sure it's up. If it can't get up, we're going to have a loaner for you.

"That's what we're all about — understanding that you have a job to do, and if you can't do that job, you can't buy equipment from us. That's our core fundamental: service before and after the sale."

Providing that level of service is why Ring Power has locations in North Carolina, South Carolina and Atlanta, as well as 16 locations in Florida. "In these states, we service everything ourselves in-house. Of our entire company of 2,300 employees, over 1,000 are technicians. It's a very service-based business."

For any rental breakdowns outside this Southeast corner, Ring Power relies on partnerships with service teams in various locations across the country. "We have a 24/7 line that customers can call at any time and there will be a person to speak to, which we think is very critical."

Vac-Con is a key player in delivering a quick response time. "The biggest thing they do for us, from a technical standpoint, is having the parts available. If you don't have the parts, you can't fix anything."

WIN-WIN SCENARIO

Ring Power Utility Equipment representing the Vac-Con hydroexcavator line is truly a win-win scenario.

"My favorite part of working with Vac-Con is the ease of working with them," Beauregard says. "It's easy to call them. It's easy to get an answer from them. When you need equipment, they have it ready. It's never a 'no.' From any standpoint that you could look at it — from a vender situation or a supplier situation — that's what we're all seeking: a relationship that makes our lives and our jobs easier.

"I don't have to worry about are the machines breaking, is the quality bad, are they going to be late on delivery, do they have the parts on hand, do they actually have the technical expertise to help my guys troubleshoot? I can just focus on what we need to do, and that's how we get the product to market."

David Daniel (left), Magnum Manhole and Underground Co. field superintendent, and Chris Hill, laborer, prep and flush a sewer line using the Vac-Con combo unit.

Foundation for Success

Gambling on a career change and a small fleet of Vac-Cons builds the business for Texas contractor

Facing a career crossroads two decades years ago, Jennifer Lingle did what any good entrepreneur would do: Find an underserved but growing market with few competitors and invest in quality equipment to get the job done right.

Looking back 20 years later, the owner of Magnum Manhole and Underground Co. in Garland, Texas, says her decision to leave the construction field and tackle an emerging market for cleaning and inspecting sewers and lining manholes with epoxy coating worked out great. And Vac-Con has been with her every step of the way.

Today, Magnum employs 20 people, serves customers throughout the sprawling Dallas-Fort Worth metro area and owns three Vac-Con combo sewer trucks and two epoxy-lining systems. Built on International and Freightliner chassis, each vac truck features an 11-cubic-yard debris tank; 1,300-gallon water tank; Roots rotary lobe blower from Howden (4,460 cfm at 16 degrees Hg); water pump that generates pressure and flow of 2,000 psi and 80 gpm; front-mounted reel that carries 600 feet of 1-inch-diameter hose; and 10-foot telescoping boom that rotates 270 degrees for maximum coverage.

One reason Lingle continues to invest in Vac-Con vac trucks is the continual improvements in technology that make the trucks more productive and easier to operate. The former helps boost Magnum's bottom line while the latter makes it easier to train operators.

By Ken Wysocky

PHOTOS BY **OLIVIA OGREN-HREJSA**

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Chris Hill, laborer, uses the Vac-Con's hydroexcavation capabilities to locate underground utilities.

Magnum Manhole and Underground Co. Inc., Garland, Texas

Owner: Jennifer Lingle

Founded: 1999

Employees: 20

Services: Cleaning and inspecting underground utilities, hydroexcavating, epoxy-lining of manholes and other structures, pipeline pressure- and deflection-testing

Service area: Dallas-Fort Worth metro area

"Every time I buy a new truck, it's been improved, especially for the operator," Lingle says. "They're very user-friendly machines. If we're training someone with a good aptitude, we can sometimes cut the training time in half because the truck isn't very complicated to run. And since training ties up a (veteran) operator, it's a big deal if we can cut training time in half."

GREAT CUSTOMER SERVICE

The three Vac-Con trucks are used primarily for municipal work and it's hard to underestimate their value in terms of building business relationships and retaining customers, Lingle says.

"When people need a vacuum truck on a job, they're usually begging us for help," she points out. "When we get there, they act like the cavalry just arrived."

Whether the trucks are cleaning sewer lines as part of a planned maintenance program, handling emergencies like sewer backups caused by clogged lines, hydroexcavating to safely expose underground pipelines or cleaning newly laid sewer lines prior to inspections, the Vac-Cons get the job done. Moreover, Lingle says the company's customer service is every bit as reliable as the trucks.

"Vac-Con's customer service is outstanding — their people are unbelievable," she says. "They're always there when I need them, and they'll do anything to help you."

As an example, she cites an instance five years ago when one of her trucks was suffering from persistent engine and transmission problems that were hurting her reputation for great customer service.

Lingle called Jerry Sonnier, her longtime Vac-Con sales rep, to see if she could quickly buy a used or demo truck. But there weren't any in stock. "So I asked for a quote on building a new one," she says. "Jerry called me back the same day. He told me he'd talked to [executive vice president] Todd Masley and said Vac-Con would have a new truck to me in four to six weeks.

"That meant a lot to me because I felt like they were stopping everything to take care of me," she recalls. "And I actually received the truck in about 3 1/2 weeks. That was so critical to my ability to take care of my customers. It was either that or tell customers that I understood if they had to go elsewhere. Jerry has taken care of me since the day I met him more than 20 years ago."

CAREER U-TURN

Lingle moved into cleaning and inspecting sewers in a

Jennifer Lingle, owner of Magnum Manhole and Underground Co., knows the importance of staying on top of technology; which is why she buys Vac-Con trucks. The up-to-date tech not only improves efficiency, but improves operator experience as well.

Right: The Magnum Manhole team, from left: Conner Dunlap, dispatcher; Lingle; Charlie Cox, operations manager; and David Daniel, field superintendent.

> "When people need a vacuum truck on a job, they're usually begging us for help. When we get there, they act like the cavalry just arrived."
>
> ***JENNIFER LINGLE***

roundabout way. She initially got a job 24 years ago in underground infrastructure work. She started out as a runner for crews laying sewer lines, getting parts and other items for workers, and then moved up into actually laying pipe.

"I just loved the work," she says. "I felt like it was one job where you were judged by how hard you worked — and I don't mind working hard.

"In many other jobs, you get judged by things other than that," she continues. "I never thought of myself as a woman out there, just as someone with a job to do. And nobody cared if I was a woman; they just wanted the work to get done.

"Everybody respected each other," she adds. "And if anyone put obstacles in my way because I am a woman, it made me into what I am today. So it was a good thing."

In 1999, Lingle decided to make a change and saw that inspecting and cleaning sewers was a necessary service that would always be in demand. Furthermore, there wasn't much competition back then, which made the field even more attractive.

So she invested in a used camera van and used Vac-Con combo sewer truck. Why Vac-Con? Lingle had heard the vac trucks have a great reputation for reliability and ease of operation. "And I already knew Jerry," she says. "Now it's nothing but the best for my company. I order a new Vac-Con vac truck every three or four years."

Initially, Lingle had just three customers — people she knew from her years at her prior job. After three or four years, she obtained certification from the state of Texas as a woman-owned business enterprise, which put the company on bidding lists as a minority-owned contractor.

"All of a sudden I had a lot more business," Lingle says. "But I was very fortunate because my accountant always advised me to take baby steps. I wanted to grow because I saw the work out there. But I followed his advice and limited myself to buying only so much equipment a year. So I grew slower than I really wanted to, but in retrospect, it worked out great."

FURTHER GROWTH EXPECTED

Looking ahead, Lingle expects continued growth, but at a manageable pace that enables the company to keep providing good customer service. "I need to grow and want to grow," she says. "We've grown every year. And the forecast for 2019 is every bit as good as it was last year."

As Lingle recalls Magnum's humble beginnings, she concedes she's a little surprised at how well things turned out. "I truly thought that when I started the business, it would end up with myself and a couple of other employees," she says. "But it evolved into all this. I'm a little surprised, but on the other hand, I worked very hard for everything. And I've been very fortunate to find great employees and great customers." And great equipment, courtesy of Vac-Con.

The Change-Up

Flooding no longer vexes one Texas water district thanks to its two vacuum trucks

The combination of flood-prone climate, clogged lift stations and aging infrastructure would be troublesome for any utility. A water district in South Texas manages it all with fast response times and powerful equipment.

For the Lower Valley Water District, located in El Paso County, the dry region's shallow water tables and growing population density highlights the need to stay on top of flooding. The district's location, wedged between two ports of entry — one with a sizable permanent immigration camp — means its lift stations take the abuse of added debris, compounding the challenges of keeping water off the streets.

"We're right in the valley. You've got the Rio Grande here, and the water table average is about 7 to 10 feet. There's really nowhere for that water to go," says Phillip Marin, field operations supervisor and compliance officer. "We service three different cities, and it's less of a rural area than it used to be. They really don't have any space where we can afford to have water running all over the place."

By Jared Raney PHOTOS BY **BRIAN KANOF**

Ruben Orozco (left), field operations manager, and Phillip Marin, field operations supervisor, at the Lower Valley Water District field operations yard in Clint, Texas.

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The Lower Valley Water District crew includes, from left, Phillip Marin, field operations supervisor and compliance officer; Jose Chacon, bid specialist; Miguel Velasquez, lead operator; Ricardo Gutierrez and Chris Nieto, utility pipe layers; and Ruben Orozco, field operations manager.

Lower Valley Water District

Customers/connections: 53,000 customers

Service area: 210 square miles; southeastern El Paso County, Texas, encompassing the city of Socorro, the community of San Elizario, town of Clint, and the colonias of Spark's Addition and Sand Hills

Lift stations: 16

Website: www.lvwd.org

A TOUGH SPOT

The Lower Valley Water District is relatively new, founded in 1989. But, according to Marin, the area has developed rapidly, and increasingly dense residential areas bring a host of issues for its approximately 53,000 customers.

"Our biggest issue is that older waterlines are starting to need repairs and are breaking. That's where vac trucks really come in handy, because instead of flooding out a neighborhood, we get the vac trucks ready, we get them out there and they prevent a lot of the headaches."

The oldest pipes are asbestos cement and PVC C900, both getting to the point where line breaks are not uncommon. The vast majority of the district's customer base is in Socorro, a city that is 80 percent developed and growing. Any kind of water accumulation in such tight quarters can mean significant property damage.

"Because it's mostly populated now, any kind of line break is going to flood the homes, where before it would go out into the cotton fields — of course, the farmers weren't happy about it, but we weren't looking at structural damage. Since El Paso County doesn't get a lot of rain, when it does, it doesn't really soak into the ground too well, so it accumulates quickly."

Runoff from a heavy rain event recently flooded out a length of 12-inch waterline supplying new subdivisions. The district was able to shut off the line before much damage was done, but will soon replace it by going down 15 feet under natural arroyos, or dry creeks, to ensure its safety from future floods.

MITIGATING IMPACTS

Running a water district in the deep south of Texas is difficult, but hugging the border brings a whole host of additional issues for the Lower Valley Water District.

The district manages both water and sewer systems for its service area, which includes a half-dozen communities. Its 16 lift stations require more maintenance than normal due to debris passed into its system from a nearby immigration camp near the Tornillo port of entry.

Left: Lower Valley Water District's field operations crew vacuums Type II wastewater from a 20,000-gallon holding tank.

Below: Ricardo Martinez services grease fittings on one of the district's Vac-Con trucks.

"We are a nonprofit public water system. With the Vac-Cons, consumers see where the funds are being invested and how it improves the quality of life for the community."

PHILLIP MARIN

"We're getting a lot of rags and stuff that are coming in from the port of entry," says Ruben Orozco, field operations manager. "The water they're using out there, they're bringing it over here and dumping it into our lift stations."

The new Vac-Cons have a separate tank for enzymes and degreaser agents and an electro magnet foot for picking up manholes, which helps with jetting operations.

"I would say 80 percent of the time we're using the vac trucks to jet and keep our sewer lines clean," Marin says.

A VERSATILE TOOL

The district took ownership of two new Vac-Con units last April, and the units have been a game-changer for all of the area's particular challenges.

In addition to keeping the lift stations clear and being an efficient rapid-response solution to flooding from line breaks or rain events, the Vac-Con units arrived just in time to assist with the replacement of a small sewer plant managed by the district.

"It's a decentralized sewer system on the edge of our district in a rural area, so it's not feasible to run sewer lines and lift stations to where the rest of the system deposits," Marin says.

With the difficulty of connecting the remote station to typical discharge areas, the district had been dumping the Texas-designated Type II wastewater into a nearby canal. But with the 1,500-gallon Vac-Cons, the district now has the capacity to move that wastewater without overtaxing its staff.

The site has a 20,000-gallon storage tank, which operators haul offsite, either to a manhole in the El Paso sewer system or to use for jetting sewer lines. It takes eight trips to empty the storage tank completely, but the upside is a much smaller environmental impact.

MORE THAN A MACHINE

A challenging system requires reliable equipment, but the Vac-Con trucks, and the significant investment that they represent, are more than just a solution. For Marin, the units represent the ideals of a utility that strives to improve the lives of its consumers, whether that's through keeping the system up and running or vacuuming up floodwaters.

"There is a benefit to the visibility of the trucks, because sometimes people don't have any idea what we do, due to the fact that most of the work maintaining the system is underground or behind gated water tanks and lift stations."

Beyond managing water and sewer systems, the district often takes its vac trucks out after big rain events to clear water from less-equipped areas in member communities that have frequent water accumulation.

"At times, we also help some of the public water systems that are neighboring, because they're smaller, so they don't have the financials to get the equipment we have, so we'll go over and help them," Marin says. "If they've got an emergency and they've got some flooding, those vac trucks come in handy and we'll send the operator out there. Those vac trucks are on standby 24/7."

It's a public service that is no small commitment for the operators, but brings incalculable goodwill among their customers.

"We are a nonprofit public water system. With the Vac-Cons, consumers see where the funds are being invested and how it improves the quality of life for the community."

A Dual Purpose

El Paso Water found a much-needed workhorse with Vac-Con's vac trucks as maintenance and first-response vehicles

By Giles Lambertson PHOTOS BY **BRIAN KANOF**

Martin Noriega, P.E. CFM, stormwater operations/fleet and building maintenance division manager, stands in front of El Paso Water's vac unit.

In arid West Texas, El Paso Water needs all the help it can get balancing sand, salt and water. Customers rely on the utility to get the balance right, provide clean water, and then collect the wastewater. A fleet of vacuum trucks helps keep water flowing there and back again.

El Paso sits on the northern banks of the Rio Grande, the meandering, border-defining river that separates U.S. soil from Mexico. An image of the city drawing water from the storied river is only partly accurate. In fact, the melted snow-fed river that originates in Colorado is tapped by every riverside municipality above El Paso and is a much-depleted water source by the time it reaches West Texas. In drought years, it sometimes goes dry.

Consequently, the city's water sourcing is relatively complex and includes reliance upon two large aquifers deep below the surface. However, drawing from them exclusively is not sustainable either, especially since three-quarters of one aquifer contains brackish water.

El Paso Water has an award-winning and efficient system of water distribution and collection. To utilize the salty water beneath, the city joined with nearby Fort Bliss army post and built a $92 million desalination plant. The plant is the world's largest inland desalting facility and produces 10 mgd of potable water, well below its production capacity of 28 mgd. The technology ensures that El Paso Water will be able to provide commercial and residential users with the water they need in future years.

El Paso (Texas) Water

Customers: Approximately 206,000 water, 196,000 wastewater

Service area: 256 square miles

Daily water volume: 104 mgd

Daily wastewater volume: 59 mgd

Infrastructure: 2,691 miles of water mains, 2,311 miles of wastewater lines

Fleet maintenance employees: 25

Website: www.epwater.org

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Stormwater provides a unique problem in El Paso's mostly dry climate. Monsoonlike summer rains inundate the city's storm sewers and pooling is common. The El Paso Water crew uses vac trucks to extract the pooling water.

> "The primary reason we switched to Vac-Con is because the manufacturer of the trucks that we used to buy got away from using dual engines. All the Vac-Cons have dual engines."
>
> ***IVAN IBARRA***

The other notable freshwater production component in the city's water story is a facility that treats wastewater to a reusable state. Indeed, it is one of few such plants in the world whose product meets human consumption standards. For now, 6 mgd of reclaimed water is delivered to industrial cooling towers, injected into an aquifer, pumped into park irrigation systems, and used for flushing fire hydrants and cleaning streets.

FINDING THE RIGHT FIT

El Paso Water is distributed through almost 2,700 miles of pipeline and collected as wastewater through more than 2,300 miles of pipelines that crisscross the city's 256 square miles. The extensive infrastructure is maintained and kept clog-free by operations and maintenance supervisors employing a range of heavy equipment. Martin Noriega manages El Paso Water's 700-piece equipment fleet. This includes 250 pieces of specialized machinery comprised of backhoes and motor graders, a Gradall, a Caterpillar bulldozer and 16 vacuum trucks.

The city purchased the first of these vac trucks in 1992. Noriega has worked with one division or another of the city for 21 years, so he can't quite say why the city turned to the technology 27 years ago. "But usually they get into it to maintain a system, to flush out sewer pipes." Over the next 15 years, the city acquired nine more vacuum units from various manufacturers.

However, in 2007 the vacuum fleet profile changed when the city acquired its first Vac-Con truck. In 2018, the utility purchased a sixth Vac-Con unit. "The primary reason we switched to Vac-Con is because the manufacturer of the trucks that we used to buy got away from using dual engines," says Ivan Ibarra, fleet maintenance chief. "All the Vac-Cons have dual engines."

The latest Vac-Con rig wearing an El Paso Water logo essentially is the same model as the five trucks previously acquired from the manufacturer: a V312LHAE/1500. The combination sewer cleaner has a 12-cubic-yard debris tank, a Little Giant pump that can move 80 gpm at 2,000 psi, an overarching four-way hydraulic boom and a high-pressure hose reel mounted on the front end of a 2018 International 7600 chassis.

Plus, of course, the truck is configured with two engines. Besides giving the big rig its motive power, the primary diesel engine in the truck chassis drives the unit's hydrostatic variable displacement piston pump and the fan or vacuum. The auxiliary engine — a standard 220 hp, 10-cylinder gasoline unit — can independently operate the vacuum and water systems. This means water can circulate while the truck is standing still or moving.

So far, the vacuum rigs have not been employed on the utility's waterlines or pump stations. "We haven't needed them for anything on the water side," Noriega says. "We do need them to clear out our stormwater and wastewater lines."

Bernie Cardenas, sewer maintenance supervisor, says the trucks are used daily in his division. "When we have emergency calls in different parts of the city, we use them to clear the lines,

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El Paso Water general services lead Horace Martinez (left) vacuums stormwater while equipment operator Norberto Sandoval runs the controls on the Vac-Con.

but we also use them daily to flush and maintain lines."

Joey Paz, stormwater operations supervisor, echoes Cardenas: The city's trucks are first-response vehicles in emergencies as well as in daily maintenance. "We have a daily routine for our trucks — cleaning pipelines to prevent backup when it does rain (the city averages less than 10 inches of rainfall a year). We also use them for water extraction on the streets."

Water extraction — the vacuuming up of water pooled in public areas after occasional summertime monsoon downpours — poses some hazard to the vacuum trucks because of the sandy nature of the desert community's soil. While clean water is used in the trucks' onboard tanks, so as not to expose the pump to salt or sand, the water sucked into the debris tank from flooded streets can abrade a truck's 3/16-inch steel collection tank.

"We haven't had any maintenance-type issues," Ibarra says. "But when we do water extraction in areas where it is particularly sandy, it does create an effect in the tank. So we decided to perform a test to check the thickness of the debris tank wall to see if the continuous exposure to sewer water, sand and rocks had any erosion effect on the metal. So far, they always have been within the specs."

The infrastructure the fleet of trucks is trying to keep unclogged ranges from 6-inch PVC or clay wastewater and stormwater pipes on up to 32-inch wastewater lines and 60-inch stormwater mains, with a few 10-foot box culverts maintained in some areas of the city as well. Most clogging occurs from residual buildup of wastewater material at joints or low spots. Cardenas says tree roots in the arid landscape also cause problems from time to time, with high-pressure nozzles and cutters utilized to eliminate them. "We don't see that a lot, but once in a while."

With the U.S. economy reviving, El Paso, like other cities, has seen a surge of construction work. According to Ibarra, the construction work sites contribute to the pipeline maintenance crew's workload because of runoff. "When we get a monsoon rain, we end up getting a lot of construction debris in our stormwater lines. That's where the lines really take a beating."

A CULTURE OF SUPPORT

El Paso Water's Vac-Con trucks are not employed in hydroexcavating lines to expose and repair them. Though Vac-Con dual-engine combination machines offer an excavation package, the city so far has not opted to buy it. "In the past, there hasn't been a real demand for the hydroexcavation package. But now we have decided to look into it for the future."

Looking into it won't mean a cross-country trip for maintenance officials: Heil of Texas, the local Vac-Con cleaner and hydroexcavator dealer, has a new facility in El Paso with eight service bays and a staff of technicians for support. "They just opened up down the street, a 10-minute walk from here," Noriega says. That's convenient for a utility that has grown reliant upon Vac-Con trucks. As Cardenas says, "Vac-Con is a big workhorse for us."

Most of El Paso Water's fleet maintenance happens in-house under Ibarra's supervision in a facility built in 2016 at a cost of $3.4 million. Two dozen technicians work there. The new facility replaced what the city acknowledges were "extremely outdated buildings and workspaces," and introduced modern, more productive maintenance systems. With the utility keeping pieces of heavy equipment for as long as 15 years before replacing them, fleet maintenance is a key component of its operating plan.

City water, sewer and stormwater equipment operators are cross-trained on several kinds of equipment, including backhoes, Bobcat track loaders and all 16 vacuum trucks. In addition, Vac-Con technicians come in to train El Paso crews on vacuum cleaning. Ibarra says of the in-house sessions, "We're trained how to rev the engines to make sure they're utilizing the water efficiently and how to use the different nozzles and cutters that we need here."

Some operators have been sent on to vacuum truck operation schools as well. It's all part of El Paso Water's commitment to provide and conserve clean water. "We are doing our due diligence," Noriega adds. "More knowledge is always a benefit."

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