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## HONEST WORK

PIPE MASTERS EARNED A SOLID  
REPUTATION TACKLING CHALLENGING  
JOBS AND TREATING CUSTOMERS  
WITH INTEGRITY / **PG 14**

### THE RIGHT STUFF

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AND  
REHABILITATION**  
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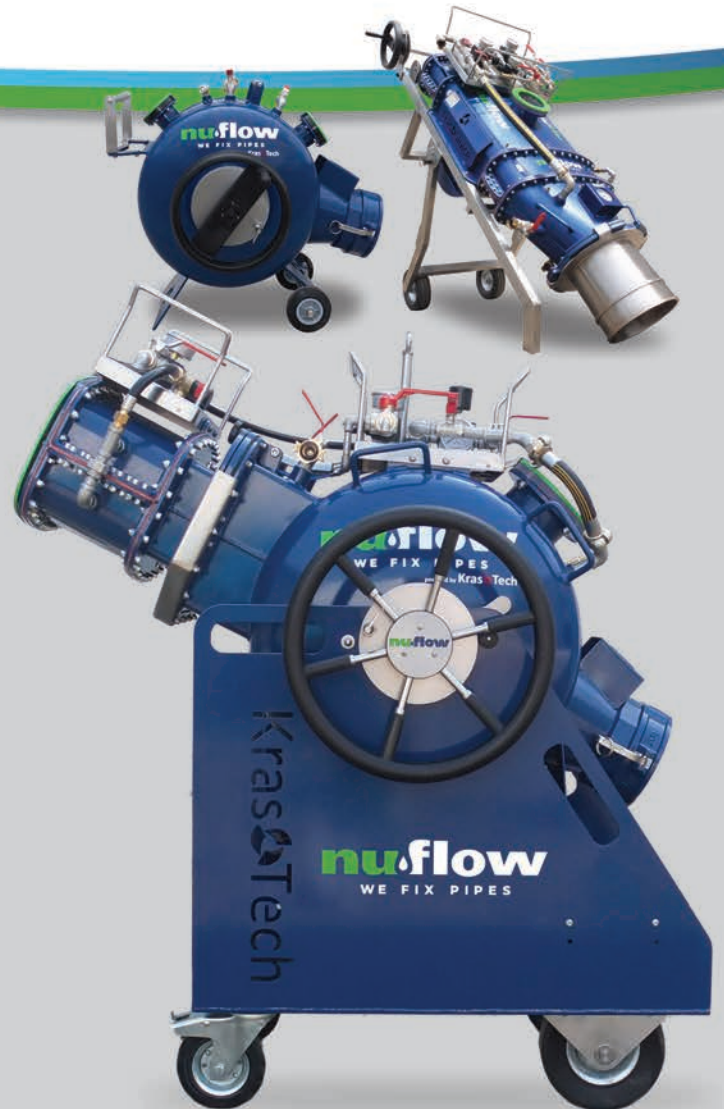
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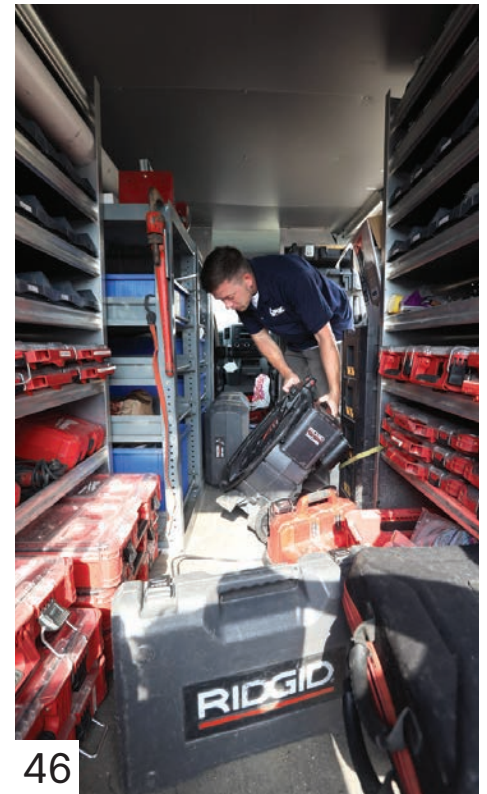
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**ON THE COVER //** Jason Koran started Pipe Masters on the island of Oahu in Hawaii in 2015, working with two employees. The pipeline rehab and plumbing company quickly established itself by making investments in advanced technology and always putting customers first. The company grew faster than Koran ever imagined when he started out — cracking the million-dollar gross revenue mark in 2017 and bringing in \$2.2 million in sales in 2020. (Photography by Marco Garcia)

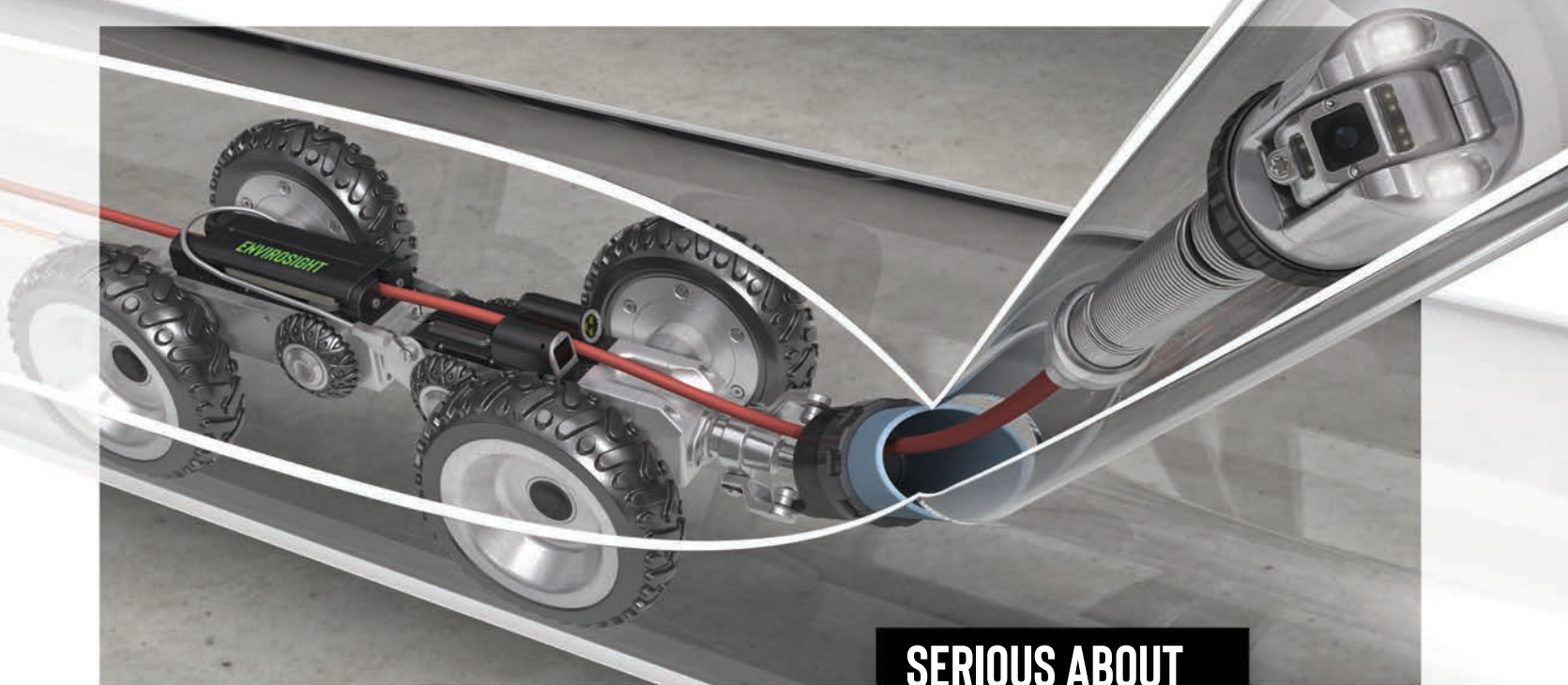


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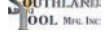
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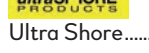
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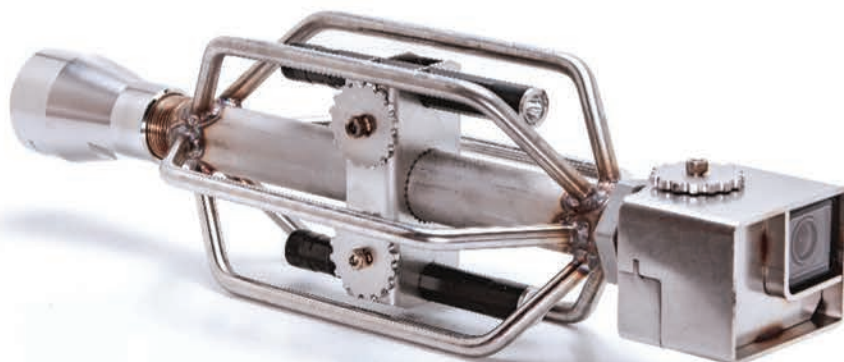
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## LEARNING FROM PEERS

Contractors share what's necessary to run a successful drain cleaning business

**B**USINESS ADVICE FROM many sources can be useful, but who better to emulate than someone who's been in your shoes?

As I edited the profiles for this issue, I realized both contractors were great examples of how focusing on what's right for their customers was putting them on the path to success.

I think you can learn a lot from these two. But you don't have to take my word for it. Listen to someone who's out there doing the same work you're doing and building a rewarding career in the process.

### DON'T SHY AWAY FROM A CHALLENGE

The profile on Jason Koran's business, Pipe Masters, begins with the company's running joke: The best way to get his team to solve a problem is to tell them they can't do it.

Koran says his team always comes through. "We're always up for a challenge and we don't leave a job until we find a way to repair it. That's one thing that separates us from our competitors — we do not tell customers no."

### HAVE THE NECESSARY TOOLS TO DO ANY JOB

Chris Sbrocco, owner of Pro Service Plumbing, says owning the right equipment is a big reason why the company has amassed a large customer base.

"You do customers a service by staying up to date on new technology that can provide solutions that save them money because you can do jobs faster and not create more work.

"We pride ourselves in determining the issue and providing a custom solution — with no callbacks."

### GOOD TEAM MEMBERS ARE INCREDIBLY VALUABLE

The main ingredient in Koran's success is his team, particularly his three lead field technicians.

"They're the tripod on which this company stands," Koran says. "I wouldn't be anywhere without these guys. "You can invest in all the good equipment you want, but at the end of the day, it comes down to the technicians who operate it."

Sbrocco agrees. He wants to expand but is working on hiring and cross training his technicians in order to keep the quality of their work a top priority.

Growth will come as they gain experience," Sbrocco says. "The work definitely is out there, so the more guys we have, the better. But they have to be able to do anything and everything so we can keep providing value for customers."

It's always the goal of *Cleaner* to provide value for you, and be a resource as you grow your own business. If you have specific topics you'd like to see us cover, or want to suggest a company that's doing good work (your own or someone else's) for a profile, drop me a line at [editor@cleaner.com](mailto:editor@cleaner.com). **c**

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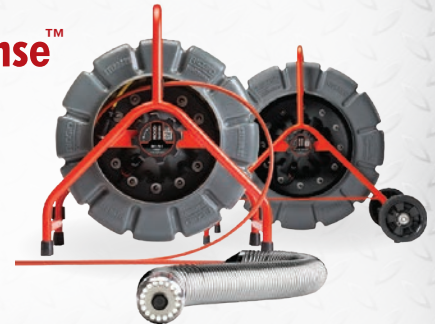
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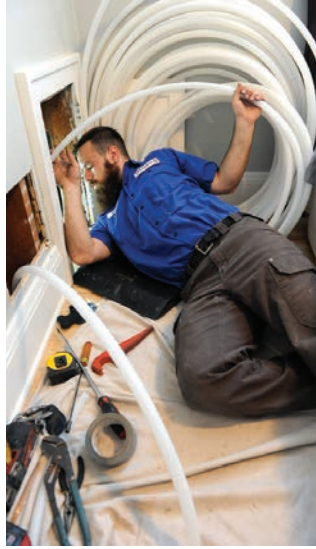
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## CUSTOMER CARE

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## TOOL TALK

### Two-Way Radios Aid Job Site Communication

Effective communication is key to the success of any contractor. One of the best tools for improving it is two-way radios, which allow for instant and clear communication that ensures you and your team are able to work effectively with each other even when not in close proximity. This online exclusive provides an overview of all the benefits.  
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## HEALTHY MACHINES

### Maintaining Excavator Undercarriages

When servicing excavators, oftentimes inspections focus on the hydraulics, boom arm and cab controls as they are the heart of the machine's functions. But just as important to the machine being productive is the undercarriage. Here are some maintenance tips. >> [cleaner.com/featured](https://cleaner.com/featured)



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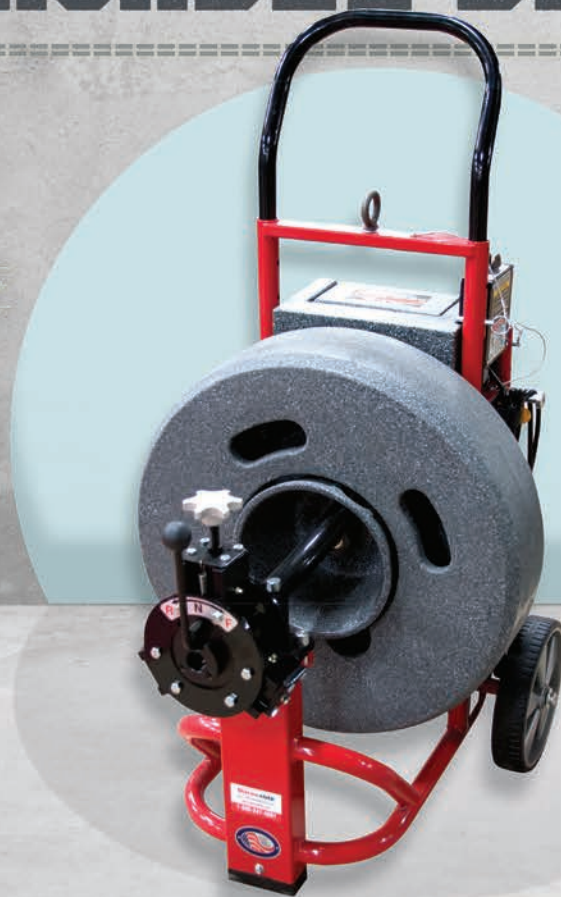


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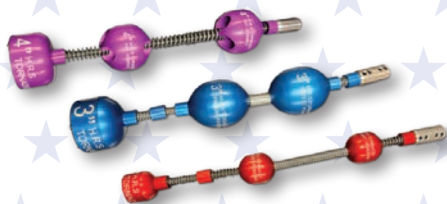


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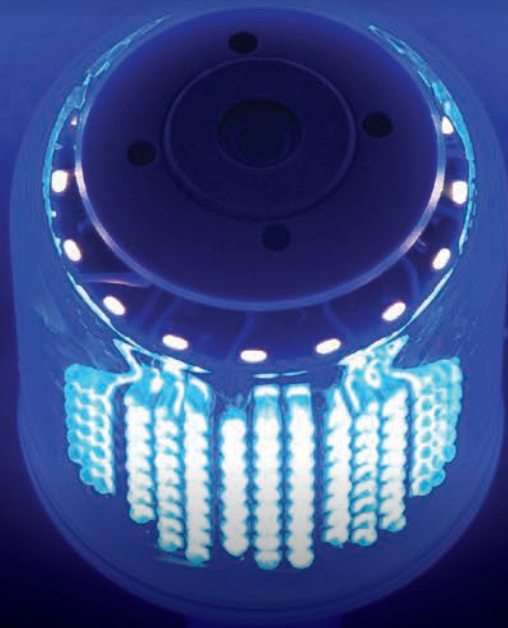
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# HONEST WORK

PIPE MASTERS EARNED A  
SOLID REPUTATION TACKLING  
CHALLENGING JOBS AND TREATING  
CUSTOMERS WITH INTEGRITY

By Ken Wysocky

Photography by Marco Garcia

» Pipe Masters owner Jason Koran started his pipeline rehab and plumbing company, based in Honolulu, Hawaii, in 2015.



At Pipe Masters, there's a running joke that illustrates one reason for the company's rapid growth over the past several years.

"We always say that the best way to get our pipe masters to do something is to tell them they can't do it," quips Jason Koran, the owner of the pipeline rehab and plumbing company based in Honolulu. "All of us like a good challenge."

That can-do attitude, coupled with investments in advanced technology and an emphasis on customer service, has lifted the company to financial heights Koran says he couldn't have imagined when he established the company in early 2015 on the island of Oahu in Hawaii.

While working with just two employees that year — Koran and right-hand man and lead technician Bernard Luong — the company racked up about \$690,000 in gross revenue. By 2017, the company cracked the million-dollar barrier, generating \$1.6 million in sales. And in 2020, the company notched \$2.2 million in sales, with only a







« Pipe Masters technicians Micah Huffman (left) and Devin Watabu inspect a drainline with a RIDGID SeeSnake system.

couple more technicians on board than it employed in 2017. Pipe Masters now employs 12 people, including eight technicians.

The main ingredient in Koran's success is a team of crack field technicians, led by Luong and two other lead technicians, George Manguba and Devin Watabu.

"They're the tripod on which this company stands," says 40-year-old Koran. "I wouldn't be anywhere without these guys. I don't have to baby-sit or micromanage anything. ... They always get the job done.

"You can invest in all the good equipment you want, but at the end of the day, it comes down to the technicians who operate it. We're a small company, so we're not big enough to handle every emergency call. That's just not who we are.



**Pipe Masters LLC**  
HONOLULU (OAHU), HAWAII

<b>OWNER</b>	Jason Koran
<b>FOUNDED</b>	2014
<b>EMPLOYEES</b>	12
<b>SERVICES</b>	General plumbing and trenchless pipeline rehab, including pipe bursting, pipe lining and pipe coating
<b>SERVICE AREA</b>	Hawaiian Islands
<b>WEBSITE</b>	<a href="http://www.pipemasters.co">www.pipemasters.co</a>



» Micah Huffman shows the deterioration of an old section of pipe.

» The access pit for a lateral line replacement job at a home in Honolulu.



“But if a customer is experiencing repetitive emergencies, that’s where we shine and can show our capabilities. We’re always up for a challenge and we don’t leave a job until we find a way to repair it. That’s one thing that separates us from our competitors — we do not tell customers no.”

### ROUNDAABOUT CAREER PATH

Koran’s success is more notable for the fact that he never planned on a career in plumbing and pipeline rehab. Koran, who grew up in Hawaii, did construction and landscaping work for several uncles when he was younger, but that didn’t involve any mechanical work like plumbing, he says.

After graduating from George Washington University in Washington, D.C., with a political science degree, Koran — who grew up in Hawaii — held a wide variety of jobs.

“YOU CAN INVEST IN ALL THE GOOD EQUIPMENT YOU WANT, BUT AT THE END OF THE DAY, IT COMES DOWN TO THE TECHNICIANS WHO OPERATE IT.”

JASON KORAN

“Every job I fell into, I loved,” he says, noting he worked for an attorney, served as a mortgage officer, and handled marketing and advertising duties for a phonebook company. “But boy, am I glad I pursued a career in plumbing rather than politics.”

The turning point occurred when he returned to Hawaii and met the owner of a prominent plumbing company based on the Hawaiian island of Maui. The owner asked him to help establish a division of the company on Oahu, and Koran eventually accepted.

“That’s where I learned how to not only do good work, but how to grow a company,” he says. “I got my feet wet in pipeline rehab work and enjoyed every bit of it. I was always advocating to attempt bigger and bigger projects.”

Koran also credits a mentor, Rich Hart, who now owns Harts Services in Tacoma, Washington, for teaching him about customer service and quality control.

After leaving the plumbing company in 2014, Koran founded Pipe Masters. Koran says the name not only alludes to the company’s expertise, but it’s also a nod to the annual World Surf



League's Billabong Pipe Masters surfing competition, held at the renowned Bonzai Pipeline off the coast of Oahu.

"I wanted to have some fun with the name because sometimes plumbing can be boring."

### GREAT MARKET POTENTIAL

Koran says he jumped headfirst into trenchless pipe rehab because it was new and other companies didn't seem interested in new technology, which created an underserved market niche just waiting to be filled. Furthermore, Hawaii's corrosive soil and salty environment is hard on cast iron pipes, which creates a lucrative market for pipe rehab work.

"Many of the pipes here are 50 to 60 years old," he explains. "Putting cast iron pipes in the ground here is like laying them into a salt bed — they start to corrode quickly. We sometimes see cast-iron pipe fail after only 25 years, which is half its usual life expectancy."

"We're also situated on a tectonic plate here, which means there's a lot of ground settling on our islands. So offsets often occur."

Despite the great market potential, working in Hawaii — roughly 2,500 miles from America's West Coast — poses its own set of

challenges. The pool for skilled laborers is small and the logistics of obtaining materials and buying new machinery and equipment are difficult, Koran says.

"I have to go to the mainland once or twice a year just to find out about new technology because distributors generally won't come here to sell us equipment. That slows down operations."



Devin Watabu checks a monitor as he inspects the line.

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» Micah Huffman (left) helps guide the jetter line to Devin Watabu while cleaning a residential drainline.

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JASON KORAN

And everything takes more time to bring here and shipping is expensive, too.

“But we also work in nice weather year-round, so we’ve got that going for us.”

### INVESTING IN TECHNOLOGY

The company started out doing service and repair plumbing work, plus pipe lining, using a system made by MaxLiner USA. But within the ensuing three years or so, Koran quickly invested in other productivity- and profitability-enhancing equipment and technologies.

Pipe Masters owns two pipe bursting machines — an R2 and an R8 — manufactured by RODDIE and an ElastoTec M pipe coating system developed by I.S.T Services.

“Every trenchless technology has limitations, so it’s all about trying to give every customer an option,” says Koran, explaining why



↑ Huffman retrieves equipment from the van at a job site.

he diversifies the company’s offerings. “The more technologies we add, the more we reduce the odds of ever saying no to a customer.”

The company also owns about a dozen RIDGID SeeSnake pipeline inspection cameras (standard models, Minis and microDrains) as well as Gvision monitors built by EPL Solutions.

For drain cleaning, technicians rely on RIDGID K45 hand-held machines and toilet/urinal augers; a Speedrooter 92 cable drain

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## ALWAYS FIND A WAY

The value of Pipe Masters' diversified services was graphically illustrated several years ago during an emergency job that owner Jason Koran — who thoroughly enjoys a good challenge — still recalls like it happened yesterday.

In Pearlridge Center, Hawaii's largest enclosed mall, located in Aiea, just northwest of Honolulu, an approximately 300-foot-long run of cast iron sewer line had cracks and small holes in one section and a rotted-out bottom in another.

The job was challenging because the sewer line was 6 feet deep and ran down the middle of a wing of the mall. Businesses couldn't be disrupted, so crews worked at night. Furthermore, in the middle of the run of pipe, it transitioned from 6-inch to 4-inch pipe — and the transition point was inaccessible, explains Koran, whose company is based in Honolulu.

After assessing the situation, Koran and his crew opted for a unique hybrid solution that involved both old-school and new techniques.

Technicians started the project by using old-fashioned excavation to bust out the floor in a vacant store and replace a 20-foot section of corroded pipe — a poor candidate for pipe-coating or pipe-lining — with ABS plastic pipe, he says.

Next, the crew used a RODDIE R8 pipe bursting machine to replace one section of the pipe from one end of the new ABS pipe to a connection with a city mainline sewer about 140 feet downstream.

"Pipe bursting made sense because there was only one 45-degree bend and no branch connections to reinstate," he says.

At the other end of the new pipe, the crew used a MaxLiner system to line the remaining 140 feet or so of damaged pipe.

"We had to get creative because there aren't any liners that can handle transitions in pipe sizes," Koran says. "And there wasn't any upstream access point, either. So we used a 5-inch-diameter liner that would wind up being a little thicker on the 4-inch part of the pipe and a little thinner on the 6-inch section of the pipe."

A MaxLiner rep who was overseeing the job said the approach probably wouldn't work. So Koran and his crew stopped, thought it over for a day and then decided to roll the dice the next night and finished the job. Technicians then used a MediCutter from MaxLiner to perform three or four line reinstatements.

The job took two weeks and Koran says it still ranks among the most difficult projects the company has ever attempted.

"But we don't leave jobs until we find a way to fix the problem."

Pipe Masters still does scheduled maintenance at the mall, and Koran says the repaired section of pipe remains in great shape, and no longer causes sewer backups at businesses in that part of the mall.

"We recently inspected the line and it's still in great shape after more than five years in service."



Devin Watabu hands off an old section of pipe to Micah Huffman.

machine manufactured by General Pipe Cleaners; JM-1000 electric box jetters from General Pipe; and one Maxi Miller and one Mini Miller made by Picote Solutions.

Other investments include two Brute water jetters built by Jetters Northwest; a trailer-mounted, hot-water jetter manufactured by HotJet USA; a SebaKMT leak detection system; six RIDGID SeekTech SR-20 pipe locators; and a Kubota U17 mini-excavator.

For service vehicles, the company relies on three Ford Transit 250s, two Mercedes-Benz Metris vans, one Mercedes-Benz Sprinter van with a Knapheide KUV utility box and a Chevrolet 3500 cutaway van with a service body made by Knapheide.

### HONESTY MATTERS

Koran says treating customers fairly and with integrity also has boosted growth.

"We only recommend to our customers whatever work is necessary, as opposed to someone telling them they just need to replace everything," he says. "We recommend doing what we would do if the property was our own."

"We also drill down into what repairs are needed now versus things that could be done, say, two to five years down the road. That way customers feel like we're always looking out for their best interests."

To ensure customer satisfaction and improve quality control, every customer gets a call from the company's office supervisor shortly after every job is completed. Making sure customers are happy with the service they received also provides an opportunity to schedule any further work a technician may have recommended, Koran says.



“So we’ve turned a customer satisfaction and quality control technique into a sales tool, too. We also ask customers to give us a good online review. If they agree, we make it easy by sending them a link to online review platforms like Yelp and Google.”

The approach has been successful. Since last fall, the number of online reviews on Google increased from none to 121, with all of them five-star ratings on a scale of one to five. The company also has garnered 147 reviews on Angi (formerly Angie’s List), with an average rating of 4.7 stars, and over 75 reviews on Yelp, with an average score of 4.5 stars.

### DIALED IN

During the company’s first year or so, rapid growth — expanding from one service vehicle to seven, for example — created chaos, which forced Koran to periodically tap the brakes on even more growth.

“But now that we’ve got our systems dialed in, we can afford to push the gas pedal a little more,” he says. “After that first year of chaos, I know how important systems are for both technicians and office personnel.”

“WE ONLY RECOMMEND TO OUR CUSTOMERS WHATEVER WORK IS NECESSARY, AS OPPOSED TO SOMEONE TELLING THEM THEY JUST NEED TO REPLACE EVERYTHING. WE RECOMMEND DOING WHAT WE WOULD DO IF THE PROPERTY WAS OUR OWN.”

JASON KORAN

Along with more emphasis on consistent processes, the company switched to ServiceTitan business management software, which was a game-changer in terms of better efficiency and productivity, Koran says.

“It was like hiring two new employees. It sends booking and technician-arrival confirmations to customers and handles dispatching, all without putting an extra burden on our staff.

“We can even record pipeline inspections and upload them to the cloud, then email the videos to clients before the technicians leave the job site,” he adds. “For about \$1,500 a month, it’s one of the best investments I ever made. It’s not cheap, but you get what you pay for.”

As such, Pipe Masters now is in a position to grow fast — minus the chaos that reigned in the early years, Koran says. His goal is to double the size of the company within the next three years.

“We’re ready to go. The sky’s the limit from here.” **C**



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Joan Koehne

## RISK AND REWARD

Partnerships can be difficult, but if organized the right way they can also provide great benefits for your business // By Joan Koehne

**M**AYBE YOU SHARED a faded futon as college roommates or a secondhand Chevy as brother and sister. Whatever the circumstances were that brought you together, at some point you were convinced that a business partnership was meant to be.

You have this grand vision of how your small business will succeed. You think, “I can make this work with this person. I’ll do this, and he’ll do that. This is going to be great!”

You hit the ground running. You form a limited liability company online and file your Articles of Incorporation. With a few more clicks, you apply for an Employer Identification Number. Everything is great, until the business gets rolling and you realize that your business partner isn’t someone you can do business with after all.

As this scenario shows, working with a business partner has its risks. A strained relationship with a family member or friend is just one of the risks of partnership. Partnerships carry financial and legal liabilities as well. But business owners can reduce the amount of risk they assume in a partnership.

The first level of protection is the business structure. Business partners who form a limited liability partnership, LLC or S corporation gain liability protections. Generally, only what they invest in the business is potentially what they can lose, along with any loans or other obligations they take on.

Sharing the financial risk is one benefit of a partnership. Sharing responsibilities is another. Before partners open a business or add a partner to an existing operation, a partnership agreement is essential. This document provides a framework for resolving issues and prevents problems that may otherwise result in court action.

### CHOOSE WISELY

Dave Kaster, principal at Fidelis LLC, a certified business advisory service in Green Bay, Wisconsin, encourages partners to discuss every scenario they can imagine and how the decision-making process will play out.

“ANY TIME YOU’RE GOING TO PARTNER, FIRST AND FOREMOST, YOU’RE LOOKING AT WHAT EACH PARTNER BRINGS TO THE TABLE. IF YOU’RE BRINGING THE SAME THING, THEN YOU MAY WANT TO LOOK DEEPER.”

DAVE KASTER

“Put that into the partnership agreement. Everyone needs to agree upfront,” Kaster says.

He compares a partnership agreement to a prenuptial agreement drafted before a marriage. Business owners may feel uncomfortable drafting an operating agreement, but that agreement can save them a lot of misery and legal fees.

“The time for compromise is not while you’re negotiating the partnership agreement,” Kaster says. “The time for compromise is after, when you’re working together. If you compromise up front, you have to live with it forever.”

Choosing the right partner involves careful consideration.

“Any time you’re going to partner, first and foremost, you’re looking at what each partner brings to the table,” Kaster says. “If you’re bringing the same thing, then you may want to look deeper. By partnering are we able to pool our money? Are we able to cover 24 hours of the clock, rather than 12? That’s all good, from the logistical aspect.”

Above all, business decisions, not personal feelings, should lay the foundation of a partnership.

A partnership agreement should outline a variety of things, including percentage of equity in the company, whether it’s 50-50, 60-40, 70-30 or something else.

“The important thing is that there’s a meeting of the minds to understand what distribution you have,” says Devin Shanley, attorney with Peterson, Berk & Cross. Partners agree to the investment of capital equity and/or sweat equity. They are also



willing to accept the liability, profit/loss and leadership authority that their percentage represents.

A so-called silent partner typically is someone who puts up capital but doesn't have voting rights. However, if a partnership is structured as an S corporation, it's generally one share, one vote. Corporations can't exclude shareholders from certain decisions. So, instead of adding partners to the corporation, business owners may choose to structure an investor's contribution as a loan, categorized as a stock purchase.

"You're just going to want clarity, so your documents are consistent — whether you're talking about loan agreements, operating agreements or partnership agreements," Shanley says. "A corporate attorney or business law attorney can talk you through that and draft documents."

Partners also should clarify how the company will handle an expense the business can't cover. Will partners be required to reinvest in the company? If so, what procedure will be established?

Additionally, what happens if partners decide to change the partnership agreement? A method to modify the agreement should be determined upfront and included in the document.

## EXIT STRATEGY

Besides planning how to begin a partnership, business owners also should plan how to exit. A buyout strategy is a critical element of every partnership agreement. Maybe someone wants out of the business, or a partner wants someone out. Maybe there's a significant life change that affects ownership, like a divorce or disability.

Placing a value on the business can be tricky. In the case of a death, the surviving partner may not see eye-to-eye with the heirs. Partners with the foresight to structure a buyout plan create a smooth leadership transition. They might agree to contact a disinterested third party or arbitrator to determine the value of the business.

The classic buyout scenario occurs when a partner dies, and the death triggers a buyout.

The surviving partner or partners buy out the deceased person's spouse and/or heirs. Although the surviving partners may be fond of the deceased's family, that doesn't necessarily mean they want to be in business with them. Perhaps the survivors have no interest or aptitude for running the business. They don't want any

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responsibility in the business, including any business debt.

A clear-cut buyout plan allows the surviving partners to maintain ownership, continuity and authority to run the business in the event of a partner's death.

Life insurance and "key worker" replacement insurance are policies partners can purchase to mitigate risk. When a business owner purchases life insurance on a partner, the owner has the means to buy out a deceased partner's heirs. The survivors will receive a check for the value of the business and won't become owners.

Life insurance also mitigates the risk of corporate debt if a partner dies and the bank doesn't allow the surviving partner to maintain the current debt load.

Additionally, partners can purchase key worker insurance on people who are instrumental in the day-to-day operations of the business. This insurance provides the financial resources to replace these key people, including partners.

## NEW PARTNERS

Another exit plan involves training and fostering new partners. Business owners can offer financial incentives to keep employees around and eventually add them as partners.

"You want to give them the taste of 'The better the business does, the better you do, too,'" Shanley says.

Any business with a high personal connection between service provider and customers should carefully and deliberately introduce the new partner to customers.

"To maximize the value of the business, you need to be able to effectively transition leadership and turn that business over to them," Shanley says.

Working with a partner has its share of risks, but also has many rewards. Partners share responsibility and liability. Best of all, a partnership developed with the appropriate planning brings the right people together. Collectively, they work toward the same goal of operating a successful business. **c**

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NEW



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NEW



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»800 cc EFI Honda Engine on Manual Reel

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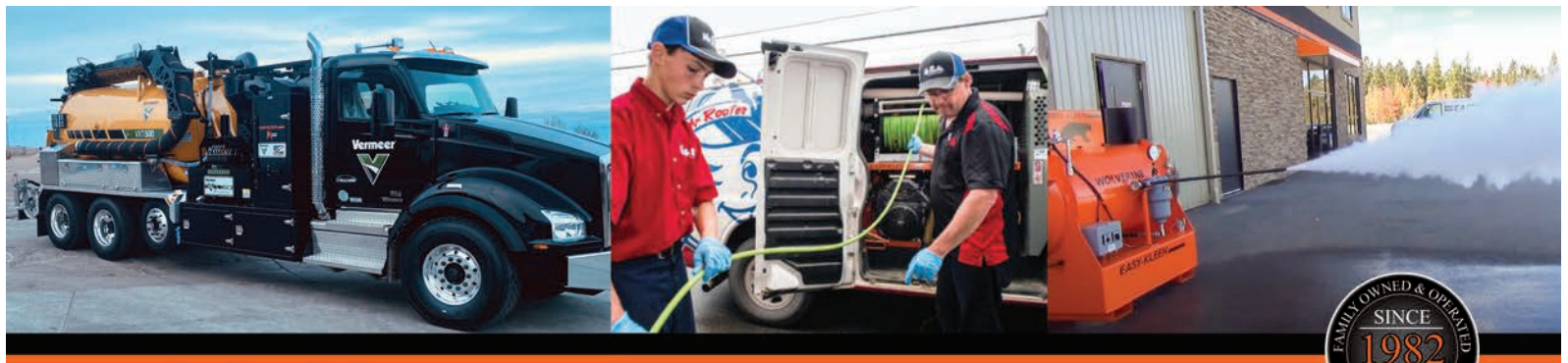
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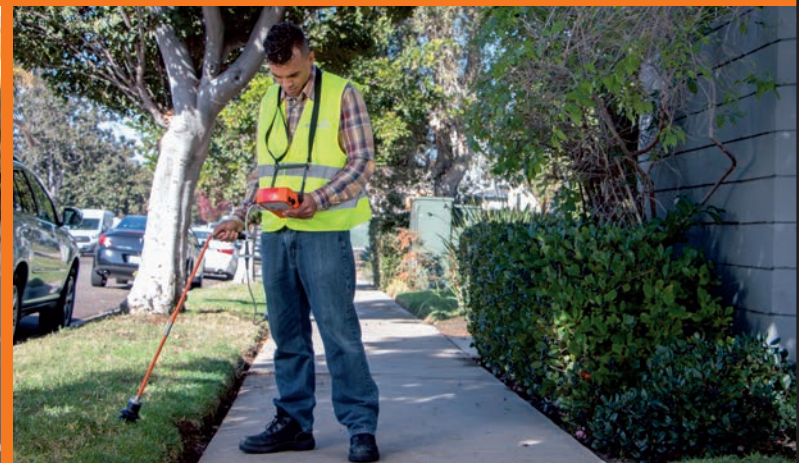


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**CUES**



## COMFORT MEETS FUNCTION

Storage space and riding comfort are some of the advantages of a cargo van

// By Tim Dobbins

**DRAIN CLEANERS FACE** the difficult challenge of fitting a full shops' worth of tools, equipment and parts in a vehicle. Throw in a jam-packed schedule on top of that and staying organized with all those pieces can be headache.

Vehicles designed to address organization issues faced by those with careers on the road have evolved over the years, providing some great options to get you and your equipment to the job site. With so many styles, makes and models to choose from, it comes down to figuring out what you want out of the vehicle and choosing the best fit for you and your crew.

Cargo vans are a popular choice for many drain cleaners as they not only help them stay organized, but also offer advantages that aren't found in other work vehicles.

"IF MY CUSTOMERS — WHEN MY CUSTOMERS — SEE INSIDE MY VAN, THEY WILL SEE ORGANIZATION AND NOT SCATTER. I BELIEVE THAT REASSURES THEM OF MY WORK ETHIC AS WELL."

GINA GRUNDMEIER

Gina and Todd Grundmeier, owners of T 'N G Plumbing in Dexter, Minnesota, have been using a Ford Transit 250 cargo van for the past five years. "The most specific thing that drew us to it was the ability to be able to transport so much more materials for service work," says Gina Grundmeier. "That and you could save on your back by not stooping around looking for items."

### SPACE AND COMFORT

Multiple manufacturers produce cargo vans with varying features and capabilities. Grundmeier says they started and ended their search with Ford. And so far, they are happy with their purchase. "There isn't

really anything we dislike about this van as far as changing it," she says. "The setup we chose when we purchased shelving was carefully researched and storage is utilized to its max potential."

One of the biggest draws of cargo vans is the vast enclosed space they offer, allowing interior customization for storage. Each make and model will vary in terms of interior space, but most cargo vans offer 120-200 cubic feet of space and have options for interior ceiling racks, shelves, bins, drawers or lockers to be added and arranged in a fashion that suits you and your business.



▲ T 'N G Plumbing of Dexter, Minnesota, has been using a Ford Transit 250 cargo van for the past five years because of the amount of storage space in the van and the comfort of riding in it. The company takes pride in the vehicle's appearance and cleans it weekly. (Photo courtesy T 'N G Plumbing)

In the Grundmeier's van, they have shelving units on both sides of their Transit, providing a multitude of storage options for equipment and parts. The ample shelving and storage possibilities are one of the biggest attributes that the Grundmeiers like about the cargo van. They are able to use bins within the shelving to store various PVC fittings,



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power tools and smaller service parts. The van provides plenty of room to lay lengths of PVC pipe on the floor while keeping enough room for a clear pathway to maneuver throughout the vehicle.

Comfort is another thing that attracts people to cargo vans as their office on wheels. It's easy to focus on the storage attributes of a service vehicle, but don't forget about staying comfortable for long hours on the road. Cargo vans are designed to match the comfort level of an SUV or minivan, so driving them commercially doesn't strain the operator.

"There is probably more capacity for storage in a box truck, but it wouldn't drive me to own one," Grundmeier says. "I did use one through a previous employer. I felt they were a rough ride and more challenging to maneuver driving to service calls in town when weather was inclement, meaning snow."

"The gas mileage we get now is also a bonus," she adds. Manufacturers in today's market have put a lot of research and development into fuel efficiency making cargo van fuel consumption considerably lower than that of box trucks. However, how much better depends on the make and model you choose.

Cargo vans come in various sizes and often grouped as large or compact. Large cargo vans like the Mercedes-Benz Sprinter advertise up to 19 mpg with other comparable size vans from other van manufacturers advertising from 15-18 mpg. Obviously, the larger vans will permit more storage than their compact counterparts, but the smaller compact cargo vans make up for that in added miles per gallon with some models like the Dodge RAM ProMaster City advertising 28 mpg highway.

## FIRST IMPRESSIONS

Another added benefit that comes standard with cargo vans no matter their size is the blank wall on each side of the vehicle's exterior and their rear doors. That space is easily transformed into a mobile billboard for your business.

However, when your van is boldly emblazoned with your name and number emblazoned, it's a representation of your company at all times. With that in mind, make sure you develop a routine schedule of cleaning and organizing the vehicle. Just like the welcome area in a front office, the vehicle may be the first impression a potential customer has of you and your business, so it needs to be kept tidy and impressive to anyone who may see the inside.

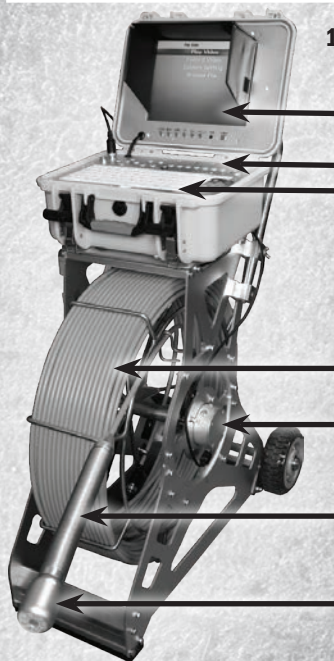
"Cleaning is done weekly," Grundmeier says. "I try to maintain as best as I can on a daily basis to keep the van in its best shape. I feel that the appearance of the inside is just as important as the appearance of the outside. If my customers — *when* my customers — see inside my van, they will see organization and not scatter. I believe that reassures them of my work ethic as well."

Whether it becomes your one and only service vehicle or part of a larger fleet, cargo vans have a lot to offer drain cleaners, but do some research and find the van that fits your business needs. **c**



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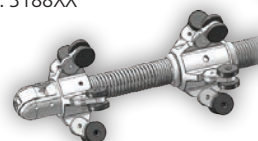
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# OPERATING WITH PRECISION

The versatile tool from Soil Surgeon streamlines hydroexcavation work

// By Kim Peterson

**L**IKE SO MANY INVENTIONS, the Soil Surgeon was created out of the need to do a job more efficiently. In this case, the job was locating and exposing pipelines — but Belinda Bain wanted to do it more easily, quickly and safely.

Bain started her first company, California Hazardous Services, out of her garage when she was 23. Nicknamed CalHaz, the company started out cleaning fuel tanks. It grew into testing, repairing and cleaning all parts of fuel tanks and their systems, and further evolved into other work, like cleaning storm drains. Taking on more municipal cleaning and hydroexcavation work gave Bain the idea to create the Soil Surgeon, in order to streamline those jobs and make them more profitable.

*Cleaner* recently spoke with owner Belinda Bain about creating the Soil Surgeon, its versatility and how it speeds up hydroexcavation work.

"IT ALLOWS YOU TO DO SO MANY THINGS. IT KNOCKS OFF SO MUCH TIME ON ANY JOB — HOURS, AND SOMETIMES DAYS ON BIG PROJECTS."

BELINDA BAIN

### Tell us a little about the history of Soil Surgeon.

Soil Surgeon came about when CalHaz had gotten a project where we had to remove six city blocks of pipe. In those days, hydroexcavating was done the old way, with a water gun. You would pound the tube on the ground. Some people still cut or dig that way. I kept thinking, if there were jets boring inward on this tube and some jets boring outward on the bottom of this ring, then I could keep digging downward and suck up the dirt.

So we went back to my warehouse and built a water ring with jets boring inward to cut the soil and outward to bring the tube down. I was losing money on that job but then we brought out

this new water ring and it sped up the job so much, we made a profit on it.

When it worked so well, I patented the Soil Surgeon and started marketing it to trucking distributors and companies that sell sewer combination trucks. I've been selling it now for 25 years.

### What differentiates your excavating attachment from the competition?

There were other little water rings out there, where the tips bore straight down, that I found out about later. But none of them worked for me. There was a water ring you put inside the tube and that doesn't work as well because that's how the suction sucks up the dirt — it would just get clogged. The one I designed is outside the tube, which allows it to bore inward and outward. That's the biggest thing.

The Soil Surgeon has handles — you grab hold of those handles and you just rock it back and forth after you have located your line, or in little circles in front of you, depending on how you're digging.

The water pipe is connected to the tube. We've got bumpers on the bottom of the tube to protect the lines and the tips. But you'll see a line 2 feet before you can get to it. It bores straight down. When you're line locating, looking at blueprints, it's not always completely accurate. So sometimes it takes a few bores to find it. But you can easily do that with this tool. And then the pipeline guys love it because when you locate a line, you can rock it back and forth and that clears out the soil underneath the pipe too, and then they can do the repair.



**BELINDA BAIN**

Owner of Soil Surgeon  
and CalHaz

YEARS IN THE INDUSTRY: 33

YEARS WITH COMPANY: 25



» The Soil Surgeon tool makes excavating utilities easier and safer because you can easily control the speed and power of the bore.

**What sort of needs do they address?  
Break down the Soil Surgeon X1 and X2  
and what applications they best serve.**

It allows you to do so many things. It knocks off so much time on any job — hours, and sometimes days on big projects.

The X1 is designed for digging, boring straight down. All the tips go inward and outward to dig. So this is best for digging a hole, line locating, etc.

The X2 is designed more for basin cleaning or storm drains. Because of all the cigarette butts and other trash, they started putting filters on storm drains here in California. To clean out the filters and the storm drains, you had to have certification for confined-space entry. So what's nice about the X2 is you don't need to go into the storm drain anymore. The X2 water ring has tips boring downward, outward to clean the walls of the storm drain and upward so it cleans the sides and top and cleans the filters too. And then you just vacuum it out.

**What are some recommendations for customers shopping for hydroexcavation equipment? What trucks are compatible with the Soil Surgeon?**

When I designed the Soil Surgeon, hydroexcavation wasn't as well known. Now we have hydroexcavation trucks. But whether you have a hydroexcavation truck or you have a sewer combination truck, a contractor can hydroexcavate or basin clean with any truck with the Soil Surgeon. It can open up so much more work for them, being able to dig like this. It's so much safer and faster. Traditional excavating is so risky now, when lines aren't always where they say they are.

The Soil Surgeon will fit on anything that has an 8-inch boom (I also have 6-inch tubes) and has a water tank, debris tank and a boom. As long as you have those three things, you can hydroexcavate. You don't need a million dollar truck.

**Is there any special training needed, or tips for operating the Soil Surgeon?**

If someone is trained to run these trucks, they can use the Soil Surgeon.

The tips are stainless steel, designed and fabricated specifically for the Soil Surgeon. We always warn customers when they're buying it for the first time, because people want to pound the edge



of it on the ground because that's what they're used to doing. We say, let the Soil Surgeon cut for you. Keep moving it in either a circle or back and forth and let the water cut for you.

If you use it every day, it'll last you a good four to five years — if you use it correctly and don't pound it on the ground. But if they do, we sell the tips. But we tell our guys, don't be lazy. Pull the boom up to connect the tube so you're not dragging it. Even though they're stainless steel, if you drag the Soil Surgeon or pound it on the ground sooner or later you'll have to replace those tips.

People will get the feel of it. The first thing we tell people to do if they haven't had a Soil Surgeon before is get out and play with it. Get the guys out to play with it in the yard, pop a couple holes so you can get the feel for it.

Another beautiful thing about it is you control the power. You have complete control with your truck. So for us, when we're locating a line, we'll go soft into the soil so it's not spitting up rocks and then when we're down a couple inches we can bore down with the water, until at about 4 feet and then we back off on the water a bit until we find the line.

**How do you see the sewer cleaning industry evolving?**

Storm drains are becoming more predominant around the country — California especially, being near the ocean. People are becoming more aware of keeping our environment clean, and the Soil Surgeon can play a role in that.



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## BEHIND THE GEAR

### What can customers expect out of Soil Surgeon in the future?

I've had people say you should add gears, or this or that. But I don't want any moving parts, because then you have oil. The Soil Surgeon has worked for 25 years, so I don't see changing it. We did bring out the X2 a few years ago, so that market where you'd have to enter a confined space otherwise is definitely something I see growing. As we see more and more regulations, I think the X2 will become more popular.

### What do you want your customers to think of when they hear the name Soil Surgeon?

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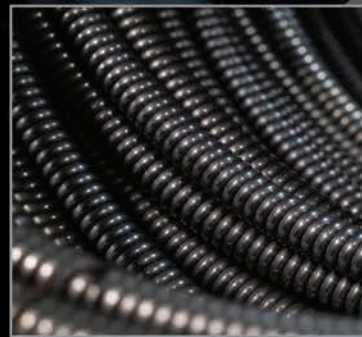
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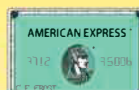
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# THE RIGHT STUFF

PRO SERVICE PLUMBING BUILDS A LARGE CUSTOMER BASE WITH HIGHLY TRAINED TECHNICIANS AND THE NEWEST TECHNOLOGY

// By Ken Wysocky

Photography by Amy Voigt



## A NAME LIKE PRO SERVICE PLUMBING SETS A HIGH BAR FOR CUSTOMER EXPECTATIONS AND SERVICE.

But master plumber Chris Sbrocco meets that challenge every day with well-trained employees and investments in new technology that help the Cleveland-based company do jobs right the first time — even under dire conditions.

Take the emergency call he received from the owner of a popular Cleveland restaurant in fall of 2017. The eatery was jammed with customers amped up about a playoff game between the Cleveland Indians and the New York Yankees when a clogged mainline sent sewage spilling up through floor drains in the kitchen and two bathrooms.

“The owner was preparing to shut down the restaurant when I got the call,” recalls Sbrocco, 36, who established his company in 2010. “The place was really jamming — it was a worst-case scenario.”

When Sbrocco arrived, he quickly shut off the building’s waterline while harried employees used shop vacs in a vain attempt to keep up with the overflowing sewage. To make things even more interesting, the clean-out in the older building was in the middle of the crowded dining room.

He unloaded a RIDGID K-6200 drum cable machine from his truck and went to work.

“I was surrounded by people; it was pretty chaotic and crazy,” he says. “But I got the line open in 15 to 20 minutes. Luckily it wasn’t a bad clog. The owner and manager were very grateful — I guess you could say we saved the day.”



**Pro Service Plumbing**  
CLEVELAND, OHIO

<b>OWNER</b>	Chris Sbrocco
<b>FOUNDED</b>	2010
<b>EMPLOYEES</b>	6
<b>SERVICES</b>	New-construction plumbing, remodeling, emergency services, drain cleaning
<b>SERVICE AREA</b>	Metropolitan Cleveland
<b>WEBSITE</b>	<a href="http://www.pspcleveland.com">www.pspcleveland.com</a>



« The Pro Service Plumbing team, based in Cleveland, Ohio, includes (from left) Joshua Belon, Tim Tepeck and owner Chris Sbrocco, who started the company in 2010.

Plumbers and drain cleaners must always be capable of providing for customer 24/7, regardless of the situation, Sbrocco says.

### ALL IN THE FAMILY

The chance to be a local hero — and earn good money, too — were among several reasons why Sbrocco decided to be a plumber. The seeds for his career were planted after he graduated from high school in 2003 and started working for his uncle, John Sbrocco, who owned JR Sbrocco Plumbing.

“I saw how people respected my uncle and how important he was on job sites,” Sbrocco says. “He was a well-respected professional. And the fact that he had a huge house and Corvettes and other sports car was enticing, too.”

Sbrocco worked for his uncle for 10 years. He started his own company while still working for him, doing side jobs as time allowed and slowly building a customer base through word-of-mouth referrals.

» Joshua Belon unloads a RIDGID SeeSnake to inspect a line on a commercial drain cleaning job.







“WE PRIDE OURSELVES IN DETERMINING THE ISSUE AND PROVIDING A CUSTOM SOLUTION — WITH NO CALLBACKS.”

CHRIS SBROCCO

« Chris Sbrocco uses a SeeSnake inspection system to determine the condition of the drain system in a commercial building.

» Sbrocco, center, conducts a marketing meeting with employees from Pro Service Plumbing and his other businesses.

“At that point, I knew I was a capable plumber and wanted to own my own company,” he says.

Sbrocco started out as the sole employee and now employs five technicians. The company primarily does plumbing for new construction and remodeling project, plus drain cleaning.

Along the way, he also built up a small but reliable roster of equipment, including two Spartan Tool 300 cable drain machines; two Spartan 100 cable machines; one KJ-1760 mini jetter and a K9-306 FlexShaft cable machine, both from RIDGID; and a SeeSnake rM200B inspection camera with a CS6X color monitor and a SeekTech SR-24 pipeline locator, all manufactured by RIDGID.

Two Mercedes-Benz Sprinter vans and two Ford Econoline vans, featuring shelving-and-storage systems made by American Van (a Safe Fleet brand) and Ranger Design, round out the fleet of equipment.

## FULL-SERVICE SHOP

Sbrocco says owning the proper equipment to service customers is a big reason why the company has created a large customer base.

“Obviously we all love using the latest and greatest tools and equipment,” he says. “But at the same time, you do customers a service by staying up to date on new technology that can provide solutions that save them money because you can do jobs faster and not create more work.

“We pride ourselves in determining the issue and providing a custom solution — with no callbacks.”



While many plumbers prefer to avoid drain cleaning, Sbrocco has always embraced it. To him, it’s yet another way of being a one-stop, full-service provider for customers.

“Doing drain cleaning provides opportunities to gain other customers for the plumbing side of the business,” he explains. “One feeds the other.

“The ability to provide 24/7 emergency service, say, during a holiday, creates customers for life. They never forget the situation they were in — and who came out to fix the problem.”

Doing quality work also helped establish solid business relationships with new-construction contractors that foster repeat business.



» Sbrocco loads a RIDGID FlexShaft K9-306 into his truck to bring to a commercial drain cleaning job.



“The contractors I work with are pretty loyal to me because of the quality of our work, plus our good communication and how we present ourselves,” he says. “Our guys are clean-cut and arrive on job sites in professional-looking vehicles, with clean tools. We take a lot of pride in what we do.”

### INNOVATIVE EXPANSION

It's not unusual for plumbers and drain cleaners to want to expand into complementary services that generate more revenue streams and boost their one-stop-shop appeal. But lack of financial resources required for expensive capital purchases often poses an obstacle.

That was the case with Sbrocco, who wanted to capitalize on a push by local officials to get homeowners to abandon septic tanks when new sewer lines are installed, then connect the homes to the sewer lines.

“We did several septic system abandonments, but my team is more geared toward residential plumbing for new construction, so we'd end up subbing out the sewer work,” he explains. “We just didn't have enough manpower and [excavation] equipment to do it ourselves.”

Rather than leave money on the table by sending the work to subcontractors, Sbrocco and two business partners — Jeremy Dotson and Daniel Austin — formed Earthworks Environmental of Ohio LLC in 2020.

Dotson owns a commercial construction company that does excavation work and wanted to get into sewer work. Sbrocco was getting leads for such projects from plumbing customers, but wasn't equipped to do them.

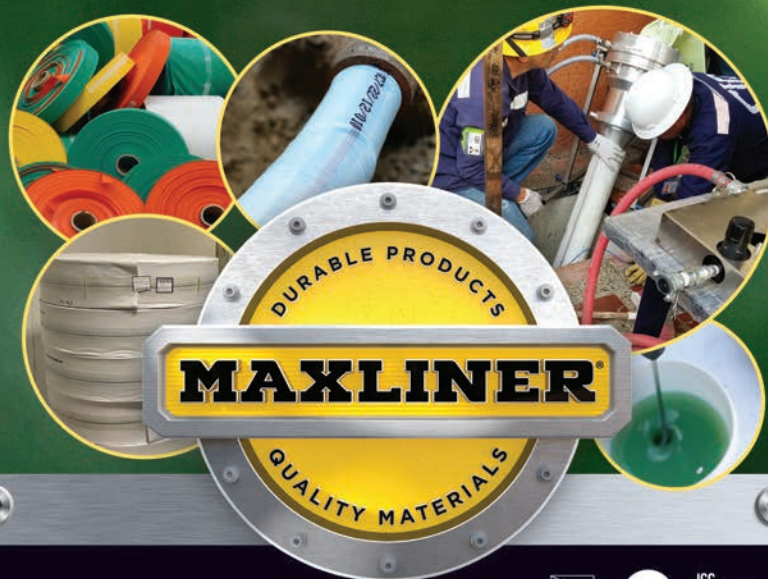
“Trying to do everything in-house is hard to manage ... so I became business partners with some of the best guys around,” he says. “That way my good technicians aren't stuck on a dig job for a week.

“Instead, they're using our equipment to diagnose situations and design plans for Earthworks to execute. We figure out custom solutions and Earthworks does the actual work. We do what we do well and they do what they do well.”

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## TEACHING THE VALUE OF A TRADE

**M**aster plumber Chris Sbrocco is passionate about the trade that provides him with a great living and satisfies his love for solving problems and overcoming challenges. About two years ago, he started paving the way for high school students to gain the same kind of appreciation for the skilled trades.

The conduit for that desire to expose young people to trade careers came in the form of a class at Perry High School in Perry, Ohio, a small town near the shore of Lake Erie, about 30 miles northeast of downtown Cleveland.

Call it home schooling, of sorts; the Perry Local School District purchased a vacant house for \$89,000 and is letting students in the so-called Pirate Project renovate it. The district hopes to “flip” the home when it’s finished and hopefully recoup its initial investment.

Instructed by local contractors like Sbrocco, students — about 40 in all from two different home-renovation classes — spend two class periods a day at the house. They’ve performed a wide variety of jobs, such as installing drywall, insulation and new windows, doors and siding; building new walls; doing carpentry and painting; and working on the heating, electrical and plumbing systems.

The district used its own funds to buy the house. A grant from the Ohio Department of Education pays for materials and the cost of hiring contractors to teach as well as perform some of the more technical and/or risky jobs — finished plumbing and electrical work, for example — that the novice students aren’t equipped to handle.

“It’s a pretty cool project,” says Sbrocco, who was paid an hourly rate for teaching plumbing to students. “It’s pretty incredible to see how these boys and girls interact and soak it all up. Some students didn’t think they’d like any of it, but after they dug in, they really enjoyed it.

“I think a good number of these students have indicated they may follow a career path into the trades. But even if they don’t, they’ll at least have more respect for the trades. It’s awesome.”

Sbrocco says he’d like to expand his teaching efforts to include developing an online trade school that would help develop more plumbers — perhaps some that might become Pro Service employees.

“I pride myself on being capable enough to teach the trades,” he says. “I’ve had five or six employees leave and form their own businesses. I’m never going to knock someone who leaves my company and uses the skills I taught them to better themselves. I’m proud of that, and that they’re doing work at a high level.

“Teaching the trades the right way — emphasizing the need to take pride in their work — is very important. It’s disrespectful to the trades to do sloppy work, so it’s important to instill those values.”



Chris Sbrocco (left) feeds the line as Belon watches the monitor while inspecting drainlines in a commercial building.

### POWERFUL PARTNERSHIPS

The partnership offers customers a full range of services from excavation to sewer tie-ins — even restorative landscaping when needed. “When we walk away from a project, it’s finished and complete,” Sbrocco says.

Sometimes the new sewer lines are thousands of feet away from homes, but residents still are required to connect their homes to them. So Pro Service diagnoses the situation and designs plans that might include lift stations that pump sewage to the sewer line.

In the interest of full disclosure, Sbrocco says that when he recommends Earthworks to execute plans designed by his company, he tells customers that he’s a part owner.

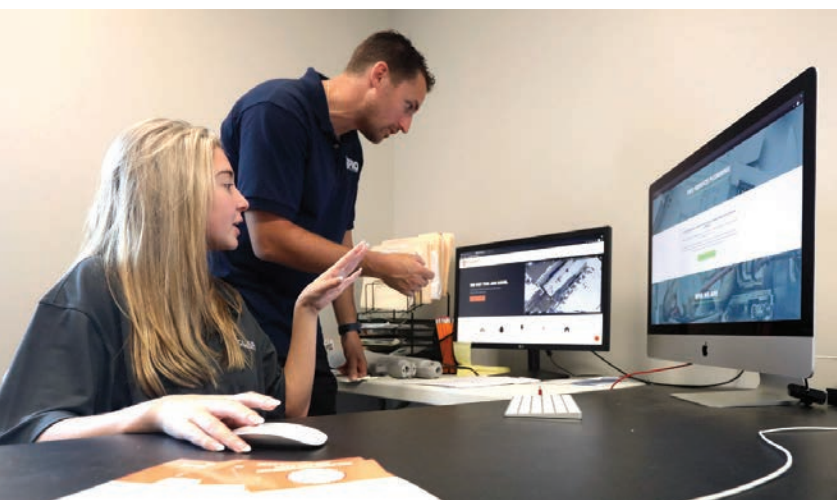
Austin and Sbrocco also are business partners in a restoration business called Claim Professionals, which helps homeowners and

“DOING DRAIN CLEANING PROVIDES OPPORTUNITIES  
TO GAIN OTHER CUSTOMERS FOR THE PLUMBING SIDE  
OF THE BUSINESS. ONE FEEDS THE OTHER.”

CHRIS SBROCCO

businesses navigate insurance claims for things such as sewer backups. Sbrocco frequently encounters sewer backups, which leads to referrals for the company.

“Ultimately, all three businesses tie into each other,” he explains. “The work is out there. ... We’re just starting a marketing campaign that includes door-to-door sales calls to let customers know what we’re capable of doing.”



Marketing manager Markelle Kallibjian (left) and Sbrocco discuss an outreach strategy in the Pro Service Plumbing office.

"OUR GUYS ARE CLEAN-CUT AND ARRIVE ON JOB SITES IN PROFESSIONAL-LOOKING VEHICLES, WITH CLEAN TOOLS. WE TAKE A LOT OF PRIDE IN WHAT WE DO."

CHRIS SBROCCO

## HIGHLY TRAINED TEAM

Looking ahead, Sbrocco says he's less interested in exponential growth and more concerned about developing employees' skills to the fullest. Generally speaking, new employees are good at either drain cleaning or new-installation plumbing, but rarely both.

As a result, he anticipates scaling up his business when he's able to develop a fully trained team. He'd also like to add more quality employees, but as anyone in the industry knows, that's easier said than done, especially with a shortage in skilled tradesmen.

"Growth will come as they gain experience," he says. "The work definitely is out there, so the more guys we have, the better. But they have to be able to do anything and everything so we can keep providing value for customers." **c**

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## MORE WORK, LESS WATER

Water-recycling vac trucks ratchet up productivity while reducing water costs for customers

// By Ken Wysocky

**T**YLER LOVEDAY, a project manager at Wessuc, can sum up the benefit of investing in RECyler 315 vacuum trucks in just 10 words: Less time refilling water tanks and more time cleaning sewers.

Used primarily for municipal and commercial sewer cleaning, the water-recycling trucks from Bucher Municipal help the Brantford, Ontario-based environmental services company save about 7,925 gallons of water on an average sewer-cleaning job that would require approximately six to seven refill trips a day for a conventional vacuum truck.

“On most jobs, we can get by on just one tank of water,” says Loveday, noting the trucks feature roughly 1,300-gallon water tanks. That translates into lower water costs for customers, which enable the company to be more competitive on bidding for jobs.

Furthermore, jobs become more profitable, thanks to significantly greater productivity — up to about 3,500 to 5,000 feet of sewer cleaning a day, compared to about 2,500 to 3,000 feet per day with a conventional vac truck, he says.

“Plus there’s less traffic disruption because we can set up a truck at a location just once, instead of multiple times,” he adds. “And when we’re working on remote locations, we don’t usually have to worry about water sources.”

The company tested two of its three RECyclus from mid-June through mid-November in 2018. The trucks cleaned sewer lines for 100 days for the city of Winnipeg in the province of Manitoba, averaging 11-hour days.

Wessuc saved the city \$211,134 in water costs. In addition, the trucks added only 475,473 gallons of water back into the city’s wastewater treatment system while recycling just more than 12 million gallons of water, the study showed.

### BUILT FOR PRODUCTIVITY

Wessuc bought the three RECyclus in 2018 at a cost of about \$500,000 each (or roughly \$700,000 in Canadian dollars, depending on currency-exchange rates). Each truck was built out on a Kenworth T880 chassis and features a 15.7-cubic-yard debris tank, a VacuStar liquid-ring vacuum pump made by CVS Engineering GmbH (1,824 cfm) and a URACA P3-45 triplex water pump (80 gpm at 2,400 psi).

The truck also features a 180-degree articulating reel that holds 656 feet of 1 1/4-inch-

CONTINUED >>

« The RECyler 315 vacuum trucks from Bucher Municipal help Wessuc, a Brantford, Ontario-based environmental services company, save about 7,925 gallons of water on an average sewer-cleaning job.



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# MONEY MACHINES

» With the RECyler 315 trucks jobs become more profitable, thanks to significantly greater productivity — up to about 3,500 to 5,000 feet of sewer cleaning a day, compared to about 2,500 to 3,000 feet per day with a conventional vac truck.



## WESSUC

BRANTFORD, ONTARIO, CANADA

**OWNERS** Shane and Hank VanVeen

**MACHINE** RECyler 315 water-recycling vacuum truck from Bucher Municipal

**FUNCTION** Continual on-the-job water recycling while cleaning sewers

**FEATURES** Kenworth T880 chassis; 15.7-cubic-yard debris tank; 1,300-gallon water tank; VacuStar liquid-ring vacuum pump from CVS Engineering GmbH (1,824 cfm); Uraca P3-45 triplex water pump (80 gpm at 2,400 psi); 180-degree articulating reel; 656 feet of 1 1/4-inch-diameter hose; 164 feet of 1/2-inch hose; 66-foot-long, 6-inch-diameter cleaning hose.

**COST** Approximately \$500,000

**WEBSITE** [www.wessuc.com](http://www.wessuc.com)

diameter hose for cleaning larger pipes. A small reel carries an additional 164 feet of 1/2-inch hose for smaller pipes and washdown work, Loveday says.

For removing debris, the truck relies on a 66-foot-long, 6-inch-diameter hose that stores atop the truck and can drop down 34 feet for cleaning. The hose eliminates the time-consuming job of attaching sections of tubes to increase the vacuum-hose length.

“It’s an added value to not have to add extra tubes,” Loveday says. “It’s more efficient and puts less strain on the operator.”

Here’s how the fully continuous water-recycling system works: As the truck vacuums up debris, the system separates wastewater from the sludge, then cleans it with a five-stage filtering process that includes nine cyclone bags. A movable partition in the debris tank keeps sludge separated from the recycled water; it also gives the operator the flexibility to gain or reduce space for either water or sludge as needed.

Furthermore, the vacuum pump automatically shuts down when there’s enough vacuum in the tank, which reduces fuel consumption — sometimes up to 20%.

Two of the trucks also feature winterization packages with heated compartments and components. In addition, the trucks are significantly quieter than standard vacuum trucks, which translates into less disruption when the company works in residential neighborhoods, Loveday explains.

“THE REDUCED ENVIRONMENTAL FOOTPRINT AND THE WATER WE SAVE EACH DAY WERE BIG CONSIDERATIONS FOR US. THE LESS IMPACT WE HAVE ON THE ENVIRONMENT, IN TERMS OF WATER USAGE, THE BETTER.”

TYLER LOVEDAY

Generally speaking, the 315s have been durable and reliable. “They are the workhorses of our fleet. We can rely on these trucks to complete all of our jobs.”

### EFFICIENT AND ECO-FRIENDLY

As an environmental services company that also handles waste disposal in the industrial and agricultural sectors, the Bucher water-recycling trucks help from a marketing standpoint by underscoring the company’s commitment to the environment, Loveday says.

“The reduced environmental footprint and the water we save each day were big considerations for us. The less impact we have on the environment, in terms of water usage, the better. It’s a company value that we stand by.

“And at the same time, these trucks allow us to provide customers with cost-effective and efficient service by not wasting time and labor with water-tank refills,” he adds. “The bottom line is we now can do more work in a day and in a year.

“These trucks have been a very good investment for our company.” **C**



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## CIPP LINING METHODS AND PROJECTS

By Craig Mandli

### » CIPP EQUIPMENT AND MATERIALS

#### 1 // HAMMERHEAD TRENCHLESS BLUELIGHT LED CIPP LINING SYSTEM

The BlueLight LED CIPP Lining System from HammerHead Trenchless is an advanced light-curing system for the rehabilitation of laterals and small drain pipes. The technology empowers CIPP installers by alleviating the time pressures of other lining systems. The specially formulated resin only cures under light in the blue wavelength (444-457 nm) giving installers virtually unlimited working time between liner wet-out and curing. Once the liner is in place, the automated curing system pulls the LED light head through the liner, curing the resin almost instantly — as fast as 5.4 feet per minute. Instead of waiting hours for the liner to cure, a 50-foot sewer line could be fully cured in under 10 minutes. The system has a touch-screen interface and three light head options to cure liners 3 to 10 inches in diameter. 800-331-6653; [www.hammerheadtrenchless.com](http://www.hammerheadtrenchless.com)



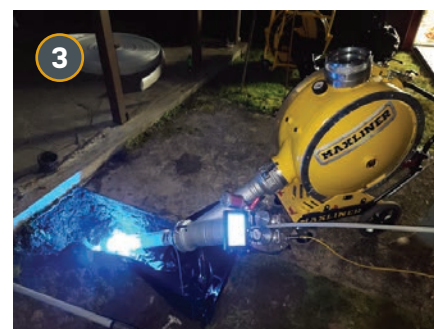
#### 2 // HURRICANE REINSTATEMENT SOLUTIONS TWISTER

The Twister from Hurricane Reinstatement Solutions offers users an upright tool that will spin at a high rpm, allowing for faster cleaning whether for opening a blockage, root removal, descaling or doing reinstatements on CIPP liners. It comes in both 110- and 240-volt models. Both units feature an open-air drum concept and are only 17.5 inches wide, allowing for tight areas. They come with Baldor Motors available in 1.5, 2 and 3 hp models and ABB drives with an internal clutch for safety of the user and longevity of the cable. Both units offer a cable distribution array allowing the cable to be positioned in multiple angles and positions while reducing the traditional weights of other tools. 702-376-1483; [www.hurricanereinstatementolutions.com](http://www.hurricanereinstatementolutions.com)



#### 3 // MAXLINER MAXLIGHT

MaxLiner's LED-based UV curing system, MaxLight, optimizes CIPP operations by increasing work efficiency. Curing does not begin until resin is exposed to the finely calibrated UV light, allowing pre-impregnated liner assembly at the shop or on site, eliminating pot life concerns and allowing for several installations in a single day. The systems are formulated to cure with UV light and offer superior mechanical properties and chemical resistance. These resins are designed with excellent wet-out capability, ultra-low odor and are styrene-free. Systems are single-component resins designed to meet all specifications for a fully structural CIPP liner conforming to all applicable ASTM standards. 877-426-5948; [www.maxlinerusa.com](http://www.maxlinerusa.com)



#### 4 // PICOTE SOLUTIONS MIDI ROLLER

The hybrid Midi Roller from Picote Solutions is battery operated (up to 10 hours working time) or chargeable while in use, and can be used to easily wet out CIPP liners from 2 to 8 inches on site. It comes with variable speed and bidirectional controls. The upper roller lifts up, making wet-out faster and easier. It can be used as a stand-alone roller, or add to the Picote Wet Out Station to build a complete 59-inch portable and powered wet-out unit. The unit is 14.2 by 19.1 by 10.4 inches, and provides variable speeds of 9 to 29.5 feet per minute, with gapping of 4 to 14 mm (in 0.5 mm increments). 708-267-6366; [www.picotesolutions.com](http://www.picotesolutions.com)





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## 5 // PIPE LINING SUPPLY MAGMA FLEX

Magma Flex from Pipe Lining Supply is a fiberglass material suitable for use with heat or UV curing processes. It is up to four times stronger than standard lining material, and can be used for conventional lining of nominal diameters, transitions from one dimension to another and for point repair. 888-354-6464; [www.pipeliningssupply.com](http://www.pipeliningssupply.com)

## 6 // PIPELINE RENEWAL TECHNOLOGIES SPEEDYLIGHT+

SpeedyLight+ from Pipeline Renewal Technologies is an LED-based UV solution for CIPP that cures at speeds ranging from 0.66 to 3.3 feet per minute. Because it's compatible with felt (as well as invertible glass fiber), it can cure 90-degree bends in lines as small as 4 inches, as well as other challenging geometries like transitions and verticals. Free of styrene and amines (and the associated odor), UV-based cure technologies raise fewer objections from the public and a crew. The single-part vinyl ester resin requires no mixing and eliminates shelf life and working time challenges. It uses LED lamps to cure, drawing half the power of traditional UV technology while providing a more powerful cure. The integrated camera lets operators monitor the curing process in real time for optimal quality control. The highly portable design allows for access from even the most remote sites, curing up to 328 feet of liner in pipe 4 to 12 inches. 866-936-8476; [www.pipelinert.com](http://www.pipelinert.com)



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## 7 // WATERLINE RENEWAL TECHNOLOGIES LIGHTRAY LR3 LED UV SYSTEM

The LightRay LR3 LED UV System from Waterline Renewal Technologies allows the operator complete control of the curing process. It can significantly reduce costs and risks compared to traditional thermo-setting or ambient-cured CIPP liners, creating new opportunities for plumbers and municipal contractors. It is both a pull-in-place and spot repair system that provides the flexibility to perform both operations by changing the double-strand cold LED repair packer. Non-VOC resin is pre-impregnated into the high-performance fiberglass liner and shipped ready to install for no-dig small-diameter pipe infrastructure repairs. Once the install site is prepped, casting times in less than 10 minutes can be achieved, eliminating the risk of premature or prolonged curing times due to temperature variations. It can be used to repair pipe diameters of 3, 4 or 6 inches, including transitions. The 100-foot hose couples with 5-, 10- or 20-foot packers to perform repairs. 866-336-2568; [www.waterlinerenewal.com/brand/lightray](http://www.waterlinerenewal.com/brand/lightray)



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## » HYDROEXCAVATION 8 // DYNABLAST HV420

Custom Dynablast HV420 hydrovac water heaters produce 420,000 Btu with an output temperature of 175 degrees F at 5 gpm, making them suitable for colder climates and improved digging in clay-filled areas. All models come with ETL certification for safety, which also includes certification on the coil for higher efficiency and heat transfer, a stainless steel target plate for increased coil life and momentary override control. They include an Interpump Group T 2040 water pump package providing 10.5 gpm at 2,900 psi and 1,750 rpm, as well as a hydraulic package with Sunfab 34 cc motor. All components are custom-mounted in a 24-by-24-inch cabinet. 905-867-4642; [www.dynablast.ca](http://www.dynablast.ca)



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# PRODUCT FOCUS

## 9 // ENZ USA HYDRO X

The Hydro X nozzle from Enz USA is available in 3/8-inch NPT or 1/2-inch connecting threads, and it can function at up to 5,000 psi with flow as low as 8 gpm. It combines a powerful, oscillating water jet with a high debris removal rate. A tungsten carbide front jet ensures a longer life than ceramic jets can offer. For quick and easy maintenance, a repair kit is available. Due to the nozzle's simplicity, repairs can be made quickly and efficiently in the field with little downtime. For the operator's safety, a plastic cover provides protection against harsh and sensitive environments. 888-369-8721; [www.enz.com](http://www.enz.com)



## 10 // GAPVAX HV33

Designed to safely transport water and debris in urban areas, the GapVax HV33 is shorter, smaller and more compact than its predecessor. It is 30 feet long overall on a medium-duty chassis and includes a 600-gallon water tank, 6-cubic-yard debris body, 6- or 8-inch top-mounted telescoping boom with a 14- to 17.5-foot reach, 4,000 cfm power and an inverted, full-opening tailgate. 888-442-7829; [www.gapvax.com](http://www.gapvax.com)



## 11 // RAMVAC BY SEWER EQUIPMENT HX-12

The HX-12 hydroexcavator from RAMVAC by Sewer Equipment has a 12-yard debris tank and a heated, secured equipment locker that contains the entire water system, including water tanks, for cold-weather application and tool security. This machine touts a directional discharge system with the ability to off-load debris back into the excavation site when done, without the mess of dumping the tank. This system also allows operators to blow any obstructions out of the dig hose and get back to work. It includes a long-range wireless remote, NEMA 4 electrical system, an 800,000 Btu water heater and a three-stage cyclonic filtration system. The standard 4,400 cfm blower will match the performance of larger blower machines while delivering fuel economy with the ability to go up to 5,400 cfm. The series offers debris capacities from 3 to 15 cubic yards while maintaining a short overall footprint. 877-735-4640; [www.ram-vac.com](http://www.ram-vac.com)



## 12 // RIVAL HYDROVAC T7 TANDEM

The T7 Tandem hydrovac from Rival Hydrovac was designed primarily to be loaded with debris and driven within legislated road limits with most types of debris on board. The unit comes standard with a scale that reads real-time weights both in the cab and on the wireless remote to confirm weights prior to travel. An air option is available on both the T7 and T10 models. These units also have the same hydro system as any other Rival unit. This hydraulically driven compressor runs in both a low- and high-pressure range allowing for 150 psi and 150 cfm for the operating of air tools or 200 psi and 200 cfm for the operating of an air knife. 403-550-7997; [www.rivalhydrovac.com](http://www.rivalhydrovac.com)



## 13 // SEWERPROSHOP RAVEN

The Raven hydroexcavation nozzle from SewerProShop has been precision engineered by Intersewer and manufactured to the highest technical standards by ISO 9001:2008 certification in Germany. The weight has the purpose to counteract the high-pressure kickback of the wand. It is constructed from high-grade stainless steel, is threaded, and includes a replaceable ceramic nozzle insert with forward water jet angled at 0 degrees or a fan jet. It is rated for 18 gpm at 4,000 psi up to 80 gpm at 2,500 psi. It includes a 1/2- to 1-inch sewer hose connection. It is operator friendly, with no maintenance required. 877-864-9394; [www.sewerproshop.com](http://www.sewerproshop.com)





#### 14 // SUPER PRODUCTS MUD DOG 700

Mud Dog 700 vacuum excavators from Super Products are designed for operator convenience and consistent performance to meet the challenges of a wide variety of applications from compact, urban projects to large-scale excavation, potholing and trenching projects. Units come standard as hydroexcavators with an optional air excavation package. The product line comes in a variety of model configurations, with the 700 model designed to be a small, compact unit, ideal for urban environments, with 7-yard debris capacity and 600-gallon water tank capacity. This allows for a shorter turning radius and maximum legal payload. This unit comes standard with a dump unloading system with the capability to dump into a 48-inch container. Additionally, it is equipped with a rear mounted, 8-inch-diameter boom that reaches 18 feet, has 270-degree rotation and can move in a 10-degree downward pivot allowing for versatility within dig areas. 800-837-9711; [www.superproducts.com](http://www.superproducts.com)



#### 15 // TORNADO GLOBAL HYDROVACS F4 ECO-LITE

The F4 ECO-LITE from Tornado Global Hydrovacs has a 12-cubic-yard mud tank and holds 1,550 gallons of freshwater. The unit is more than 7,000 pounds lighter than the company's older models and offers more than double the payload. The boom has a 342-degree rotation and 26-foot reach. The smaller F3 ECO-LITE is a 10-cubic-yard, 1,250-gallon tandem-axle unit that more than doubles older payload capacities. It features an 8-inch boom and 3,800 cfm blower. 877-340-8141; [www.tornadotrucks.com](http://www.tornadotrucks.com)



#### 16 // VAC-CON X-CAVATOR CXT

The X-Cavator CXT hydrovac from Vac-Con is designed to take on hydroexcavation tasks in municipal and utility fields. It offers operators a precise and efficient method for daylighting, locating underground utilities and excavating. It includes simple, operator-friendly features and a range of content options to meet the requirements of any and every customer. This unit is designed to operate on both wet and dry excavation work sites. The standard unit is offered with a three-stage centrifugal compressor, dual cyclonic separators and hydrostatic drive. Popular options include an articulating, rear-mounted PowerFlex boom, air compressors up to 185 cfm equipped with air knife, a Quiet package silencer for the centrifugal compressor, and a full range of positive-displacement blowers. It is available in a 9-, 11- or 12-yard debris tank configuration with 1,100 to 1,300 gallons of water capacity. A range of positive-displacement blowers are also available. 904-284-4200; [www.vac-con.com](http://www.vac-con.com)



### » PIPELINE REHABILITATION/LINING

#### 17 // ARIES INDUSTRIES TEST AND SEAL GROUTING SYSTEM

The Test and Seal Grouting System from Aries Industries reduces setup time and provides efficient hands-on control to quickly seal leaking joints. Grout — pumped to a leaking joint — flows through the leak, sealing the surrounding soil to form an impenetrable barrier. Sixty-gallon tanks and continuous-duty mixers provide high volume to seal large voids. Reels for fast deployment and retrieval, as well as high-power winches, quickly move the packer from joint to joint for high productivity. The unit's 800 feet of color-coded hose allows long runs. The truck comes with a bench, storage and room to work. The operator tests and seals the joints while working in the control room, where test data and the sealing process are easily viewed, recorded and logged. 800-234-7205; [www.ariesindustries.com](http://www.ariesindustries.com)



## 18 // IPT INTERNAL PIPE TECHNOLOGIES PULL-IN-PLACE PIPE LINING SYSTEM

IPT Internal Pipe Technologies' Pull-in-Place Pipe Lining System completely rebuilds the horizontal and vertical drainpipes as small as 1 1/2 inches in diameter from the inside with a new pipe made of epoxy resin and felt. Liners can be launched from existing access points to not only seals cracks and leaks but restore sections of pipe that have deteriorated. These pipe systems include vertical sanitary stacks, horizontal sewer mains, branches, roof drains and lateral lines. The company has bridged the gap between technology and technician by utilizing a technique with data streaming, which is available on site to any smart device using QR codes. 888-478-6649; [www.internalpipetech.com](http://www.internalpipetech.com)



## 19 // PRIME RESINS PR10

PR10 acrylamide from Prime Resins is a low-viscosity permeation liquid chemical grout that is injected from within the manhole, wicking into the soil outside or used to curtain-grout the exterior. A high-pressure pump injects grout through the manhole wall into the surrounding soil or is injected directly into the surrounding soil, creating an impermeable barrier. The permeation grout doesn't expand, but rather saturates the soil immediately outside of the manhole (with a desired gel time) that permanently stabilizes the soil and prevents further groundwater penetration. 800-321-7212; [www.primeresins.com](http://www.primeresins.com)



## 20 // SPRAYROQ SPRAYWALL

SprayWall from Sprayroq is a rigid polyurethane material that provides structural integrity and infiltration control to underground infrastructure assets. It is a 2-1 ratio product that is applied via a heated, plural component spray system. It begins to gel in about eight seconds and is tack-free after two minutes. Within 30 to 60 minutes, the initial cure is complete and the structure is capable of accepting flow. The benefits include its structural capacity, which provides for protection against multiple load components within an underground asset including water, soil and traffic loads. In addition, it allows an asset owner to return a structure to service quickly, creating a huge savings on bypass cost, as well as decreasing the overall downtime for a given structure. It is also third-party tested and most recently has undergone significant successful evaluations through AASHTO. 205-957-0020; [www.sprayroq.com](http://www.sprayroq.com)



## 21 // WARRIOR TRENCHLESS SOLUTIONS THERMOFORM

Thermoform from Warrior Trenchless Solutions is a PVC-alloy structural pipe lining system designed for the trenchless rehabilitation of failing sewer and culvert pipes. It is an environmentally friendly, styrene-free thermoplastic. There are no harmful emissions, and it does not rely on any chemical reaction during installation. Factory-controlled production with rigorous material testing ensures a consistent quality product that conforms to and exceeds the expected standards. The material is highly flexible, allowing it to expand and fit tightly to the host pipe, including changes in shape and dimensions. It is produced in sizes ranging from 4 to 36 inches in diameter, and the wall thickness can be varied according to the application. All installers must be accredited and audited to ensure the highest quality work possible. 716-601-7760; [www.thermoformliner.com](http://www.thermoformliner.com)

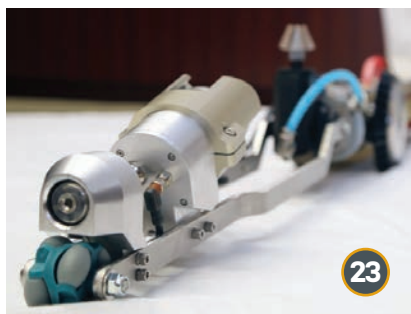




## » REINSTATEMENT CUTTERS

### 22 // APEX CIPP SOLUTIONS DANCUTTER SUPER FLEX

The Dancutter Super Flex from Apex CIPP Solutions is a robotic reinstatement cutter that offers continuous 360-degree rotation for optimum use in every pipe material. It is a powerful answer for cutting, milling and grinding pipes and liners 3 to 6 inches in diameter, even with plumbing bends. It is easy for one person to set up and operate. A large full-color display provides a sharp, precise image of the cutter's position. Rotation and functions such as raising, lowering and running back and forth are operated from the control unit. This flexible, advanced cutter is focused on reliability, simplicity and saving time, which allows the user to quickly move on to the next task. Extensions and accessories including centering tools, cutting heads for various materials and conditions, "grabber" attachment, and VR goggles integrate with the tool. Training is included with purchase. 855-997-0524; [www.apexcipp.com](http://www.apexcipp.com)



### 23 // CUES CURRAHEE CUTTERS

CUES small and large Currahee Cutters are specifically designed to reinstate wastewater service laterals, remove protruding taps and brush finish existing cuts. The cutters function in a range of 5.25- through 36-inch pipe, are equally effective in CIPP or fold-and-form liners and can be installed on any CCTV manufacturer's truck-mounted system. A 1.9 hp air motor for the small cutter line provides more power, increased productivity and a smoother cut when operating in 6- to 12-inch relined pipe. Kits are available to retrofit existing cutters for use with Kangaroo air motors, and service kits can be purchased for regular maintenance intervals on existing motors. 800-327-7791; [www.cuesinc.com](http://www.cuesinc.com)



### 24 // RAPIDVIEW IBAK NORTH AMERICA MICROGATOR 2.0

The RapidView IBAK North America MicroGator 2.0 reinstatement cutter is equipped with a powerful, yet efficient electric motor. It has a maximum revolution speed of 10,000 rpm while running at 3.5 kW. Its BG 1 motor allows users to install a front-viewing camera that allows a better view to increase forward awareness. The IBAK CutterCam, found directly behind the cutting motor, provides an incredible view of the work area and keeps the lens clean with air-curtain technology. Having these two views paired with fourth-axis articulation provides operators with ultimate control. With cable lengths extending up to 500 feet, interchangeable cutting/grinding bits and the ability to access lines from 8 feet all the way up to 32, it is designed to withstand the toughest jobs. 800-656-4225; [www.rapidview.com](http://www.rapidview.com) c

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## CASE STUDY

# CIPP LINING METHODS AND PROJECTS

// By Craig Mandli

### FAILING CULVERT SAVED WITH TRENCHLESS POINT REPAIR



**PROBLEM** / An Atlanta suburb was experiencing severe infiltration from a failing corrugated culvert, installed years before as a stream crossing. The exposed 8-inch culvert was used as a sewer line between two manholes and a retaining wall was built directly on top of it. Rusting over the years caused a couple dime-sized holes, allowing stream water to pour directly in. Traditional dig-and-replace methods required bypassing both the sewer and the stream to prevent sedimentation, in addition to demolishing and relocating the retaining wall. Contractor quotes were \$90,000 and up, and would have required occupying adjacent homeowners' yards for days with equipment and debris.

**SOLUTION** / EnviroWaste Services Group's Atlanta branch installed an 8-inch-by-8-foot trenchless point repair, manufactured by **Infrastructure Repair Systems**. The repair was accomplished in a single, partial day from above the manholes with only foot traffic through homeowners' properties. No bypassing of the sewer line or stream was required. EnviroWaste's installation of the repair kit not only sealed the pipe from infiltration, but also created new structural capacity for the existing pipe.

**RESULT** / By utilizing the kit, EnviroWaste Services Group was able to repair the culvert for less than a tenth of the cost of dig-and-replace methods. The infiltration was eliminated and the county avoided potential sanitary sewer overflows with virtually no stress for surrounding homeowners. 727-327-4216; [www.irsnet.net](http://www.irsnet.net) **c**

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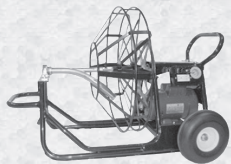
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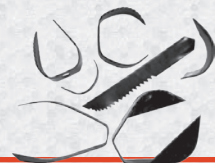


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## PRODUCT SPOTLIGHT

### FLEXIBLE-SHAFT TECHNOLOGY KEY TO DRAIN CLEANER'S PERFORMANCE

By Tim Dobbins

Drain cleaning has seen leaps and bounds of technological advancements in cable machines, water jets, inspections cameras and now flexible-shaft equipment. The introduction of flexible-shaft technology has opened a lot of doors for contractors utilizing it in the field.

"Among a number of things, there are two key advantages of flexible-shaft technology. The cable spins roughly 10 times faster than drum machines and four times faster than sectional machines. The higher speed does a better job cleaning the line," says Marty Silverman, vice president of marketing for General Pipe Cleaners. "It's also safer. The rod is inside a sheath protecting users; there is no spinning drum."

Since General Pipe Cleaners understands the value flexible-shaft technology offers, the company developed the Flexi-Rooter, a machine built with an integral variable-speed motor producing speeds up to 2,200 rpm and a shaft material capable of cutting roots in a 4-inch line and flexible enough to navigate a 2-inch line.

"We did testing on a lot of different cables because if you don't get a cable strong enough it won't hold up, and if it's too stiff it won't go around bends in the lines," Silverman says. "There was a lot of research and development and a lot of field testing until we got the right combination of components."

The covered spinning shaft also allows a camera in the line at the same time to pinpoint blockages and easily review the effectiveness

of the equipment to make sure the job gets done. The Flexi-Rooter also comes with a foot pedal so both hands can be free to safely guide the rod through the line.

"General's unique ClogChopper cutting tools are featured at the business end of both the stainless steel and carbide chain cutters as well," Silverman says. "They rip through stoppages with six self-sharpening blades that dig into debris and root masses."

All Flexi-Rooter machines are built on a metal frame for durability and include 10-inch tires for easy maneuverability. The handles are designed to fold down when not in use to reduce the overall size when storing it in a work vehicle. "We tried to think of everything a contractor would need in the field," Silverman says. "Our rods are fully repairable as well. As durable as our equipment is, we are ready if things wear out. If you run into a problem, you want to be able to fix it on the spot and, with this, we can do that." 800-245-6200; [www.drainbrain.com](http://www.drainbrain.com)



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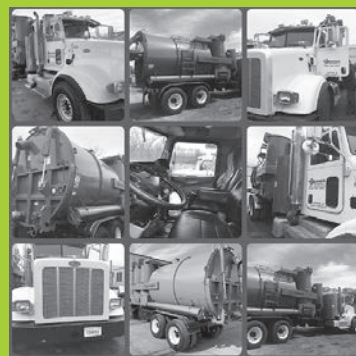
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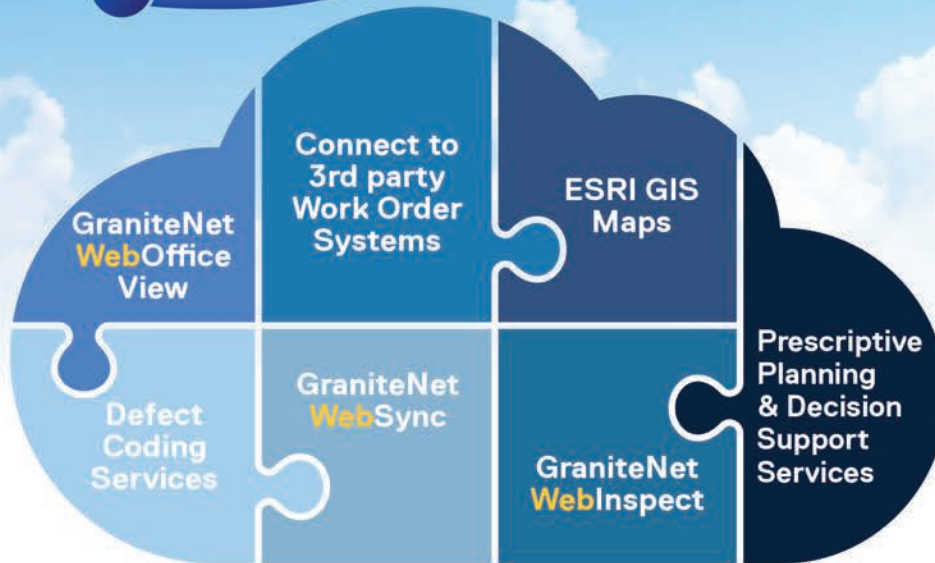
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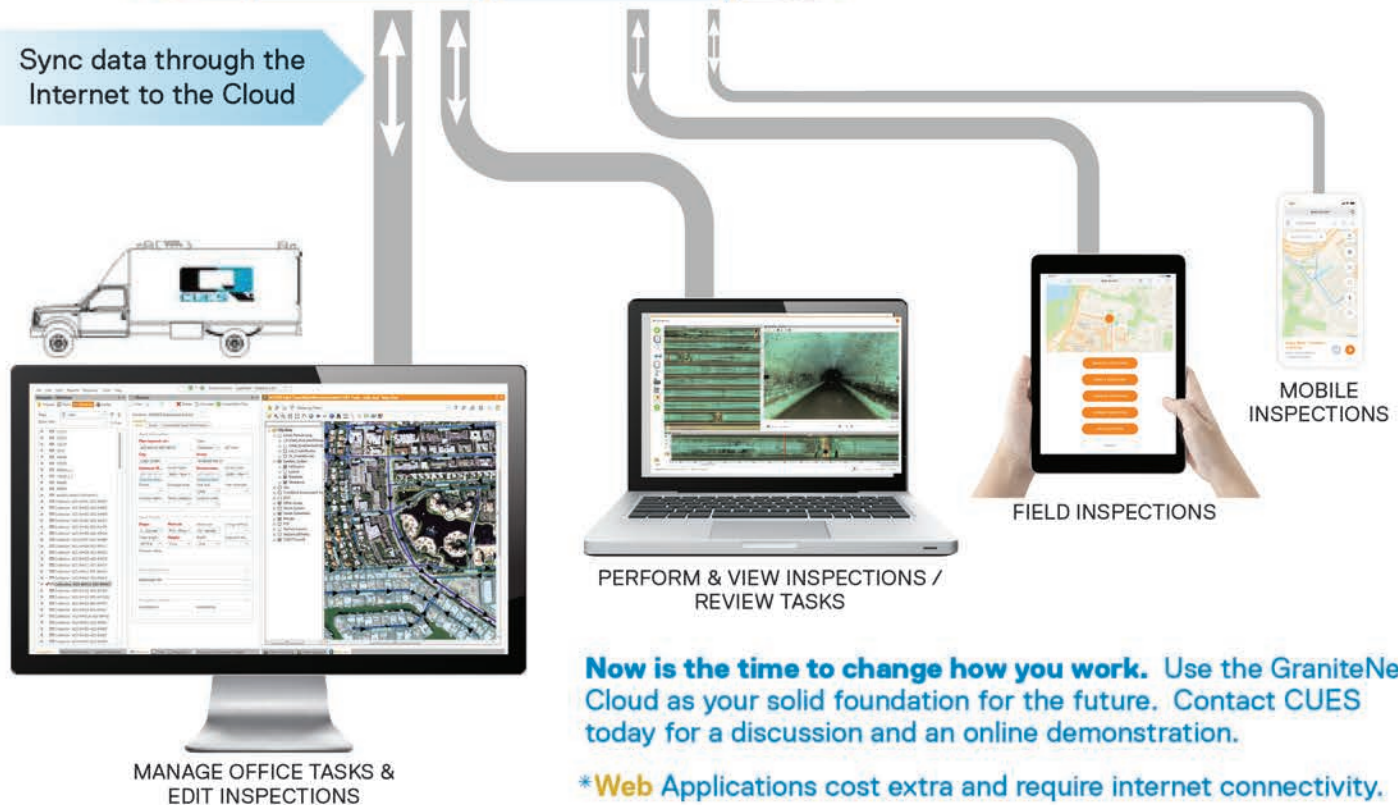
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