



MIDWEST JOURNAL OF

TRENCHLESS TECHNOLOGY 2023

OFFICIAL PUBLICATION OF THE MIDWEST SOCIETY FOR TRENCHLESS TECHNOLOGY

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MSTT Executive Director

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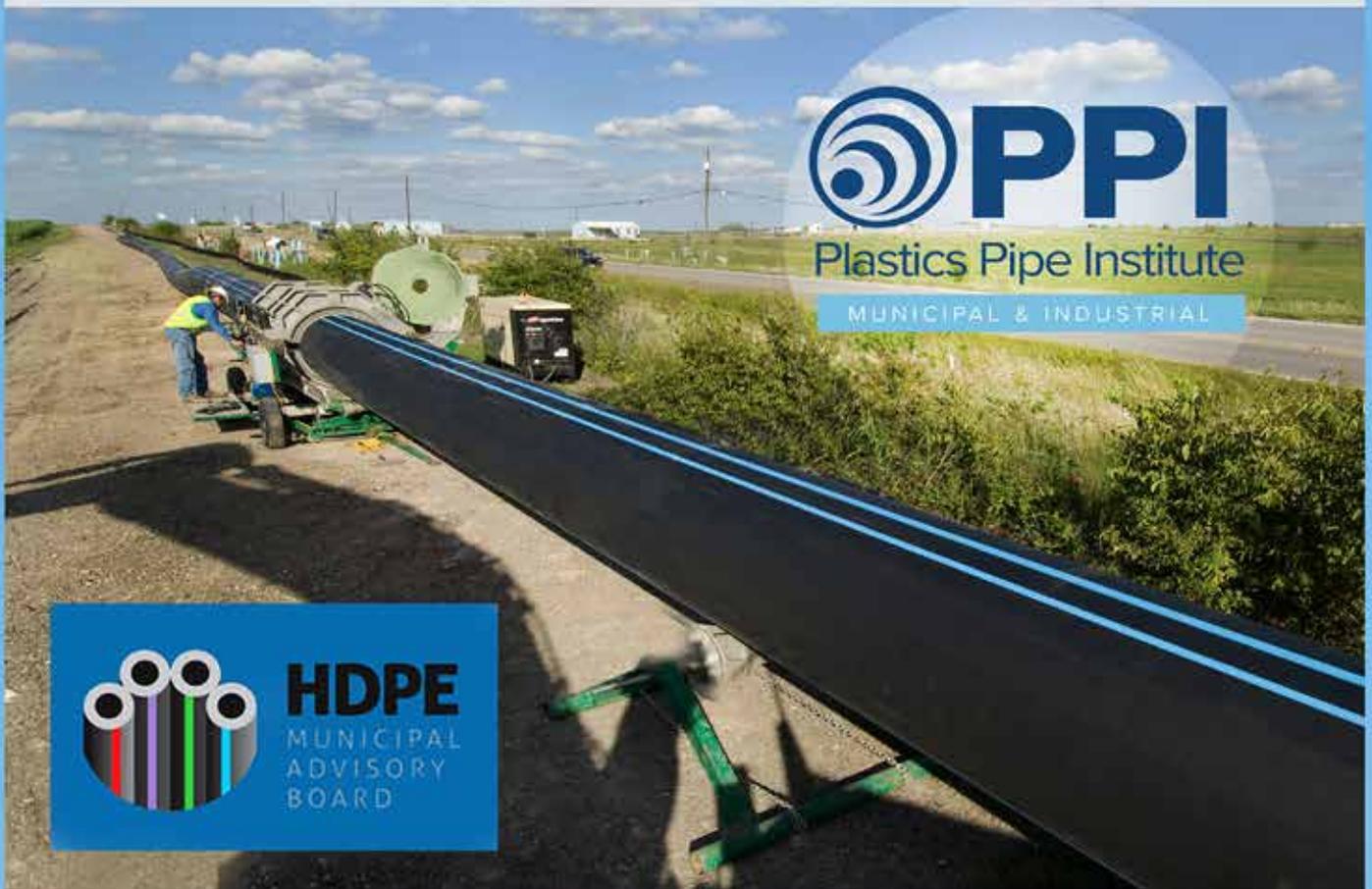
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CONTENTS



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Features:

12 Innovative Reline Solutions for Infrastructure Rehabilitation

Many bridge and culvert structures require substantial repairs or complete replacement. Challenges in funding and the inevitable disruptions to public traffic during closures often render complete overhauls impractical. However, innovative solutions exist that can enhance structural capacity, extend service life, and minimize public inconvenience for these vital structures.

16 Continuing Tradition with New Approaches

Each soil condition presents its own set of challenges. For a contractor to be successful in the trenchless industry they have to be able to get through the ground and do it with competitive pricing that wins the job but doesn't lose money. It's a fine line all about mitigating risks and balancing costs. Details on Down Hole Horizontal Hammer Boring, a new addition to the rock boring toolbox of Minnesota-based Minger Construction Co. Inc.

20 Sturgeon Bay Submarine Cable Replacement Project

Three-year project to replace a half-mile, 69,000-volt submarine transmission line under the Sturgeon Bay Ship Channel in Wisconsin encountered multiple challenges including a compound curve and extremely hard rock. Additionally, the pipe bundle string of HDPE conduits had to be buried under a major intersection instead of being set out above grade on rollers. Ultimately these challenges were overcome with early planning, precise coordination and exemplary execution by the crews.

24 Protecting Infrastructure Inside & Out

Along with a historic past comes an aging sewer conveyance system. Having played a key role in American history, for the past 20 years, Independence Missouri has been addressing inflow and infiltration (I&I) and structural integrity concerns in its aging inventory of brick and block-built manholes. A solution was found with a polyurea rehabilitation technology that bonds extremely well and provides structural enhancement to the existing structure.

Also:

- 10 NASTT 2024 NO-DIG SHOW PREVIEW
- 28 Sliplining Rehabilitates Large Force Main in Minnetonka
- 30 Compression Fit HDPE Pipe - Pipeline Replacement
- 34 Akkerman Revolutionizes Operator Training
- 36 Promoting Trenchless Technology in the Midwest
- 38 2024 Global Buried Asset Management Congress

Departments:

Message from the MSTT President.....	4
Greetings from the MSTT Executive Director	5
Message from the NASTT Chair	6
MSTT Board Executive 2023-2024	7
MSTT 2023-2024 Board of Directors	9
Index to Advertisers.....	39



12



16



20



24



MESSAGE FROM THE PRESIDENT

Chris Schuler, MSTT President

Thanks to everyone for your support over the years. We are now celebrating the eleventh annual publication of *Midwest Journal of Trenchless Technology*. We could not do it without the continued support of the many companies and individuals that comprise the MSTT community.

About MSTT: Established in 1998, MSTT is one of the oldest and the largest of the twelve NASTT Regional Chapters. MSTT encompasses the nine states of Illinois, Indiana, Iowa, Kentucky, Michigan, Minnesota, Missouri, Ohio, and Wisconsin.

2023 Seminars: MSTT conducted one live, in person seminar in 2023. On September 20, 2023 MSTT hosted a highly successful seminar in Detroit MI showcasing the wide ranging trenchless technology projects undertaken by the Great Lakes Water Authority (GLWA). An earlier MSTT seminar scheduled for May 17 in Louisville KY was unfortunately postponed due to event conflicts.

MSTT has now hosted a total of 40 seminars since 2003 in 15 different cities across the Midwest Chapter's nine state area. These seminars have engaged over 2100 underground infrastructure professionals in total over this period, facilitating meaningful direct networking between industry and owner groups. We appreciate our presenters, sponsors, and exhibitors who make these events tremendous successes!

MSTT:

Advancing the science and practice of Trenchless Technology for the public benefit, to promote and conduct education, training, study and research in said science and practice for the public benefit.

2023 No-Dig Show:

The 2023 No-Dig Show was well attended in Portland, OR. We all are looking forward to the 2024 show in Providence, RI April 14-18th

Future of MSTT

As many of you know, we are losing a valuable asset in 2024. Leonard Ingram, our long-time executive director will be stepping down. Leonard has been a friend since the day I met him at a Southeast Regional seminar in the early 2000's. Leonard has successfully organized and conducted over 130 regional seminars for 3 different regional chapters over the past 22 plus years. He has been a great spokesperson for trenchless technology!

I want to personally thank Leonard for all he has done for MSTT, NASTT, and me over the years. I appreciate your friendship and guidance and wish you the very best!

With Leonard stepping away, we will be heavily reliant on NASTT's help as we move forward. My goal is to have a good plan for a couple of new

committees featuring dedicated board members to help guide us with future conferences, sponsorships, and scholarship opportunities moving forward.

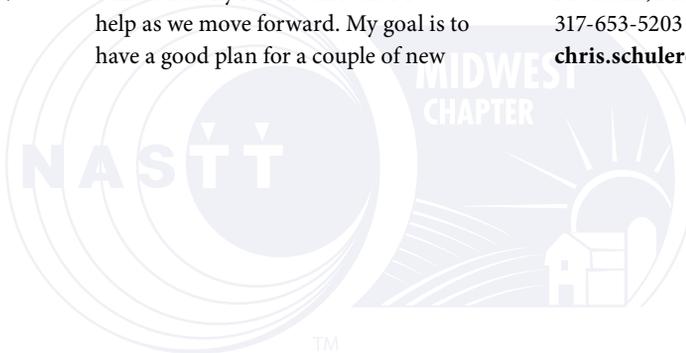
MSTT is your organization, and this is your publication, so please support us and let us hear what you think. To provide feedback, suggest a location for future events, place an ad, or submit an article for next year's journal; please contact me, or one of our directors. Your support and involvement is critical to our success and the success of the Industry as newer faces enter and greater challenges present themselves.

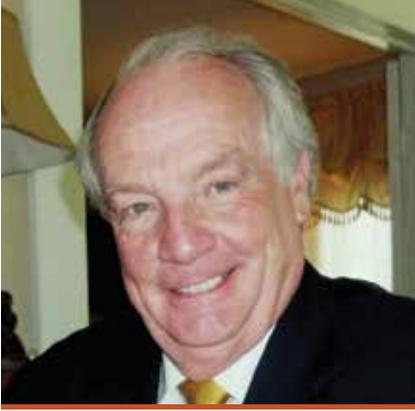
Sincerely,

Chris Schuler
President, MSTT
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chris.schuler@millerpipeline.com



MSTT SITE





GREETINGS FROM THE MSTT EXECUTIVE DIRECTOR

Leonard E. Ingram, Sr., PWAM, Executive Director, MSTT

WITH JOY AND SADNESS, I will be stepping down from my role as Executive Director of the Mid Atlantic, Midwest and Southeast Societies for Trenchless Technology. I will surely miss all the many friends that I have made in the last 22 years, but look forward to active semi-retirement. In early 2000, on our way to New Orleans to a trenchless trade show, my good friend Dr. Tom Iseley told me that we needed to organize an NASTT Southeast Chapter for Trenchless Technology (SESTT). Later in 2000, Dr. Iseley, Jerry Trevino and I founded and incorporated SESTT. In the Spring of 2001, we conducted the first SESTT Trenchless Technology seminar in Charleston SC. Shortly after that, I became the Executive Director of SESTT. Then in 2003, I was approached by Mr. Mark Bruce and others to take over the task of Executive Director for the existing Midwest Society for Trenchless Technology (MSTT), which I agreed to accept. Then in 2004, I was approached by my now good friend Richard Thomasson about helping him form the Mid Atlantic Society for Trenchless Technology (MASTT) and I agreed. Shortly thereafter, I became the Executive Director for MASTT. Since my beginning as the SESTT Executive Director, I have organized, conducted, managed and closed out 131 successful one and/or two-day seminars for the three NASTT Chapters over the 22 year period. It has been a joy!

My plans for the future are to spend more time with my loving wife, Suzy, my Son and Daughter, and my five wonderful “Auburn” Grandkids. I also plan to be more active with Dr. Iseley’s Buried Asset Management Institute – International (BAMI-I) and my own company, Cahaba Products, Inc. (Southern Flavor Seasonings).

As for MSTT recent activities, we conducted a very very successful “Trenchless Technology, SSES and Buried Asset Management” seminar in Detroit MI on September 20, 2023. Mr. Steve Matheny, P.E., Logan Clay Products, MSTT Board of Directors Member and ASCE Southeastern Michigan Branch President was my “hero” and helped me to organize and conduct the successful full day seminar. The Guest Presenter was Mr. Navid Mehram, P.E., Chief Operating Officer, Wastewater and Great Lakes Water Authority (GLWA), Detroit MI with the presentation “GLWA’s Trenchless Projects and Future Forecasts”. (see pgs 36-37)

In late 2022 Mr. Andrew Pattison, A to B Publishing, published the MSTT

It has been a joy!

Journal of Trenchless Technology 2022 and is publishing the MSTT Journal of Trenchless Technology 2023 in January of 2024. For more information about the MSTT Journals or to place an advertisement or article, please contact Andrew at marcomap@shaw.ca or at (204) 275-6946.

For now, “So Long”, to all my many good friends I have made in the Trenchless Technology industry and **“THANKS FOR YOUR SUPPORT!”**. In the next few months, I look forward to working with NASTT Regional Chapter and Events Coordinator Victoria Cox, MSTT Chairman Chris Schuler and NASTT Executive Director Matthew Izzard, to help successfully move MASTT, MSTT and SESTT forward under new management in any way that I can. As I have said many times, **“I DIG NO DIG!”**

Thanks For Your Support!

Leonard E. Ingram, Sr., PWAM
Executive Director, MASTT, MSTT & SESTT

**Thanks for
your support!**





MESSAGE FROM NASTT CHAIR

Matthew Wallin, PE, NASTT Chair

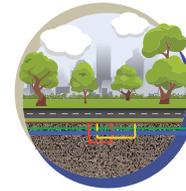
The 2024 No-Dig Show Heads East!

Hello Midwest Chapter Members & Associates! We are in the thick of planning for the 2024 No-Dig Show which meets in Providence, Rhode Island next April. The Rhode Island Convention Center offers a great location within the heavily populated northeast US corridor to meet and discuss everything new in the trenchless industry. Providence is accessible directly from the Rhode Islande TF Green airport (PVD) or by a 50-mile drive or train ride from Boston-Logan airport (BOS). The conference will feature the ever-popular panel discussion forums during the technical program on a variety of trenchless topics. We are also featuring new track topics including a focus on renewable energy. As an important part of the trenchless industry, I urge you to join us in Providence in April. Interact with 200 exhibitors, explore innovative products and services, participate in technical sessions for practical solutions, and network with colleagues throughout the week at the various events designed for creating meaningful connections. Our Show motto is *Green Above, Green Below* as it is important that our industry is a steward of our precious natural resources, so we welcome the opportunity to provide a forum for learning about the latest in innovative trenchless products and services that help us all accomplish that lofty goal.

"Our volunteers and committee members are what keep us moving in the right direction!"

In the coming months we have many additional events planned to bring the underground infrastructure community together. Our ever-popular NASTT Good Practices Courses are being held both virtually and in-person throughout the year. Visit www.nastt.org/training/events to find a course that fits your schedule.

If you have attended an NASTT event (national or regional) you probably left feeling excited and eager to get more involved. I ask that you consider getting engaged in one of the many NASTT committees that focus on a wide variety of topics. Some of our committees that are always looking for fresh ideas and new members are the Training and Publications Committee, the individual topic Good Practices Course Sub-Committees, the Educational Fund Auction Committee, the No-Dig Show and No-Dig North Planning



**GREEN ABOVE.
GREEN BELOW.**

Committees and Technical Program Committees. There are many opportunities for you to consider where your professional expertise can be put to use through networking with other motivated volunteers. With education as our goal and a strong drive to provide valuable, accessible learning tools to our community, we are proud of our continued growth as both an organization and as an industry. Our volunteers and committee members are what keep us moving in the right direction.

For more information on our organization, committees, and member benefits, visit our website at www.nastt.org and please feel free to contact us at info@nastt.org.

We look forward to seeing you at a regional or national conference or training event soon! And we hope you are planning to join us in Providence for the 2024 No-Dig Show April 14-18!

Matthew Wallin, PE

Matthew Wallin, PE
NASTT Chair

MSTT BOARD EXECUTIVE 2023-2024



Chris Schuler - *President*

Chris Schuler joined Miller Pipeline in 1984 as a laborer in Indianapolis, Indiana. Over the next few years he served the company in many capacities, assuming the role of equipment operator in 1989 and foreman the following year. In 1998 Chris stepped into the role of superintendent over Kansas City and

Indianapolis until 2005 when he was promoted to project manager. In 2009 he assumed his current role as general manager of the Municipal Services Division where he oversees Miller Pipeline's water/wastewater trenchless rehabilitation operations. Chris attended Indiana University from 1983-1986 focusing on Economics and Business. He graduated from the University of Missouri with a B.A. in Commercial Economics in 2001. Chris serves as the current Miller Pipeline Representative for the Indiana Chapter of NUCA. He is also a member of the NASTT Program Committee in addition to his role as President of the MSTT Board of Directors.



Ryan Poertner - *Vice President*

Ryan Poertner is a General Manager of Ace Pipe Cleaning, Inc. and lives in St. Louis, MO. Ryan's main focus is on the growing market involving trenchless rehabilitation. APC is a leader in the industry providing all types of rehabilitation solutions for municipalities in need. Ryan has spent

his 20+ years working in the water and wastewater rehabilitation fields. Ryan is a graduate of University of Missouri at Rolla with a degree in Engineering Management. Ryan is an active member of NASTT, NASSCO, WEF and local engineering organizations.



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MSTT BOARD EXECUTIVE 2023-2024



Robert Martin - Secretary

Robert Martin, P.E. has been with Jacobs Engineering Group since 2007 and has over 24 years of comprehensive underground engineering experience on projects including those for the rail transit, water supply, wastewater, and mining. Robert is the Past President of the ASCE Wisconsin Section Southeast

Branch and was a contributor of the ASCE/ UESI Manual and Reports on Engineering Practice No. 106, Horizontal Auger Boring Projects, Second Edition. Robert's experience includes construction feasibility assessments, design of soft ground and rock tunneling using various methods including; drill-and-blast, road header excavations, full-face tunnel boring machines in rock and soil, microtunneling, horizontal directional drilling (HDD) and other trenchless methods and has worked on projects all over the world. Robert is an active member of NASTT in addition to his role as Secretary of the MSTT Board.



Steve Matheny - Treasurer

Steve Matheny, PE has been a business consultant engineer for Logan Clay Products since 2016 where he brings over 30 years of technical experience and knowledge in the construction industry. He has been part of the Midwest Society of Trenchless Technology's (MSTT) board since 2017 where he is committed

to advancing both his own technical knowledge and the use of trenchless techniques. Steve has consulted and been involved with multiple trenchless projects (Pilot Tube Method) and has authored several papers and presentations for the North American Society for Trenchless Technology (NASTT). Steve has also written several articles for the MSTT Journal. He is currently consulting on numerous PTM projects throughout the Midwest and East Coast. He is the current president of the ASCE Southeastern Branch where he has been a member for over 30 years. His bachelor's and master's degrees in civil engineering are from Wayne State University and is professionally registered in the State of Michigan.



Jeff Boschert - Past President

Jeff Boschert, P.E., F. ASCE, is the President of the National Clay Pipe Institute (NCPI), a not-for-profit organization dedicated to research, education, and leadership in the vitrified clay pipe sanitary sewers industry for more than 100-years. Jeff joined NCPI from Missouri

DOT in 2004 to serve as the leader of the organization's trenchless initiatives. His initial research projects began almost immediately with CLSM bedding research.

Jeff has become a leading expert in the pilot tube method of guided boring. In 2012 he took on the added responsibility of leading NCPI and conducting educational outreach as the new president.

In addition to his work with NASTT, he represents the industry on multiple ASCE and ASTM committees. Jeff was one of the principal authors of the *ASCE/ Utility Engineering and Surveying Institute (UESI) Manual of Practice (MOP No. 133) on Pilot Tube and Other Guided Boring Methods*. He is serving on the ASCE/ UESI Pipelines Division Executive Committee (ExCom) as past Chairman. Jeff is the current ExCom liaison and past Chairman of the UESI Pipelines Division Technical Committee -Trenchless Installation of Pipelines (TIPs). He served as conference chairman of the UESI Pipelines 2022 Conference.

Under Jeff's leadership, NCPI has completed comprehensive updates of the *Vitrified Clay Pipe Engineering Manual*, the *Vitrified Clay Pipe Installation & Inspection Handbook*, and the *Analyzing CCTV Inspection of Vitrified Clay Pipe Handbook*. In 2020 NCPI introduced the *VCP Operations & Maintenance Handbook*, a first-of-its-kind, comprehensive manual for cleaning and maintaining a sanitary sewer collection system. Jeff holds a Bachelor of Science in Civil Engineering from Missouri University of Science and Technology (S&T).

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NASTT 2024 No-Dig Show Preview

Welcoming North America's Underground Infrastructure Community to the Populous Northeast!



“Be a part of the excitement as a presenter, sponsor and exhibitor!”

The North American Society for Trenchless Technology looks forward to hosting the 2024 No-Dig Show in Providence, Rhode Island April 14-18. Hosting North America's premier trenchless educational and networking event in the Northeast for the first time, presents a golden opportunity for the Northeast Trenchless community to showcase the progress it has made in utilizing trenchless applications as the preferred method for underground infrastructure construction in the Northeast.



Within an easy day's drive from most cities in the populous northeast – Providence is just a few hours' drive from Portland ME, Philadelphia, PA, NY, NJ, VT and CT – the 2024 NASTT No-Dig Show promises to draw significant attention from top infrastructure decision-makers across the Northeast including municipal authorities, utilities, engineers, contractors, suppliers and policy-makers.

The 2024 NASTT No-Dig Show motto “Green Above, Green Below” exemplifies the trenchless industry's position as an important steward of our environment and natural resources, utilizing approaches that have significant environmental and social benefits. Trenchless Technology is at the forefront of ongoing efforts to reduce GHG emissions.

As our planning kicks into high gear, check the website www.nodigshow.com for updates and further information. The excitement and anticipation is building – be a part of the excitement as a presenter, sponsor and exhibitor!

Babs Marquis CCM

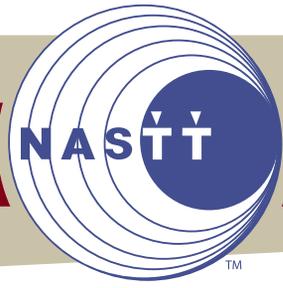
Delve Underground
2024 No-Dig Show Planning Committee Chair
Secretary, NASTT Board of Directors
Past Chair, NASTT-NE Chapter



The NASTT No-Dig Show is being hosted in the Northeast for the first time



Providence is an easy day's drive from most cities in the Northeast



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2024

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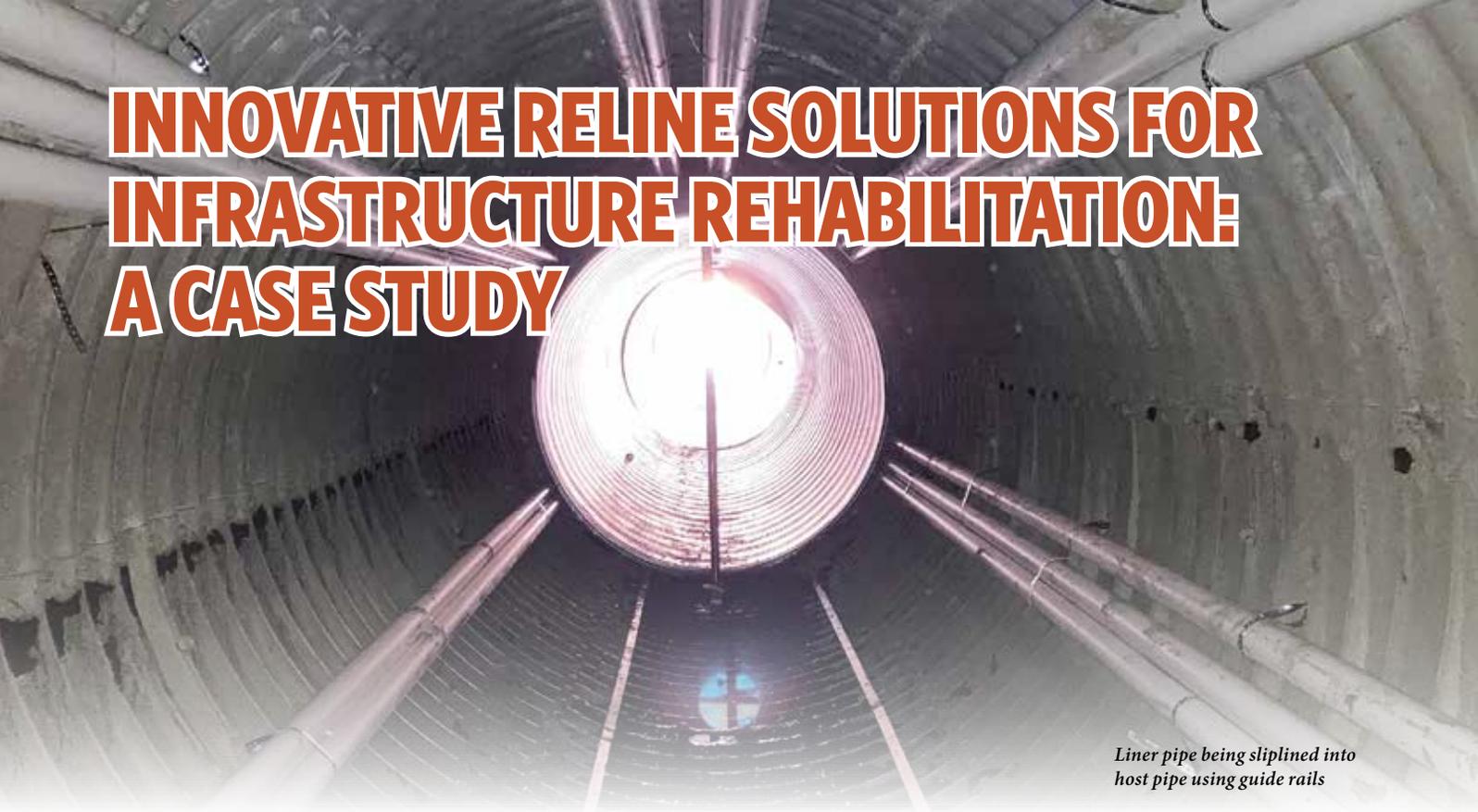


2024



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INNOVATIVE RELINE SOLUTIONS FOR INFRASTRUCTURE REHABILITATION: A CASE STUDY



Liner pipe being sliplined into host pipe using guide rails

By: J.D. Seidel, Contech Engineered Solutions

The deteriorating condition of the nation's infrastructure demands urgent attention, particularly concerning the state of bridge and culvert structures. With many structures requiring substantial repairs or replacements, challenges in funding and the inevitable disruptions to public traffic during closures often render complete overhauls impractical. However, innovative solutions exist that can enhance structural capacity, extend service life, and minimize public inconvenience for these vital infrastructural elements.

In a notable case, the South Dakota Department of Transportation (SDDOT) encountered a pressing issue with a twin-barrel structure situated under SD 44 and SD 50 within the Black Hills National Forest. The twin 360-foot runs of 96-inch diameter MULTI-PLATE® steel structural plates had surpassed their intended service life, prompting the need for repair or replacement. The significant depth of cover—exceeding 35 feet—made excavating and replacing the twin-barrel MULTI-PLATE® structure an impractical



Original Twin Barrel Structure

"Shop-installed grout ports were pivotal, enhancing the grouting process significantly."



DuroMaxx® SRPE Liner Pipe being pushed into place

endeavor, considering its substantial impact on traffic flow.

In light of these challenges, the SDDOT explored alternative options, recognizing the potential of a reline solution as a more feasible alternative to the costly and time-consuming replacement. The 96-inch diameter host pipe presented a critical requirement: finding a reline pipe diameter that maximized capacity without impeding anticipated flow and volume. Additionally, significant deflections within the host pipe posed potential obstacles for passing a liner pipe through the culvert.

The SDDOT reached out to Contech® Engineered Solutions, leveraging their extensive experience spanning more than a century in rehabilitating storm and sanitary sewers, culverts, and bridges. After thorough assessments, the SDDOT identified an 84-inch diameter DuroMaxx® SRPE Liner Pipe from Contech as the optimal solution. DuroMaxx, designed as a structural reline pipe, possessed the capability to withstand substantial cover depths. Its design, featuring soil-tight, plain end joints, maintained an optimized inner diameter to snugly fit within the host pipe using internal expanding bands.

Furthermore, DuroMaxx's incorporation of shop-installed grout ports proved pivotal, enhancing the grouting process significantly. The project necessitated multiple-stage grouting, a technique typically essential for pipes exceeding 48-inch diameters, which effectively reduced the buoyant force

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Use of “guide rails” ensures proper placement of liner pipe into the existing host pipe



Using internal expanding bands allowed for optimized OD/ID of the liner pipe to meet hydraulic requirements

of the fluid grout. Contech Engineered Solutions provided the calculations for lifts and detailed jacking locations, crucial to stabilizing the pipe during grouting to counteract buoyancy.

The project encountered unique challenges, particularly the site’s location at the bottom of a deep valley, complicating access to the host pipe ends. The subcontractor, Hydro-Klean, contended with wet and muddy conditions within the 360-foot run for each twin barrel. Despite the complexities, the incorporation of external grout ports proved instrumental

in mitigating these challenges during the grouting process.

Ultimately, the project was completed successfully, earning acclaim from the SDDOT for delivering a fully structural solution projected to extend the structure’s service life by an additional 75+ years. The selection of DuroMaxx® SRPE reliner solution not only met these expectations but also provided a cost-effective and time-saving measure, showcasing its potential as a viable solution for similar infrastructural challenges. †

ABOUT THE AUTHOR:



J.D. Seidel was born and raised in North Dakota. With a family-owned residential construction company, J.D. has been involved in the residential construction industry his entire

life. For nearly ten years, he has been in the commercial construction side as a sales engineer at Contech Engineered Solutions. J.D. has a mechanical engineering degree from North Dakota State University. When not at work, J.D. is an avid outdoorsman.

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CONTINUING TRADITION WITH NEW APPROACHES

Minger Construction expands their trenchless capabilities with GEONEX™

By: Richard Revolinsky, Geonex Inc, (GEO)

Minger Construction company doubled down on their commitment to be the Go-To regional contractor for complex trenchless works by investing in Down Hole Horizontal Hammer Boring (HHB). Already a staple in the Midwest for their capabilities and commitment to growth in underground utility construction, in 2022 Minger Construction began discussions with GEONEX, the Finnish manufacturer of complete Down Hole HHB systems. The goal was to expand their abilities and improve efficiency for the rocky ground they encounter.

Jordan MN based Minger Construction was started by Patrick Minger in 1984 with a backhoe, pick-up truck, and his wife Karen. Today, Minger construction has grown to over 100 family members and is led by Patrick's son Luke Minger. Bonded by their shared values, the Minger team is not blood relatives, but rather made up of a team that Luke describes as a family. "Family is very important at Minger Construction. We want people to feel like they are part of the team and not just a number."

Minger operates primarily in central Minnesota. However, as they have grown so too has their geographic foot print which has brought them as far West as Utah and South as Iowa. Expansion into new territories allowed Minger the opportunity grow, continuously expanding their trenchless capabilities as well. Utilizing a variety of trenchless construction techniques which includes Tunnel Boring Machines, Guided Boring Equipment, Auger Boring, Directional



Minger Construction Crews lower the first piece of Casing to be installed with their new GEONEX HZR1200 Boring equipment in Scandia MN

Drilling, Pipe Ramming, has allowed Minger to adapt and be successful throughout their footprint and in a variety of ground conditions. Minger construction has capabilities from 16 through 180 inches diameter, making them well equipped to handle most any project.

"The trenchless industry is ever changing. To maintain a competitive edge, we have to stay up to date with new technologies, adding different options and methods into our tool box. Being proficient with each method and having

them at our fingertips allows us to complete challenging projects. This allows us to keep moving forward and onto the next project for our owners and clients," explained Luke.

It's all about mitigating risk and balancing costs. To be successful in the trenchless industry you have to be able to get through the ground and do it with pricing that can win you the job but not lose money. Each soil condition presents its own set of challenges. Most rock boring occurs at a snail's pace compared to other soils. Not only slower, but in most rock

installations, contractors are left with little options other than to increase diameter to permit manned entry. Rock wears out cutting heads, sloped bedrock can push a contractor off course, and cobbles can jam up augers.

Down Hole HHB utilizes a pneumatic hammer located close to the face. A bit is accelerated which fragments large rock into smaller particles with linear action. Compressed air is released at the face blowing cuttings back to rotating auger. With each cycle of the hammer, the casing advances as the ground along the bore path is broken up, allowing for advancement rates in excess of 10 feet per hour even through very hard rock.

Down Hole HHB is not without its own limitations. The method relies on the integrity of the down-hole components to withstand the hammer forces. Without lubrication, skin friction becomes a limiting factor on installation length. The components are not cheap either. However, when compared to the alternatives of increasing diameter,

“Family is very important at Minger Construction. We want people to feel like they are part of the team and not just a number.”

- Luke Minger, President, Minger Construction Co Inc.



Though Down Hole HHB is a non-guided method, accuracy was achieved with help from GEONEX technicians onsite

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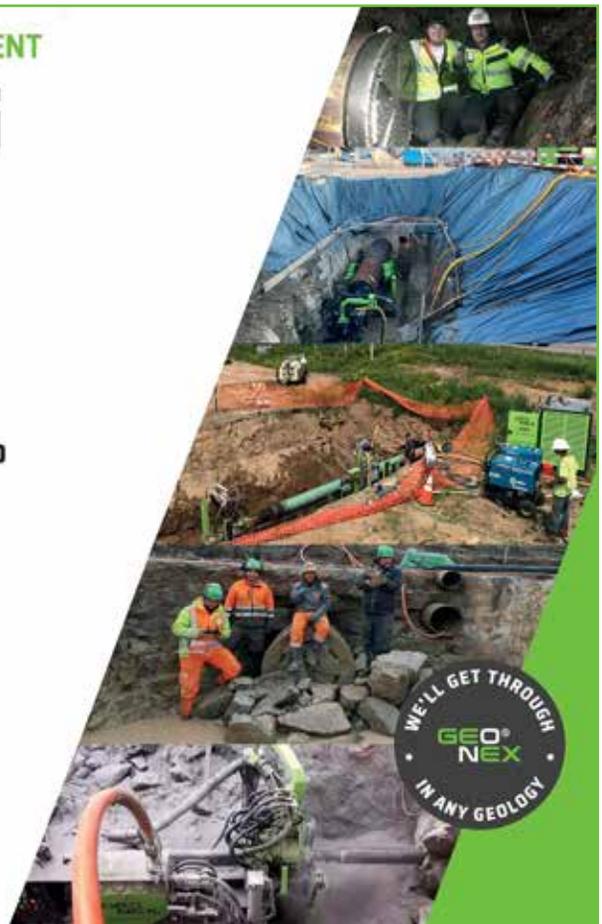
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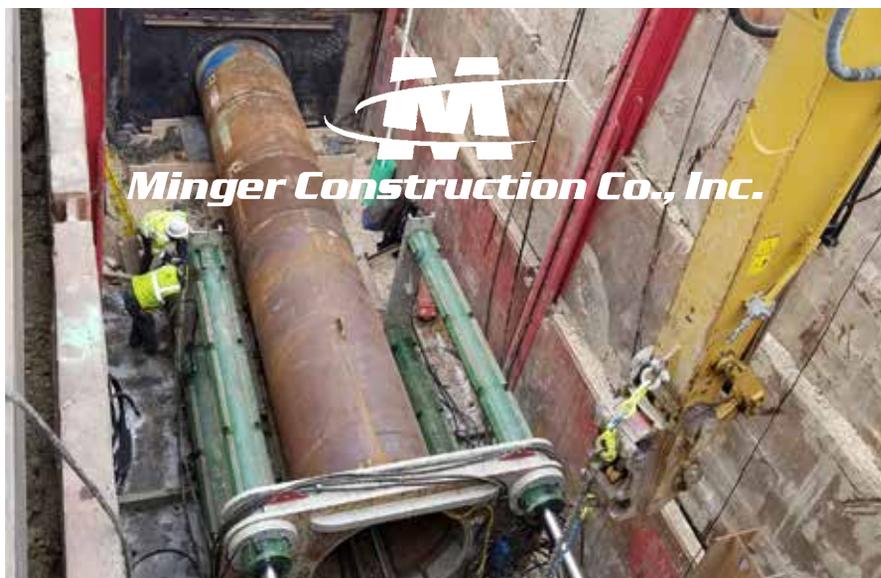
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The casing advances with each cycle of the hammer



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increased risk and slow installation rates, the HHB method is ideal for crossings up to the 330 foot range and has been successfully deployed for longer installations.

“Rock has always been a challenge and the traditional approaches typically required increasing diameter and a very big risk factor. We had the opportunity to see the GEONEX Down Hole HHB boring systems in action a few years back when we hired EBI drilling services of Duluth MN, to use their GEONEX equipment on a few small diameter bores for us. We were really saw the value in the technology and began evaluating the benefit it could have provided on a few previous projects where cobbles and boulders kept us on site longer than we wanted to be.”

In January 2023, looking ahead at a few potentially troublesome projects Minger Construction took the next step forward in their growth with purchasing a GEONEX HZ1200 boring machine and the newly re-designed PP205 Hydraulic Powerpack. The HZ1200 bore machine is capable of diameters up to 48 inches and with the same cutting head, can be successfully utilized in a variety of ground conditions giving Minger the ability to perform installations through varying rock, clay, and sand along the same bore path. Luke explains a bit of their decision making process, “We had a few projects coming up that we knew were going to be tough due to the soils reports. We evaluated installation rates of some previous projects and compared it to what the Down Hole HHB method could offer. Having witnessed the GEONEX equipment in action we were convinced our investment would pay dividends relatively quickly based on the time savings and risk mitigation by going with the GEONEX system.”

In June 2023 Minger took delivery of their new equipment, including components necessary to complete their first planned project using the Down Hole HHB method. MNDOT Project 8210-115 TH 95 called for the installation of 240 feet for a new 36-inch diameter steel culvert under State Highway 95 in Scandia MN. Initial site investigation revealed boulders and cobbles on the downstream side of the installation. Excavation of

A FAMILY'S PASSION FOR TRENCHLESS:



Intermittent rock fragments appeared in the spoils



The new GEONEX system helped complete the installation in under two weeks

the jacking pit on the upstream side of the culvert however revealed only small amounts of rock. The differing conditions from one end of the bore to the other became more evident during installation. The first 60 feet saw transition from a sandy clay loam to thick heavy brown clay. The clay went on for another 100 feet with intermittent rock fragments appearing in the spoils pile.

As Luke describes, “We were getting about 20 feet an hour, then stopping to weld. It was going pretty fast but from what we could tell we weren’t hitting any rock yet. At 180 feet in, we pulled the auger, hammer, and pilot bit to check elevation and see what the soils were at the face. We found a rock that was about 16 or 18 inches long just waiting to be broken up. We moved a little dirt and revealed even more rock.”

Minger bid the project under the conventional design which called for pipe jacking with an anticipated 6 to 8 week duration. Performing value engineering with the DOT, Minger was successfully able to receive approval for the Down Hole HHB method with their new GEONEX system, which was utilized to complete the installation in under 2 weeks. Although the Down Hole HHB approach is a non-

guided method, accuracy was achieved by assistance from GEONEX technicians during the work, resulting in a nearly perfect downstream invert and location.

“At Minger Construction we want to continue to grow by keeping up with new technologies and different equipment options that are out there. We feel the GEONEX system will allow us to enter some new markets and handle ground conditions that we would have taken a hard pass on before because we were scared to fail. I am excited at the opportunities that are out there and look forward to giving owners and clients another option to successfully complete trenchless pipe installation in challenging soils!” 🛠️

ABOUT THE AUTHOR:



Richard Revolinsky is the North American Operations Manager for Geonex Inc. He has served the trenchless industry for the past 10 years in various roles as Project

Manager for Auger Boring and HDD projects and material sales. He is committed to furthering the Trenchless Construction industry with viable innovative solutions.



The trenchless industry is ever changing and Minger Construction continues to grow by keeping up with new technologies. Our story is one of a family's passion for the construction industry and the ability to instill this same passion into a growing number of construction professionals. Over our 40 years in the industry, we have developed a wide range of capabilities in underground utility construction, and are recognized for our ability to perform complex underground utility construction projects.



We have more than 100 team members and an extensive list of equipment including the most recent GPS technology and tunneling equipment innovations. Minger Construction has the ability to install piping sizes from 4 inches to 16 feet in diameter using trenchless technology. With our vast range of trenchless equipment (Auger Boring, TBM, Pilot Tube Micro tunneling, Rock Boring, DTH Boring, Pipe Ramming and Hand Mining) we have the tools to complete the job successfully even in the toughest conditions. The variety of equipment allows us to install a variety of pipe materials (Steel, Concrete, Fiberglass and Clay).

No project is too large or complex, and we have the techniques in place to tackle the most complex projects. We offer innovative solutions for construction projects, serving municipalities, government agencies and private organizations. With a focus on safety, quality, and efficiency, partnering with Minger Construction ensures on-time, on-budget, and high-quality results.

STURGEON BAY SUBMARINE CABLE REPLACEMENT PROJECT SPOTLIGHT

By: Nate Eastway, Gabe's Construction Company

Gabe's Construction Co. of Sheboygan, Wis., was recently involved in a three-year project to replace a half-mile, 69,000-volt submarine transmission line under the Sturgeon Bay Ship Channel that connects Wisconsin's lower and upper Door County. The new transmission line replaces a single circuit with three cables that were installed under the channel in the early 1980s and initially anchored to an active water main.

Founded in 1942 to install drain tiles in local farm fields, Gabe's has since expanded over the decades to include the construction of gas distribution; water, sewer, oil and gas pipelines; fiber optic cable; a multitude of wireless services; and, for the past two decades, installing underground high-voltage infrastructure. This work includes large conduit ductbanks formed with thermal dissipating concrete and backfill, large precast concrete splicing vaults, fiberglass rebar reinforced thrust blocks, and Horizontal Directional Drill of multiple conduits.

For the Sturgeon Bay Submarine Cable Replacement Project, which was completed in June 2021, Gabe's was hired by Southwire Company to install all new below grade infrastructure, including an 1,886 Linear Foot HDD of (4)-8-inch & (4)-4-inch High Density Polyethylene (HDPE) conduits. Gabe's performed the HDD drill and pull, as well as fusing the HDPE. Gabe's finished with all the open trench work that tied the HDD to the utility's substation trifurcation structure and a new overhead transition pole. Finally, Gabe's turned the completed and proofed infrastructure over to another contractor for cable installation.

This project encountered multiple challenges, that were overcome with



All components, like the pull head are part are selected based on key project factors to optimize project efficiency

early planning, precise coordination, and exemplary execution by the crews:

- **Compound Curve:** Due to tight alignment and work area constraints, the HDD path included a compound curve of 50 percent of the HDD length; 3,600-foot radius in the horizontal and a tight 2,000-foot radius in the vertical. The path still traversed below an active electrical substation and a boat maintenance building.
- **Rock up to 49 ksi:** In conjunction with the compound curve, the extremely hard rock required a very precise pilot setup as fractions of a degree steering errors could result in major delays to scrub on the hole. Gabe's used InRock Drilling Systems to furnish Steering Services and all Rock Tooling. Gabe's ran InRock's Gyroscopic Steering System, their ABIA (At Bit Inclination Assembly, which gives inclination visibility directly behind the bit), and

Annulus Pressure Monitory system. It took a couple attempts to find the right bit to get the steer needed. Gabe's started with a 12.25-inch and ultimately landed on a much smaller 10.89-inch bit. Final tooling consisted of 10.89-inch HDX Bit with 7-inch mud motor, 24-inch XTR-W Rock Reamer ((5) 16-inch XTR-W SB TCI Segments with hard formation inserts: IADC 6-3-7), 36-inch MXR/HDX Rock Reamer ((5)-26-inch HDX Bit Segments)

- **Traffic:** The pipe bundle string out was down the middle of a heavily trafficked local road, which is one of two roads into downtown Sturgeon Bay. Gabe's worked closely with local city representatives and Wisconsin Department of Transportation to close the road to through traffic. Gabe's also coordinated closures with local waste management, school bus services,

"Multiple challenges were overcome with early planning, precise coordination, and exemplary execution by the crews."

and heavy industrial facilities, as well as dozens of homes, driveways, multi-family housing units. The main concern was a busy intersection that accessed the heavy industrial area. As full-size semi's and trailers required continuous access, and each of the 8-inch conduits required the internal fuse bead to be removed via a 50-foot long debanding tool (to limit pullforces, potential for damage, and eliminate pressure points on the 69-kV cable), Gabe's opted to bury the HDPE conduits under this intersection, instead of keeping them above grade on rollers. Gabe's crews excavated and shored 60-foot long and 3-foot

wide one-inch steel road plates. Gabe's then closely coordinated the pullback activities as the bundle was raised up onto rollers, which required a major WDOT bridge and intersection closure for two days.

- **Environmental:** Portions of the work were in a Wisconsin Department of Natural Resources flood zone, so care and preparations were needed to keep work from impacting that area. Lake Michigan, and therefore the shipping canal, were at historic high water levels in late 2020 when the work was conducted. The south side rig work area was only 18 inches above the groundwater level. At the end of each



Extremely hard rock required hard formation tooling

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Pipe bundle string was set out down the middle of a heavily trafficked local road



Buoyancy modification was not used during pullback

shift, Gabe's had to put heavy weight mud in the exit pit to hold back the infiltration of groundwater. To handle the groundwater during subsequent open excavation work up to 12 feet deep, Gabe's hired Kelley Dewatering to install nine 30-foot deep dewatering wells and eight 13-foot deep dewatering wells. The water discharge was then treated before being discharged into the sewer system or the canal. There was also a layer of potential methane along the HDD path. Precautions, such as continuous methane monitoring above the pits, were employed. Finally, and thankfully, for being 45 minutes



Pullback was completed with no damage to any conduits

north of Green Bay, the weather did not drop below zero degrees until after the HDD was complete. The open excavation crews had to deal with the freezing temperature (including using ground thawing systems), but not the HDD crew.

- **Historical Granary:** The Sturgeon Bay Historical Society Foundation was storing a wood granary, built in 1901, onsite. They were concerned about the impact of potential ground vibration on the granary. Gabe's installed vibration monitoring equipment during all HDD activities, comparing the vibrations daily to data obtained prior to HDD activities. The distance from HDD path to the monitoring equipment was less than 100 feet and no increase of vibration was observed due to HDD activities.
- **Pull-head and Pullback:** Gabe's modified its standard 24-inch pull-head to taper it out to a 27-inch diameter pull-plate that all eight conduits were attached to. This resulted in a heavy and long pull-head. When the pull-head was passing through the tightest of the compound curve sections (a 600-foot compound

radius), crews could feel the pull-head catching downhole. The concern was it could potentially get jammed on the sides of the rock hole. There were a few tight spots, but ultimately the pullback was completed with no damage to any conduits. Buoyancy modification was not used. A thinner, shorter pull-head will be used on future projects with tight radii.

All in all, the project—including three and a half months of HDD, four and a half months for open excavation work following 18 months of construction pre-planning—was completed on time and on budget. Most importantly, every employee from each company went home safe to their loved ones. 🙏

ABOUT THE AUTHOR:



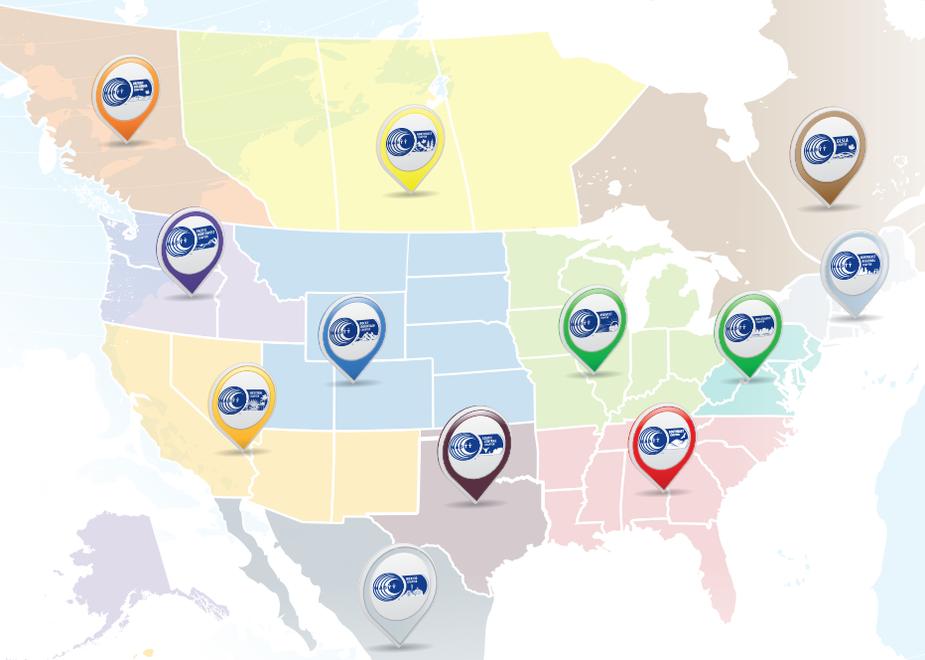
Nate Eastway started with Gabe's in 2011 as the Engineering & Estimating Manager and Contract Administrator. After 7 years as VP of HDD & Specially Projects he was named COO in July 2023 as Gabe's added their Telecom and Wireless Divisions to his responsibilities. He continues to be the responsible charge Professional Engineer for Gabe's and their sister company, Stratis, Inc.



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PROTECTING INFRASTRUCTURE INSIDE & OUT

By: Mike Hoffmaster, OBIC LLC

Independence, Missouri, located just outside of Kansas City, has played a pivotal role in American history. Not only is it the town where Harry S. Truman, the 33rd President of the United States, grew up and the home to the Truman Library and Museum; but it was the starting point for westward expansion during the 19th century as the terminus of the Sante Fe, Oregon and California Trails. Today, it is the home of approximately 123,000 residents.

Along with its historic past comes an aging sewer conveyance system. Many of the sanitary sewer manhole in Independence, MO are either brick or block-built manholes. Independence Missouri Municipal Services (Independence) is the city's agency responsible for "proactively and reactively maintaining the city infrastructure items and functions, such as streets, sanitary sewer, stormwater mitigation, water distribution, drinking water treatment, and wastewater treatment." With 14,700 manholes total in their system, they have their work cut out for them. Dealing with inflow and infiltration (I&I) reduction as well as addressing structural integrity concerns of the manholes are not new to them. Independence has been actively working to address the problems related to both for the past 20 years.

Generally, when discussions about manhole rehabilitation arise it is dealing with the interior of the manhole, since most are fully buried structures the exterior condition can't be evaluated. However, when manholes are in a flood plain, they normally extend out of the ground, so the casting is above a predetermined flood plain level. Independence had manholes that fall into both categories. Not only are they



The OBIC Armor system reinforced and secured the structure of the exposed manholes

confronted with I&I issues, but they also had to preserve and protect the exterior of these failing manholes. In the past the exterior of the manholes was parged with cementitious material, it was deteriorating, and a new solution had to be found. The OBIC material bonds extremely well and provides structural enhancement to the existing structure.

For these exposed manholes, it was decided to coat them with the OBIC Armor system to reinforce the structure and to secure the bricks and block in place. Polyurea bonds very well to surfaces like concrete, brick, and block. You can find videos validating this fact online by searching "polyurea bonding to block videos".

Over the years they implemented other rehabilitation technologies including cementitious products and epoxies. These worked well for a few years but over time with the freeze/thaw weather conditions the region experiences, the products



Material provides a monolithic lining system

cracked. After seeing a demonstration of the OBIC Armor process installed by Midwest Infrastructure Coatings, a



Unique warranty covers both product and installation

certified installer for OBIC products, their decision was made on what product they wanted to use for their manhole rehabilitation moving forward. One of the many advantages of OBIC 1000 (polyurea)

is the flexibility and elongation properties of the material. This allows for movement without fracturing the coating system, making it ideal for the chimney section of the manhole as well.

To date, they have rehabilitated approximately 100 manholes with the OBIC Armor system. This does not include all the manholes where they have used just the OBIC 1000 in lieu of

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“If the US military relies on polyurea to keep our troops safe, by coating the underside of our military vehicles with it, then it should hold these bricks in place.”

- Mike Vavruska, Regional Director, Midwest Infrastructure Coatings



OBIC material bonds extremely well and provides structural enhancement to the existing structure

mechanical chimney seals to stop I&I in the adjustment section of the manhole below the frame and cover. According to Jeff Conway, Sanitary Sewer Collection Manager for Independence, MO Municipal Services, one of the benefits of working with Midwest Infrastructure Coatings is their “ability to mobilize to spray the chimney sections of manholes that don’t need complete rehabilitation as an effective means for stopping I&I.” It is very convenient, and a big cost savings compared to other alternatives of sealing up the chimney sections. The first group of manholes were focused in an area that they had identified with many I&I issues. Jeff shared they are continuing to allocate funds to continue this rehabilitation program with many more manholes to come.

What is OBIC Armor? OBIC Armor is a multi-layer lining system, consisting of

OBIC 1306 (6–8-pound closed cell foam) sandwiched between two layers of OBIC 1000 (polyurea). OBIC and the Certified Installers of the OBIC products, like Midwest Infrastructure Coatings, are so confident in the OBIC Armor system that it is backed by a 10-year warranty on both the installation and the product.

How does OBIC Armor work? First, the structure is prepped using high pressure water. Next, all leaks are stopped, and the manhole is dried. Then the application process (three steps) begins. The first step is applying the Adhesion Layer. This is the first coat of OBIC 1000 (polyurea). This material sets up very quickly, it is tack free in 20-30 seconds. This is followed by applying the surfacing layer, OBIC 1306 (closed cell foam). The last application layer is the Final Barrier layer. It is the topcoat of OBIC 1000. This layer is attached to the bottom portion of the

manhole casting to provide a monolithic liner system. To finish off the installation process the current date is stamped into the liner to validate the beginning of the 10-year warranty. This warranty is unusual in that it covers both the product and installation.

When Mike Vavruska, Regional Director with Midwest Infrastructure Coatings, was asked about using polyurea coating for the exterior of the manhole to secure the blocks and brick in place, he responded “If the US military relies on polyurea to keep our troops safe, by coating the underside of our military vehicle with it, then it should hold these bricks in place.” His reference was to the bottom side of military vehicles which are coated with polyurea to safeguard troops from land mine explosions. Polyurea bonds so well to the metal that it minimizes shrapnel from the metal undercarriage shattering when driving over an explosive.

OBIC products are not just for manhole rehabilitation. They are used in wastewater treatment plants, pump stations, potable water, storm water and industrial applications. OBIC is an excellent choice for protecting, helping to extend the lifespan of critical infrastructure and reduce maintenance costs. †

ABOUT THE AUTHOR:



OBIC LLC can help you find a cost-effective, no-dig solution to all of

your municipal and industrial water, wastewater and stormwater needs. Visit us at www.obicproducts.com, or give us a call at 866-636-4854 to request information or schedule an OBIC product demonstration.



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SLIPLINING REHABILITATES LARGE FORCE MAIN IN MINNETONKA

Fully fused 18-inch PVC pipe installed inside deteriorating 24-inch force main

By: Jason Bordewyk, Underground Solutions

When a major lift station and force main within the City of Minnetonka was recommended for rehabilitation, the City considered numerous options to provide a cost-effective solution. Once complete, the rehabilitation project would allow the City to both optimize the lift station pumps and also reduce the flow requirements within the existing force main. The reduced force main size requirement created an ideal opportunity for trenchless construction by sliplining a new smaller diameter force main through the existing ductile iron pipe. Sliplining would also limit the impacts to adjacent utilities and City residents.

The City of Minnetonka's website boasts "Minnetonka is a fully developed suburban community of more than 53,000 residents located eight miles west of Minneapolis. The City's natural surroundings set it apart from similar-sized suburbs and give the community a distinct character. The uniquely beautiful landscape, three top-ranked public school districts, a regional shopping center, year-round recreational opportunities, an eclectic housing stock and a host of thriving businesses, make Minnetonka a premier location for people of all ages to live and work."

Prior to enlisting engineers with WSB to design and oversee construction of the 24-inch forcemain rehabilitation project, the City completed several engineering evaluations and constructed a parallel 12-inch force main in 2019 to bypass the existing force main. It involved the construction of nearly 10,000 linear feet of 12-inch DR 18 fusible PVC force main piping, mostly by horizontal directional drilling, which provided the ability to take the existing 24-inch pipeline out of service for evaluation and consideration of rehabilitation options. The City and WSB performed an extensive condition assessment of the existing 24-inch force main and determined that sliplining it with a new pipe would be the best option.

Over 8,700 linear feet of 18-inch DR 21 fusible PVC pipe was installed inside the ductile iron force main, originally installed in 1971. Nearly 90 percent of the existing force main length remained in the ground as a casing for the new force main. Sliplining the new force main allowed for considerably less excavation, less detours, less impact to adjacent utilities, and significantly quicker construction time than traditional open trench replacement. The



Existing ductile iron force main used as casing for sliplining new force main

contractor, Geislinger and Sons, installed the 18-inch slipline segments in lengths ranging from 500 to 1250 feet.

There were some concerns that deflected joints within the existing force main might create problems for the sliplining process. As a result, it was calculated that the 18-inch fusible PVC piping could navigate a single deflected joint in the host pipe up to 4.8 degrees, or a series of deflected host pipe joints up to 2.8 degrees. This amount of pipe deflection allowed the

"Sliplining the new force main allowed for considerably less excavation."

for final placement adjustments at the receiving end. Once the sliplining sections were completed, the contractor made the reconnections with MJ fittings and then pressure tested the line before putting it into service. †

ABOUT THE AUTHOR:



Jason K. Bordewyk is the Regional Manager for Underground Solutions in Minnesota, Wisconsin, and Iowa. Jason supports engineers and end users with trenchless construction solutions for new installation and rehabilitation projects. Jason has worked within the water and wastewater industry since 2001. Prior to joining Underground Solutions, Jason worked as a consulting engineer with two firms in the Upper Midwest. He is a licensed engineer in Minnesota & Wisconsin.



The 18-inch Fusible PVC was installed in 500 to 1250-foot lengths

contractor to slipline more sections of the pipe than they originally anticipated, with approximately 90 percent of the original force main alignment being rehabilitated via sliplining. Bends and other fittings on the host pipe were excavated and removed prior to sliplining and those fitting locations were used as insertion or receiving pits.

The pipe was fused by trained Core & Main technicians ahead of excavation, so once the shored pipe insertion pit was prepared, the pipe could be easily inserted into place. The new force main was installed using an excavator from the pipe insertion side. With a sling around the pipe, the excavator would pull forward or "stroke" the new pipe into the host pipe. A pull head with bolts through the pipe was used to keep debris out of pipe and allowed



Fitting locations were used as insertion or receiving pits

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-Josh S.
Wisconsin HDD driller



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Patent No. 11,525,313



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COMPRESSION FIT HDPE PIPE – ANOTHER PROVEN PIPELINE REPLACEMENT METHOD

ASTM Standard Codifies Method for Gravity and Pressure Pipe for Both Water and Force Main Projects

By: Plastics Pipe Institute, Inc. (PPI)

It wasn't a typical, normal sliplining job to replace a failing force main line in Sioux Falls SD. The original ductile iron pipe had deformed and had severe ovality. Hydrogen sulfide gas from the sewage flow made sulfuric acid, which collected at the top of the metal pipe and destroyed it. It was thought that pulling through a new pipe wouldn't be possible as it would hang up on the deformed inner wall of the old pipe. Reducing the diameter was not possible -- the diameter of the new pipe needed to be as close to the old one to maintain the rate of flow. The solution provided by Murphy Pipeline Contractors (Jacksonville, FL) was to use high-density polyethylene (HDPE) pipe and compress it to fit, knowing that the thermoplastic pipe would naturally reform itself.

"This is one of the inherent attributes of HDPE pipe," stated Camille George Rubeiz, P.E., F. ASCE, co-chair, HDPE Municipal Advisory Board, and senior director of engineering for the Plastics Pipe Institute's (PPI) Municipal & Industrial Division. "As well as being corrosion proof, it is flexible and ductile to go through a special die on the job site that makes it possible to be pulled inside a host pipe even when the pipe is not round. In this case, the ovality would have no affect during installation and the HDPE pipe would form a tight compression fit within the old ductile iron pipe." PPI is the major North American association representing the plastic pipe industry.

"The thicker HDPE pipe provides structural integrity. In this case, the ovality would have no affect during installation and the HDPE pipe would form a tight compression fit within the old ductile iron pipe."

- Harvey Svetlik, P.E., HDPE Pipe Industry Consultant

More than 8,700 feet of 36-inch ductile iron sewer force main was replaced with HDPE PE 4710, DR 21 pipe using Murphy's CompressionFit™ method, patent pending. The new pipe has a 100-psi operating and a 200-psi surge pressure rating, and is rated as a Class 6 solution in accordance with ASTM F3508. The sewer force main traversed under three city parks, along Covell Lake, through major commercial districts and under state highway SD 115. It was made and provided by WL Plastics (Fort Worth, TX), a member company of PPI.

Opened in 1985, the Sioux Falls system treats some 18 million gallons of wastewater daily. There are 900 miles of pipe in the system that conveys the wastewater to the city's treatment plant. There is a \$215 million expansion plan underway that will increase the facility's

capacity by 50 percent when completed in 2025.

"One of the questions we were asked was 'Can a 36-inch ductile iron sewer force main with severe ovality be replaced with HDPE pipe using CompressionFit?'" said HDPE pipe industry expert and consultant Harvey Svetlik, P.E. "The answer was an unequivocal 'yes'. Matter of fact, some other recent projects saw 54-inch diameter pipe with a three-inch wall thickness installed using the CompressionFit method. One of the principal things that this technology does is that it preserves the flow rate of the existing host pipeline and seals over holes and leaks, so you have a dual-wall composite pipeline. And the thicker HDPE pipe provides structural integrity."

Svetlik has more than 40 years of experience in the plastic pipe industry,

specializing in polyethylene pipes and fittings. He is the inventor of the MJ Adapter, also known as the Harvey Adapter. An active member of PPI for 30 years, he is the author of numerous PPI technical notes, developer of ASTM/AWWA standards, and an inventor who holds 16 patents.

One of the most recent ASTM standards authored by Svetlik is ASTM F3508 for the installation of compressed fit shape memory polymer pipe. “ASTM F3508 codifies the specification of the material to use and deals with the shape memory characteristics of the material such as high-density polyethylene.

“With the CompressionFit technology, instead of elongating a rubber band and letting it recover as is done with Swagelining, they basically do a lot more of radial compression. Instead of stretching it and thinning the wall, they downsize it and radially thicken the wall, such that when it goes into place it enlarges in diameter, and the radial wall

“In this case, the ovality would have no affect during installation and the HDPE pipe would form a tight compression fit within the old ductile iron pipe.”

- Camille George Rubeiz, P.E., F. ASCE, Co-chair, HDPE Municipal Advisory Board

thickness stands as it expands out, like rolling out pie dough.”

The developer of CompressionFit is Murphy Pipeline Contractors (Jacksonville, FL). “Most cities cannot afford to relocate and replace a 16-inch diameter or larger pipeline within their vast utility network,” said Todd Grafenauer, education director for Murphy. “The result of the CompressionFit HDPE pipe lining technology is that a new HDPE pipe will

be ‘compressive fit’ inside the existing host pipe. This lining offers remarkable value over other construction methods such as an increased flow rate over sliplining, we do an average pull distance of 2,000 feet with more than a 90 percent reduction in excavation and there’s no new easement documentation needed. Plus, we simply follow the existing pipe path using GIS maps.” Murphy is a member company of PPI and also part of the association’s Municipal Advisory Board (MAB).

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The new 36-inch HDPE pipe replaces the corroded ductile iron pipe in the Sioux Falls, SD sewer system
(PHOTO CREDIT: MURPHY PIPELINE)

Governed by ASTM F3508, the CompressionFit HDPE pipe lining technology specifies an HDPE pipe with an outside diameter larger in size than the inside of the host pipe to be renewed. After the HDPE is butt fused to correspond to the pull distance, the pipe is pulled through a reduction die immediately before entering the host pipe. This reduces the HDPE pipe temporarily below the inside diameter of the host pipe allowing it to be inserted.

While the towing load keeps the HDPE under tension during the pull, the pipe remains in its reduced size. The HDPE remains fully elastic throughout the reduction and installation process. After

installation, the pulling load is removed. The HDPE pipe expands until it is halted by the inside diameter of the host pipe. The effectively natural ‘tight’ or ‘compression fit’ is accepted as exchanging an existing failing pipeline with a composite pipe in its place.

“One of the things about the ASTM F3508,” Svetlik explained, “is that it can be utilized not only for municipalities for gravity flow, but even more ideally for pressure pipes for water pipeline replacement, or force main replacement.”

Additional information can be found at www.plasticpipe.org/mabpubs or www.plasticpipe.org/municipalindustrial 🏠

ABOUT PPI:



The Plastics Pipe Institute, Inc. (PPI) is the major North American trade

association representing the plastic pipe industry and is dedicated to promoting plastic as the materials of choice for pipe and conduit applications. PPI is the premier technical, engineering and industry knowledge resource publishing data for use in the development and design of plastic pipe and conduit systems. Additionally, PPI collaborates with industry organizations that set standards for manufacturing practices and installation methods.



Replacing the Sioux Falls corroded ductile iron pipe that had been eaten away by sulfuric acid caused by sewage, the HDPE pipe is inserted into the destroyed pipe using the CompressionFit method from Murphy Pipeline
(PHOTO CREDIT: MURPHY PIPELINE)



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AKKERMAN REVOLUTIONIZES OPERATOR TRAINING WITH STATE-OF-THE-ART FACILITY



Akkerman, a renowned producer of high-grade tunneling and boring equipment, has recently taken a groundbreaking step in enhancing operator training for construction firms specializing in trenchless underground construction. You will find the highlights of the company's remarkable journey of success, attributing it not only to their sophisticated equipment but also to the skilled operators using them.

However, the construction industry is facing challenges, including increased turnover and a growing need for faster and more effective equipment training on a larger scale. Akkerman has traditionally relied on its model of providing on-site training through traveling technicians to customers before they handle new equipment. Nonetheless, President Justin Akkerman acknowledges that conducting training at active work sites is far from ideal, as it can lead to losses due to delayed work and increased costs.

In a bold move, Akkerman embarked on the construction of a cutting-edge training center in early July, with an investment of a quarter million dollars. This innovative facility is designed like a raised garden bed, featuring three 40-foot-long channels standing approximately six feet tall and filled with varying materials, from soil to rocks.

The new approach invites customers to send their teams to Akkerman for training upon hiring or during downtime, significantly reducing losses caused by work delays. While Akkerman will still dispatch technicians on-site to assist with new equipment as required, a substantial portion of the training can now take place at the Brownsdale training center. This shift provides operators with access to abundant resources, without the pressures of tight schedules and deadlines.

Notably, this state-of-the-art facility will not only benefit the customers but also enhance the company's own research and development efforts. Akkerman previously collaborated with clients to test new and prototype equipment at active project sites, but this approach had its limitations. Real-world testing, though informative, could sometimes disrupt the client's work and strain relationships. The new training center allows Akkerman to privately assess prototypes without the risk of public failures.

Another significant advantage of the training center is its potential to boost customer product awareness.

When clients visit Akkerman HQ, they will witness a wide array of equipment in action with minimal setup required. Justin Akkerman believes this first-hand experience will significantly enhance customer appreciation of the company's offerings.

Enterprise Minnesota's Business Growth Consultant Abbey Hellickson praises the innovative concept, recognizing how it fosters a more profound level of engagement between Akkerman and its customers. The facility's interactive nature encourages a closer bond and better understanding, elevating customer experience to new heights.

In conclusion, Akkerman's forward-thinking approach to operator training sets a new standard in the construction industry. By investing in a dedicated training center, the company addresses challenges, improves customer relationships, and amplifies its commitment to excellence. This move proves that innovation and customer-centric strategies are the pillars of Akkerman's continued success and growth.

Learn more at www.akkerman.com. 





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MSTT Detroit Seminar a Trenchless Technology Showcase

Trenchless Technology seminars hosted by MSTT in locations across the Midwest have been a mainstay of trenchless technology outreach and education efforts across the region for two decades. On September 20, 2023 MSTT hosted a highly successful seminar in Detroit MI showcasing the wide ranging trenchless technology projects undertaken by the Great Lakes Water Authority (GLWA). An earlier MSTT seminar scheduled for May 17 in Louisville KY was unfortunately postponed due to event conflicts.

MSTT has now hosted a total of 40 seminars since 2003 in 15 different cities across the Midwest Chapter's nine state area. These seminars have engaged over 2100 underground infrastructure professionals in total over this period, facilitating meaningful direct networking between industry and owner groups. The MSTT seminars represent an impressive track record of raising awareness of the advantages of using trenchless technology methods in infrastructure construction programs.

As part of the MSTT mandate to "promote Trenchless Technology through education for the public benefit", the seminar programs are designed to inform public officials, engineers, utility company personnel, designers, and contractors involved with the construction, rehabilitation, and management of underground infrastructure assets, in the Midwestern states. They are great venues for educating decision-makers on the many social and economic benefits of using trenchless technology in their infrastructure renewal and new construction programs.



Great Lakes Water Authority (GLWA) Guest Presenters Mr. David Mehram, PE, Chief Operating Officer, Wastewater Operating Services and Mr. Greg Marker PE, Lifecycle Project Manager, Wastewater Engineering, delivered an engaging presentation showcasing "GLWA'S Trenchless Projects and Future Forecasts"

Continuing this long-standing tradition, MSTT conducted a very well-attended single-day seminar September 20, 2023 at the Wyndham Garden Romulus Detroit Metro Airport Hotel in Detroit MI. The featured Guest Presenters from the Great Lakes Water Authority (GLWA), Mr. David Mehram, PE, Chief Operating Officer, and Mr. Greg Marker PE, Lifecycle Project Manager, Wastewater Engineering delivered an outstanding presentation outlining the GLWA's "Trenchless Projects and Future Forecasts". There were ten other presentations by industry professionals on a wide range of trenchless

technology topics, along with exhibits from industry suppliers.

This was a very good year for MSTT to resume its effective in person **Trenchless Technology, SSES and Buried Asset Management Seminars** in locations across the Midwest. A bright future for trenchless technology outreach is just ahead as MSTT resumes its program of trenchless technology outreach across the Midwest.

Special thanks to MSTT seminar exhibitors, sponsors, presenters and attendees for all our seminars over the past two decades.

THANKS FOR YOUR SUPPORT!!! 🏠



MSTT seminars are excellent learning opportunities. Professional Development Hours certificates are given to participants

"Promote Trenchless Technology through education for the public benefit."

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Dr. Tom Iseley, BAMI-I Chairman, gives a presentation at the Detroit MI seminar on the Certification of Training in Asset Management (CTAM) program

For information dates and locations of future MSTT Trenchless Technology, SSES and Buried Asset Management seminars and virtual webinars planned for the Midwest, visit:

www.mstt.org

DETROIT SEMINAR SEPTEMBER 20, 2023: -MSTT-

GUEST PRESENTATION

"GLWA'S Trenchless Projects and Future Forecasts"

Mr. Navid Mehram, PE, Chief Operating Officer, Wastewater Operating Services and
Mr. Greg Marker PE, Lifecycle Project Manager, Wastewater Engineering

PRESENTATIONS

Welcome to the Trenchless Technology Seminar,
Leonard Ingram, PWAM, MSTT Executive Director

Trenchless Rehabilitation Solutions,
Sue Bazen, Aegion - Underground Solutions, Inc.

Pilot Tube Method Technology With Case Studies,
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Buried Asset Management Institute - International (BAMI-I) & Certification of Training in Asset Management (CTAM) Program,
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The Buried Asset Management Institute – International (BAMI-I) & ASCE'S Utility Engineering and Surveying Institute (UESI) have joined forces to plan five ASCE UESI/BAMI-I UIS in 2024. These short courses will give practitioners the knowledge and tools to provide competent utility investigations in accordance with accepted national standards (ASCE 38) and to defend against claims through this knowledge and its documentation.

FOR MORE INFORMATION, CONTACT:

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