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Letter from UESI President

On behalf of the Utility Engineering and Surveying Institute (UESI) of the American Society of Civil Engineers (ASCE), welcome to the Pipelines 2019 Conference in Nashville, TN.

Concepts in Harmony is not only our theme this year, but a challenge to all of us to be ever diligent in understanding and communicating our role in managing the built and natural environment. Pipeline projects require a diverse understanding, and when done well, achieve infrastructure harmony. Conversely, when done poorly, unacceptable outcomes can occur. This conference is unique to the world in bringing together the premier expertise in the Pipeline Engineering field. From engineers to surveyors, seasoned to young members, experts to the novice, we will all walk away from this conference having learned something new.

This conference meets the mission of UESI as Utilities and Surveying have worldwide applications and UESI was developed to be that global leader in educational development and opportunities for professionals, manufacturers, and technologists to contribute their collective knowledge to make the world a better place.

To those attendees that are not currently ASCE or UESI members, please stop by the UESI booth while at the conference and learn more about ASCE and how you can contribute.

I look forward to seeing you there.

David Tatman, M.ASCE
ASCE UESI President 2019
Director of Asset Management | Innovyze

Conference Steering Committee

Conference Co-Chair:
Anna Pridmore, Ph.D., P.E., M.ASCE
Vice President, Pipeline Solutions, Structural Technologies

Conference Co-Chair:
Hal Balthrop, P.E.,
Assistant Director, Metro Water Services, Nashville

Technical Program Co-Chair:
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ENV SP, M.ASCE
Associate Project Manager/Water, Burns & McDonnell

Technical Program Co-Chair:
Mark S. Mihm, P.E., ENV SP, M.ASCE
Professional Associate, Water/Wastewater, Senior Project Manager, HDR

Advisors to the Technical Program Co-Chairs:
Jason S. Lueke, Ph.D., P.Eng., M.ASCE
Trenchless Practice Leader, Associated Engineering Limited

Chris Macey, P.Eng., M.ASCE
America’s Technical Practice Leader—CA and Rehabilitation, AECOM

Exhibits Chair:
Steve Ford
Vice President, Garney Construction, Advancing Water

Invitation to Attend

Hey ya’ll, I declare, we’re fixin’ to have a grand ole time at the UESI Pipelines 2019 Conference in Nashville, Tennessee! The temp will not be the only thing blazing this summer.

Nashville is famous for sizzling good BBQ, hot chicken, and our electrifying downtown Broadway! There’s plenty to do here, so come early and stay late. Nashville is a top destination in the South!

For music lovers, there’s the Grand Ole Opry, The Country Music Hall of Fame and honky tons and music venues practically everywhere — and Tuesday night we’ll be enjoying live music and line-dancing at the world famous Wildhorse Saloon!

If you’re a sports enthusiast, we have premium golf courses and great boating & water skiing lakes and rivers around town, or if you’re in the mood to catch a baseball game, the minor league affiliate of the Rangers, the Nashville Sounds, has home games during your visit.

Nashville is a Foodie’s paradise — meat and threes (look it up) everywhere and mac and cheese is a staple here — just like momma used to make! For those of you needing your cultural fix, Nashville has a replica of the Parthenon, President Andrew Jackson’s home, the historic Ryman Auditorium (original Grand Ole Opry), and antebellum plantations and museums for touring.

Don’t forget the main attraction — the technical content delivered at the Pipelines Conference is second to none in the industry. We have an outstanding lineup of paper presentations, workshops and vendor exhibits. And learning is in order along with all the fun — Nashville is known as the “Athens of the South” because it was the first southern city to have a public education system organized, and today the city is filled with institutions of higher learning.

Start preparing for your trip to Nashville! Bring seasonably comfortable clothing (boots, jeans and cowboy hats are a must — bless your heart!), or sensible shoes (if boots aren’t your thing), because we’re a great walking city. Bring your pocketbook and a healthy appetite for great food and for learning — this destination and conference will feed both — you’ll be full up. It’s shaping up to be a memorable conference and destination sprinkled with some southern hospitality and charm!

See you in July!

Dade Water and Sewer Department
Consent Decree Program, Miami-Dade Water and Sewer Department

ASCE Pipelines Divisions
EXCOM Liaison:
Tennyson Muindi, P.E., M.ASCE
Lead Associate, McMillen Jacobs Association

International Coordination Chair:
Sandra Rolfe-Dickinson, P.Eng., C.Eng. (UK)
Technical Director, Pipetechnics Ltd.

Education Coordinator:
Erin McGuire, P.E., M.ASCE
CDM Smith

Publicity and Media Coordinators:
Robert Carpenter, Aff.M.ASCE
Oildom Publishing

Mike Kezdi
Associate Editor, Trenchless Technology Canada, North American Oil & Gas Pipelines

UESI Liaison:
Victor E. Fernandez-Cuervo, P.E.,
ENV SP, F.ASCE
Consent Decree Program, Miami-Dade Water and Sewer Department

Register Now! Visit www.pipelinesconference.org
EMERGENCY PREPAREDNESS

8:00 a.m.–12:00 p.m.

In linear systems, emergencies come in many forms and often result following a natural disaster – earthquakes, hurricanes, floods or a sudden failure in the system due to age or changes in operating protocols. In water and wastewater systems, being prepared for the unexpected can mean the difference between maintaining or restoring service quickly and having a complete loss of service which will dramatically impact other emergency services.

This workshop will consist of presentations from agencies that have experienced events that disrupted service that could have easily resulted in extended down time. The presenters will share their experience and approach to prepare for the unexpected and how they managed through their events. The workshop will also identify what some agencies are doing to prepare for the unexpected and how experienced events that disrupted service that could have easily resulted in extended down time. The presenters will share their experience and approach to prepare for the unexpected.

There will be a panel discussion to answer questions related to designing for the unexpected, types of on-hand materials/spare parts, where to strategically place and maintain materials and equipment, emergency contracts and contacts, resource deployment, building resource networks, and other topics.

Workshop Lead: John R. Plattsmier, P.E., M.ASCE, Senior Vice President, HDR Engineering, Inc.

Presenters: Nathan Faber, P.E., Operations and Maintenance Manager, Asset Management, San Diego County Water Authority; Tyler Wubben, P.E., Engineering Manager, City of Hillsboro, Oregon; Matt Duffy, P.E., Assistant Engineering and Construction Manager, Tuvalu Valley Water District; Bret Berthold, P.E., Assistant Director of Operations, Metropolitan St. Louis Sewer District (MSD); Michael Johnson, P.E., CFM, Director of Professional Services, HDR

Registration Fee: Early Bird: $195 | Advance: $220 | Onsite: $245
Number of PDHs: 4 hrs
Sponsorship Opportunity Open
SUNDAY, JULY 21

RECREATIONAL ACTIVITIES
10:00 a.m.–2:00 p.m.

Sporting Clay Tournament

Join us at the Nashville Gun Club as we reprise this Pipelines Conference tradition. Transportation, Nashville barbeque, and great company will be provided!

Sporting clays is a form of clay pigeon shooting often described as “golf with a shotgun”, because a typical course includes from 10 to 20 different shooting stations laid out over natural terrain. No two sporting clays courses are alike, and terrain and background have a lot to do with how targets are presented. Sporting clays simulate the unpredictability of live-quarry shooting, offering a great variety of trajectories, angles, speeds, elevations, distances, and target sizes. The courses are designed to simulate the hunting of ducks, pheasants, other upland birds, and even rabbits.

Registration Fee: $85

WELCOME RECEPTION IN EXHIBIT HALL
5:30 p.m.–7:00 p.m.

Join your fellow attendees in opening the conference by enjoying food, drinks and viewing the exhibits!

Included in Full, Speaker, Moderator, Municipal, Student, and Monday Daily registration rates.

Additional tickets: $45

POSTER VIEWING IN EXHIBIT HALL

Posters available for viewing from Sunday, July 21 at 6:00 p.m. through Tuesday, July 23 at 4:30 p.m. Presenters will be available for questions on Monday, July 22 from 3:00 p.m.–4:00 p.m. and Tuesday, July 23 from 3:30 p.m.–4:30 p.m.

MONDAY, JULY 22

PLENARY BREAKFAST, WELCOME, AND KEYNOTE PRESENTATION
7:30 a.m.–9:00 a.m.

Join us for the introductory event of the 2019 Pipelines Conference! Start the morning with a welcome from a city of Nashville official and 2019 ASCE President Kristina Swallow, P.E., ENV SP, FASCE, followed by the Keynote Speaker, Lionel Cartwright, internationally known singer, songwriter and performer. Don’t miss the exceptional opportunity to fuel up for a day of learning with friends and colleagues.

ASCE Past President Kristina Swallow, P.E., ENV SP, FASCE is a program manager for the City of Las Vegas, and has more than twenty-years of professional practice in water resources, transportation, and land development. She leads a team of engineers responsible for delivering public works projects and planning the sanitary sewer collection system. Kristina has been active in ASCE for more than two decades, and has served on the Utility Engineering and Surveying Institute as a Board-appointed Governor before being elected as the 2017 ASCE President.

Among many past roles, she served as Region 8 Director, Region 8 Governor, Educational Activities Committee Chairman, and on ASCE’s 150th Anniversary Steering Committee. She also worked for the Office of Senator Tom Udall as a legislative assistant on transportation issues from 2010–2012. Kristina received her Bachelor of Science Degree in Civil Engineering at the University of Arizona and her Master of Science in Civil and Environmental Engineering from the University of Nevada, Las Vegas. Kristina is a licensed professional engineer in Nevada.

Lionel Cartwright

Lionel Cartwright's career as a composer/recording artist has been an artistic navigation of tsunami sized paradigm shifts: from network to cable TV, the music business pre- and post-Internet, from mass media to social media. He’s had #1 hits, million-play songwriting awards, toured internationally, worked as a band leader/music director for TV, and composed over 100 scoring packages for television and film.

Lionel's artist journey isn’t just a peek inside the music business. It’s real life, take away inspiration for negotiating the inescapable change we all face.

Employing self-penned hit songs as his narrative, relating first hand acquaintance with risk, vulnerability and perseverance, Lionel brings high octane encouragement to audiences facing the same challenges.

Included in Full, Speaker, Moderator, Municipal, Student, and Monday Daily registration rates.

Additional tickets: $55

EXHIBIT HALL LUNCH
11:30 a.m.–1:00 p.m.

Enjoy lunch as you tour this year’s exhibit hall, meet exhibitors, and learn about the exciting new developments and products in the pipelines industry.

Included in Full, Speaker, Moderator, Municipal, Student and Monday Daily registration rates.

Additional tickets: $55

Sponsored by: Northwest Pipe Company

CONCURRENT TECHNICAL SESSIONS
1:00 p.m.–2:30 p.m.

NETWORKING BREAK IN EXHIBIT HALL
2:30 p.m.–4:00 p.m.

CONCURRENT TECHNICAL SESSIONS
4:00 p.m.–5:30 p.m.
The ASCE Pipeline Division Award of Excellence was established in October 1969, the award is made annually to an individual who has made a definite contribution during the year to the advancement of pipeline engineering in research, planning, design, construction or management, these contributions being made in the form of papers or other written presentations, or in some instances through notable performance, long years of service, or specific actions which have served to advance surveying and mapping.

George Hawkins, past CEO of DC Water and current Founder of the non-profit Moonshot Partners

Prior to joining DC Water, Mr. Hawkins was Director of the District of Columbia Department of Energy and the Environment and served as Executive Director of several nonprofit organizations in New Jersey, including the Watershed Institute, and previously held senior positions with the U.S. Environmental Protection Agency and the law firm Ropes & Gray. He graduated Summa Cum Laude from Princeton University and Cum Laude from Harvard Law School and taught environmental law and policy for the Princeton Environmental Institute from 1999 to 2017. He has been the recipient of numerous awards for leadership and public service, including the American Water Works Association’s Fuller Award for Leadership and Innovation, Governing Magazine’s Public Official of the Year in 2015, Water Environment Federations Public Official of the Year in 2016, and the Water Leader of the Year Prize in 2017.

George serves on the National Infrastructure Advisory Council, which provides advice to the White House on infrastructure policy. George is a strategic advisor to Xylem, Inc., one of the world’s largest water technology companies. George is also an Executive in Residence for XPV Water Partners, a private equity firm that focuses on innovative water technologies. George is on the Board of Directors of the North American Electric Reliability Corporation, which ensures the reliability of the bulk electric grid, and on the Board of Directors of the US Water Alliance. George also serves as a Professor of Practice for American University’s School of Public Affairs, where he teaches graduate students about urban development, infrastructure and innovation.

Keynote Summary: Many lament that estimates of resource needs to upgrade the nation’s infrastructure measure in the hundreds of billions per year. For water utilities, however, these estimates are almost always incorrect—and not because the calculations are wrong, but because they are founded on cost estimates based on past practices. Today, tried and true approaches can enable utilities to improve services at lower cost—saving ratepayer funds and providing flexibility for new investments. George will highlight practical examples of approaches that achieve the Moonshot of a “better, faster, cheaper” outcome. He will then explore why these approaches have not been adopted more readily and conclude with practical steps any organization, large or small, can take to get on the road to achieving their innovation Moonshot.

Included in Full, Speaker, Moderator, Municipal, Guest, Student and Tuesday Daily registration rates.

Additional tickets: $65

2019 STEPHEN D. BECHTEL AWARD LECTURE
1:15 p.m.–1:45 p.m.

SURVEYING AND MAPPING AWARD LECTURE
1:15 p.m.–1:45 p.m.
CONCURRENT TECHNICAL SESSIONS  
2:00 p.m.–3:30 p.m.

NETWORKING BREAK IN EXHIBIT HALL  
3:30 p.m.–4:30 p.m.

CONCURRENT TECHNICAL SESSIONS  
4:30 p.m.–5:30 p.m.

SPECIAL EVENT – WILDFORCE SALOON PARTY  
6:30 p.m.–9:30 p.m.

Come to the heart of Music City at the famous Wildhorse Saloon for dining and libations, live entertainment, games, and line dancing at the annual party sponsored by Structural Technologies. The venue is located on 120 2nd Ave. N, a 7-minute walk (0.4 miles) from the Renaissance Hotel.

Registration Fee: $50
Sponsored by: structural technologies
A Structural Group Company

WEDNESDAY, JULY 24

CONTINENTAL BREAKFAST  
7:30 a.m.–8:00 a.m.

CONCURRENT TECHNICAL SESSIONS  
8:00 a.m.–9:30 a.m.

NETWORKING BREAK  
9:30 a.m.–10:00 a.m.

CONCURRENT TECHNICAL SESSIONS  
10:00 a.m.–11:30 a.m.

WELLNESS LUNCH  
11:45 a.m.–1:00 p.m.

Keynote Speaker: Johanna Belsuzarri, Local Latin CEO
Johanna is the Founder of Local Latin, an international events firm dedicated to the Health & Wellness industry. Born in Peru, she lived in Argentina & Brazil and is fluent in English, Spanish and Portuguese. She has had the opportunity to work for Apple, as head of Latin America for their meetings and events department. She brings her expertise, love of Latin America, and global knowledge to each event.

Keynote Summary: Johanna will talk about health at work, health at home and how to protect our families, common food allergens, how disease starts, ingredients in everyday products. She will give us some useful tips on resources and suggestions for eating while on the road, possibilities for upgrading work travel, and stress management.

Additional Ticket: $60

TECHNICAL TOURS & TOP GOLF RECREATIONAL ACTIVITY  
1:00 p.m.–3:00 p.m.

Omohundro Water Treatment Plant and 8th Avenue Reservoir
Omohundro is a combination of impressive civil engineering and magnificently beautiful architecture. The George Reyer pumping station, when placed in service in 1889, was able to pump raw water from the Cumberland River to the resident of Nashville at a rate of 10 MGD. After several upgrades and the addition of the Robert L. Lawrence Filtration Plant in 1929, the treatment facility, now known as Omohundro, has a capacity of 90 MGD and consists of five low service pumps, seven high service pumps, two grit tanks, 22 flocculators, three sedimentation basins, and 30 filters. The chemicals used in the treatment process today consist of alum, powder activated carbon, liquid fluorosilicic acid, liquid lime, nonionic polymer, potassium permanganate, ortho-polyphosphate, and on-site bleach generation.

Originally known as the City Reservoir, the 8th Avenue Reservoir was constructed in 1889 as a settling basin. River water was pumped from the George Reyer pumping station to the reservoir where the mud was allowed to settle to the bottom. The clear water at the top was then distributed to the community through wooden pipes. The reservoir was designed with two compartments, each with the capacity to hold approximately 25.5 million gallons of water. Still in operation today, the 8th Ave Reservoir remains Metro Water Service’s largest reservoir and was placed on the National Register of Historic Places in 1978.

Registration Fee: Early Bird: $35 | Advance: $45 | Onsite: $50
Number of PDHs: 1 hr

The EQ Basin
West Park Equalization Facility, completed in 2018, was a collaborative project between Metro Nashville Parks and Recreation and Nashville Metro Water Services. The project includes new recreation amenities to support the rapidly-developing adjacent communities, as well as updated wastewater system infrastructure to address sanitary sewer overflows and improve water quality in Richland Creek.

Through two phases of construction, the wastewater equalization facility now consists of a 45 million gallon per day, wet-weather pump station and two storage tanks totaling 31 million gallons. That is in addition to the West Park Pumping Station that sends flow to the wastewater treatment plant. The new storage tanks are utilized when sewer flows exceed the capacity of the existing West Park Pumping Station.

Due to the location of the facility within an existing Metro park, the project also delivered numerous new features for parks users, including a playground, a picnic pavilion, and ball fields, in addition to planting over 200 trees on the site. The numerous sustainable features incorporated into the design and construction earned the Envision Platinum Award from the Institute for Sustainable Infrastructure (ISI). This was the first joint wastewater and park project in the U.S. to receive an ISI Envision rating award.

Tour both the equalization facility and the adjacent park to learn more about this collaborative project’s initiation, design, and construction challenges, as well as see how the park and facility are used by the surrounding community.

Registration Fee: Early Bird: $35 | Advance: $45 | Onsite: $50
Number of PDHs: 1 hr

Top Golf – 1:00 p.m.–3:00 p.m.
Take one last opportunity to have fun and say good bye to your friends before heading home! Nashville Topgolf is a sports entertainment complex that features an inclusive, high-tech golf game that everyone can enjoy. Paired with an outstanding food and beverage menu, climate-controlled hitting bays and music, every Topgolf has an energetic hum that you can feel right when you walk through the door. Transportation and bay reservations are provided.

Registration Fee: $50

Register Now! Visit www.pipelinesconference.org
THANK YOU TO OUR TECHNICAL COMMITTEE

Jeffrey W. Heidrick, P.E., ENV SP, M.ASCE, Technical Program Co-Chair • Mark S. Mihm, P.E., ENV SP, M.ASCE, Technical Program Co-Chair
Jason S. Luuke, Ph.D., P.Eng., M.ASCE and Chris Macey, P.Eng., M.ASCE, Advisors to the Technical Program Co-Chairs

We would like to thank the individuals who participated as part of the 2019 Technical Committee. Everyone worked as a team starting with abstract, paper and poster reviews and throughout the construction of this year’s Technical Program. To all those continuing to assist as track chairs and moderators we thank you in advance for your valuable contributions which will make the Conference a success!

Pat Acker
Titilope Adeola
Ali Alavinasab
Nicholas Augustus
Greg Baird
Jennifer Baldwin
Abdulrahman Bin Mahmood
Jeblakely
George Bontus
Nathan Boyd
Adam Braun
William Brick
Keith Bushdiecker
Robert Card
Dave Caughlin
Balkrishna Chavan
Bill Chavez
Scott Christensen
Alex Clark
Andrew Costa
Kyle Couture

Greg Crews
Susan Donnally
Matthew Duffy
Darren Dunker
Christine Ellenberger
Murali Engindeniz
Michael Fleury
Amin Ganjidoost
Hadi Ganjidoost
Matt Gaughan
Shoaqing Ge
Jim Geibshu
Ahmad Habibian
Christopher Haekler
Jennifer Harrison
Neil Harvey
Shelly Hattan
Brent Hauser
Mike Jacobson
Doug Jenkins
Jarred Jones
Brent Keil
Josh Kercho
Jan Kim
Joel Koenig
Satish Kumar
Mike Larsen
Jeff LeBlanc
Mike Lehrburger
Matt Liu
Bryan Livingston
Jason Luuke
Wendy Lundeen
Chris Macey
Charles Marsh
John Matthews
Melissa McKenzie
Roberts McMullin
Rich Mielke
Antonio Miglio

Babak Mohammadi
Mohammad Mudassar
Peter Nardini
Sanjay Negi
Richard Nichols
Jaime Ordenez
Kalyan Pirlat
Olatunji Papoola
Mark Poppe
Steve Puhllo
Felipe Pulido
Sri Rajah
Aditya Ramamurthy
Javan Reynolds
Eric Schey
Wall Schwarz
Veyssel Sever
Ad Sharat
Jonathan Shirak
Jeffrey Shoa

Harshit Shukla
Jerry Sneed
Andrew Sneed
Russ Snow
Andrew Sparks
Ross Standifer
Andy Stanton
James Steele
Duane Strayer
Alan Swartz
Amir Tabesh
Sanjay Tewari
Daniel Toft
Berk Uslu
Ricardo Vieira
Robert Walker
Justin Waples
Brad Wham
Michael Wilcox
Andrew Williams
Sepideh Yazdekhabasti

For those with an interest in volunteering for the 2019 Conference, please look for information at the Conference in Nashville and on the Website (www.pipelinesconference.org). Together we will continue to make UESI Pipelines Conference the premier technical event in our industry.

POSTER PRESENTATIONS

Posters will be available for viewing from Sunday, July 21 at 6:00 p.m. through Tuesday, July 23 at 4:30 p.m. Presenters will be available for questions on Monday, July 22 from 3:00 p.m.–4:00 p.m. and Tuesday, July 23 from 3:30 p.m.–4:30 p.m.

Planning & Design

| 534369 | Alternatives Analysis Leads to Over a Mile of 12-Foot Diameter Tunnel – Wendy M. Lunde, Greg Crews, Roel E. Huerta |
| 535318 | Forecaine Design Challenges: Flood Channels, Freeways, Siphons and More… – James Cathcart, Jacob Dalgoff, Dickie Fernandez, Marianne Kleine, Emi Fujii, Patrick Stahl |
| 535191 | Biaxial Quasi-Static Soil-Pipeline Interaction for Dry Sand Site Conditions – Kien T. Nguyen, Domnik Asimak |

Condition Assessment

| 535583 | Development of a National Sewer Inventory for Sewer Pipeline Assessment and Certification Program (PACP) Inspection Data – Hossein Khaleghian, Yongwei Shan, Phil Lewis |
| 535681 | Computational Modeling of In-Pipe Flow Energy Harvester Based on Vortices Created by a Bluff Body Placed Inside a Water Pipeline – Harshit Shukla, Abdul A. Khan, Kalyan R. Piratla |

Construction and Rehabilitation

| 534504 | Assessment Protocols for Polymer Sprays on Concrete Maintenance Holes – Ian Moore, Neil Hoult, Jane Peter, Joshua Trentl |
| 533099 | Geopolymer: What is it and How is it Best Used for Infrastructure Rehabilitation – Steve Henning, Mohamed Gamaal |
| 535664 | Impact of Microtunnel Boring Machine Advance Rate for Pipeline Construction Projects – Saeed Janbaz, Ramtin Sarajiannejad, Mohammad Najafi, Seyyedmohammadseagh Jalaleldiny Korky, Mohammaderza Malek Mohammadi |
| 535629 | Risk Analysis for Pipeline Installation By Horizontal Directional Drilling – Amir Tabesh, Mohammad Najafi, Zahra Kohnakan, Mohammaderza Malek Mohammadi, Farzad Farah |
| 535687 | Adding Additional Reinforcement to Improve the Structural Performance of Spray Applied Pipe Lining – Zahra Kohnakan, Amin Darabnoush Tehrani, Jeffrey Syar, Mohammad Najafi, Norman Edward Kampbell |
| 534157 | Buckling of Thin-Walled High Density Polyethylene Liners Encased in Rigid Pipes Under External Pressure and Thermal Effects – Zhaocao Li, Junxing Zheng, Quan Sun, Hantao He |
| 535610 | Comparison of Environmental Impacts of Steel and Concrete Pressure Pipes – Seyyedmohammadseagh Jalaleldiny Korky, Vasudeva Kaushik, Mohammad Najafi |

Multidiscipline

| 535506 | GIS Web-Based Water Pipeline Data Visualization for Decision Support – Jayraj H. Patel, Sunil K. Sinha |
| 536031 | Numerical Study on Impact of Excavations on Lifeline Facilities – Seddigheh Hasanpour Estabbanati, Reza Boushehri, Abbas Soroush, Omid Ghasemi-Fare |
### TECHNICAL PROGRAM – MONDAY, JULY 22

**10:00 a.m.–11:30 a.m. – Concurrent Technical Sessions**

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<td>DARREN DUNKER</td>
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<tr>
<td>535284 – Development of a Prescriptive Approach for Water Main Seismic Design Guidelines</td>
<td>Speaker(s): William Heubach, Michael McReynolds, Sri Rajah</td>
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<tr>
<td>535609 – Finite Element Analysis of Steel Lap Welded Joint Behavior Under Severe Seismic Loading Conditions</td>
<td>Speaker(s): Gregory Sarvanis, Giannoula Chatzopoulou, Spyros Karamanos, Dimitris Fappas, Gregory Lucier, Brent Keil, Richard Mielke</td>
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<tr>
<td>535709 – Axial Connection Force Capacity Required for Buried Permanent Ground Displacement</td>
<td>Speaker(s): Brad Wham, Craig Davis, Sri Rajah</td>
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<tr>
<td>SESSION B1</td>
<td>ROUTING</td>
<td>MICHAEL FLEURY</td>
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<tr>
<td>533870 – Managing a Multitude of Large Diameter Pipeline Route Alternatives in an Urban Area</td>
<td>Speaker(s): Grant Gartrell, Timothy Kuhns, Kerilyn Paris, Philip Ryan, Jason Matteo</td>
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<tr>
<td>535580 – Threading the Needle: Routing a Large Diameter Sewer Main through a Densely Urbanized Corridor</td>
<td>Speaker(s): Rosa Valdez, Jacqueline McMahon, David Bennett</td>
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<tr>
<td>534829 – Challenges with Designing a Potable Water Transmission Pipeline across the Navajo Reservation</td>
<td>Speaker(s): Hubert Quintana, Hilda Castillo Smith, Ryan Gladden</td>
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<td>PIPELINE MANAGEMENT</td>
<td>SUSAN DONNALLY</td>
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<td>535094 – Condition Assessment of Two 21-foot Diameter Flexible Steel Pipelines, a Case Study at the Central Arizona Project</td>
<td>Speaker(s): Jim Geibshub, Jennifer Jia, Jessica Torrey, Stephanie Prochaska</td>
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<td>534765 - Apples to Apples: Break History and Performance of Modern Water Pipe in a Mid-size Utility</td>
<td>Speaker(s): Jim O’Dowd</td>
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<tr>
<td>535570 - Changing Gears: Pipe Management</td>
<td>Speaker(s): Todd King, Jody Caldwell, Bryan Wood, Susan Donnally</td>
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<td>LARGE DIAMETER</td>
<td>MIKE LARSEN</td>
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<tr>
<td>531791 – Challenges and Lessons Learned of Commissioning Large Diameter Watermains</td>
<td>Speaker(s): Eric Wildschut, Bill Turner</td>
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<tr>
<td>535467 – Avoiding Tunnel Vision in Large Diameter Sewer Rehabilitation</td>
<td>Speaker(s): Robert Bell, Pubudu Ranasinghe, Getachew Melsew</td>
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<tr>
<td>535423 – Condition Assessment and Repair Prioritization of a Large Diameter Pipeline System</td>
<td>Speaker(s): Andrew Williams, Kristen Peterson, Peter Nardini, Rasko Odjovic</td>
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<td>WILLIAM BRICK</td>
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<td>Speaker(s): Samuel Ariaratnam, Xueleng Yan, Baosong Ma</td>
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<td>533810 – Meeting Challenges with Trenchless Technology</td>
<td>Speaker(s): Catherine Morley</td>
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<td>535383 – Over 5 Miles of Horizontal Directional Drills of Sanitary Force Main in Largo, FL</td>
<td>Speaker(s): Benjamin Turnage, Todd Bosso, Dave Hunniford</td>
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<td>536170 – Technology Breakthrough: OCSD Implements FRP for Extended Run of 84-inch RCP</td>
<td>Speaker(s): Victoria Pilko, Vicki Francis, Anna Pridmore, Gary Skipper, Ari Elden, Dan Bruce, Mark Geraghty</td>
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<td>535925 – Narragansett Bay Commission Rehabilitation of Large Diameter Brick Sewer with Geopolymer Mortar</td>
<td>Speaker(s): Scott Naiva, Meg Goulet, James Fleming</td>
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<td>535161 – Pushing the Envelope: Rehabilitation of Non-Circular Sewers up to 2.7 m (9”) High with Reinforced Cured in Place Pipe</td>
<td>Speaker(s): Adam Braun, Chris Macey, Nathan Kehler, Stacy Cournoyer</td>
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<td>535110 – Sequoia Aqueduct RCCP Hot Tap</td>
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<td>535363 – Getting Water to PortMiami in Time For Mega Cruise Ship Arrivals</td>
<td>Speaker(s): Ken Caban, Janine Alexander, Jose Cueto, Annalise Mannix</td>
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<td>535677 – How Cost Effectiveness is Machine Learning/Al Applied to Leak Detection and Pipe Replacement Prioritization?</td>
<td>Speaker(s): Greg Baird, Lars Stenstedt, Takashi Kato</td>
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<td>MATT GAUGHAN</td>
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<td>535631 – CSO Control in the Derby City</td>
<td>Speaker(s): Kyle Novak, Kelley Florence, Jacob Mathis</td>
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<td>537214 – Success of the Rain-Derived Inflow and Infiltration Program in Portland, OR</td>
<td>Speaker(s): Tammy Cleys, Ian Besaw, David Collins, Henry Young</td>
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<tr>
<td>535507 – Powering Pipeline Monitoring Sensors Using Locally Available Energy</td>
<td>Speaker(s): Kalyan Piratla, Harshit Shukla</td>
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11:30 a.m.–1:00 p.m. Exhibit Hall Lunch
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### TRACK A: Planning & Design 1
- **SESSION A2**
  - **OPTIMIZATION**
  - **AHMAD HABIBIAN**
  - 535005 – Optimization of Pump Parameters for Repowering an Existing Pipeline with Uncertain Evolution of Equivalent Roughness
  - **Speaker(s):** Maximilliano M. Sánchez, Maximiliano A. Oportus
  - 535021 – Optimizing Chemical Root Control in a Mid-size Utility
  - **Speaker(s):** Jim O’Dowd
  - 535675 – Optimal Operational Control of Water Pipeline Systems Using Real-Time Scheduling Framework
  - **Speaker(s):** Kalyan R. Piratla, Abdulrahman Mahmoud

### TRACK B: Planning & Design 2
- **SESSION B2**
  - **TRENCHLESS**
  - **CHRISTINE ELLERBERGER**
  - 535228 – Challenging 72-inch Duel Pipe Relocations Through Nob Hill for San Diego County Water Authority
  - **Speaker(s):** Robert Card, Brent Fountain
  - 534137 – Cera-Lok: A Restrained Joint Pipe System for Trenchless Applications
  - **Speaker(s):** Rowena Patenaude
  - 535591 – Tunneling the Largest Water Line for the City of Houston
  - **Speaker(s):** Michael Salinas, Michael Luga, Venus Price, Kevin Tran

### TRACK C: Condition Assessment 1
- **SESSION C2**
  - **TUNNELS AND PENSTOCKS**
  - **MURAT ENGINDENIZ**
  - 533088 – Toronto Water’s Island WTP: Intake Fouling Assessment and Mussel Cleaning via Design-Build Swabbing & Piggging Operation
  - **Speaker(s):** Niall Robertson
  - 535071 – Multi-sensor Inspection Technology: Better Data, Better Decisions
  - **Speaker(s):** Csaba Ékes
  - 533697 – Pardee Tunnel Inspection and Condition Assessment
  - **Speaker(s):** Raffi Moughamian, Marshall McLeod

### TRACK D: Condition Assessment 2
- **SESSION D2**
  - **PCCP**
  - **ALI ALAVINASAB**
  - 525151 – Going Full Circle: The Comprehensive Condition Assessment of 35-Year-Old Steel-Lined PCCP
  - **Speaker(s):** Martin Coghill, Chris Garrett
  - 535696 – Assessment and Repair of Coastal Water Authority’s 60-inch PCCP Pipeline along Independence Parkway
  - **Speaker(s):** Gregory Henry, Greg Olinger
  - 535556 – Breathing 20-Years of Life into Expired PCCP Segments – How a Regional Medical Center Was Able to Save Their Pipeline
  - **Speaker(s):** Amber Wagner, Brian Winberger

### TRACK E: Construction & Rehabilitation 1
- **SESSION E2**
  - **PLANNING**
  - **MUHAMMAD MUDASSAR**
  - 534077 – 2-Layer Polyethylene Extruded Factory Applied Pipe Corrosion Coating
  - **Speaker(s):** Samuel Thomas, Dennis Dechant
  - 533313 – To Buy or Not to Buy: Deciding Whether to Pre-Purchase Pipe
  - **Speaker(s):** Eric Engelskirchen, Scott Maughn, David Burkhart
  - 535566 – Sanitary Conveyance and Treatment Improvements: Western Regional: Progressive Design-Build Project
  - **Speaker(s):** Larry Gaddis, Clint Wilson, Renee Miller, Galen Mahoney

### TRACK F: Construction & Rehabilitation 2
- **SESSION F2**
  - **TRENCHLESS**
  - **BRENT HAUSER**
  - 529483 – DC Water New Jersey B Street 10 to 18 Foot Diameter Trunk Sewer Rehabilitation with Geopolymer During Live Dry Weather Flow
  - **Speaker(s):** Scott Naiva, Steve Bian, Tim Bako
  - 534785 – Analysis of Microtunnel Data Confirms Geostrata for a Curved Microtunnel in the City of Branford
  - **Speaker(s):** Troy Bauman, Matthew Welch, Paul Headland
  - 532440 – Tunnels Under Howard County - Construction of 36-inch Bar Wrapped Water Transmission Main
  - **Speaker(s):** Paul DiMarco, Chelsea Pearce, Louis Ragazzino

### TRACK G: UES
- **SESSION G2**
  - **SEISMIC – SOIL PIPE INTERACTION**
  - **RICH MIELKE**
  - 535659 – Strain Demands on Buried Pipelines from Earthquake-Induced Ground Movements
  - **Speaker(s):** Craig Davis, Sri Rajah, Brad Wham, Bill Heubach
  - **Speaker(s):** LaVere Merritt, Kevin Enfinger

### TRACK H: Multidiscipline
- **SESSION H2**
  - **THE WHOLE PICTURE**
  - **JEFF BLAKELY**
  - 53510 – Water Pipeline Infrastructure Systems Understanding for Performance Analysis
  - **Anmol Vishwakarma, Sunil Sinha**
  - 534452 – DCWATER At Work: Optimal Risk Management of Construction Close to Buried Linear Assets
  - **Steve Bian, Brian McDermott**
  - 535272 – 72-Inch Wastewater Point Repair Rehabilitation in Dallas, Texas
  - **Marty Paris, Ashlyn Morgan**

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2:30 p.m.–4:00 p.m. – Networking Break in Exhibit Hall
### TECHNICAL PROGRAM – MONDAY, JULY 22

#### 4:00 p.m.–5:30 p.m. – Concurrent Technical Sessions

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### SESSION A3
PIE MATERIALS
FELIPE PULIDO

- **535697 – Scarborough Trunk Watermain: Design Challenges and Pipe Material Selection**
  - **Speaker(s):** Muhammad Mudassar, Alberto Segura, Neville Morrison, Mahtab Tavana
  - **Abstract:** A Case Study of a Failed Welded Joint

- **535592 – A Case Study of a Failed Welded Joint**
  - **Speaker(s):** Charles Herckis

### SESSION B3
AERIAL CROSSING
ROBERT WALKER

- **535336 – Bridging the Gap: Galveston Causeway 8,500 LF Aerial Water Line**
  - **Speaker(s):** Jared Barber, James Johnson, Alan Hutson, Daniel Christodoss

- **535698 – Crossing That Bridge Later: Installing a Critical Water Pipeline Over an Existing Bridge Without Modifications**
  - **Speaker(s):** William Brick, Yousra Tilden

- **535512 – Early Environmental Planning for Pipeline Projects can Save a Lot of Green**
  - **Speaker(s):** Christine Ellenberger, Grant Mysterly, Scott Trigg

### SESSION C3
OPPORTUNISTIC INSPECTION AND CONDITION ASSESSMENT
BERK USLU

- **534063 – Opportunistic Watermain Inspection and Sampling Protocol**
  - **Speaker(s):** Muht Tavvez, Michael Zantingh, Patrick Maskwa, Mohamed Abdi

- **535146 – The Question of Lining Performance: An Innovative Approach to In-Service Non-Invasive Pipeline Condition Assessment**
  - **Speaker(s):** Frank Tironi, Jr., Kevin Hickey, Sean Lammers

- **535317 – Which Pipe First? Using Evidence-Based Condition Assessment and Desktop Modelling to Optimize Pipe Replacement**
  - **Speaker(s):** Nimart Gill, Jay Shah

### TRACK E
Construction & Rehabilitation 1
Duane Strayer

### SESSION E3
REHAB
SCOTT CHRISTENSEN

- **534161 – Mitigation of Issues Raised During Construction of Trunk Sewer Rehabilitation Project**
  - **Speaker(s):** Chris Martire, Muhammad Mudassar, Birju Shah

- **533647 – Cast Iron Pipe Rehabilitation with CFRP and CIPP in a Nuclear Power Generating Station**
  - **Speaker(s):** Tomas Jimenez, Amber Wagner

- **534817 – Silt-Proofing Intake Structures as a Practical Approach to Water Supply Sustainability**
  - **Speaker(s):** Dan Keithline

### TRACK F
Construction & Rehabilitation 2
Jerry Snead

### SESSION F3
PCCP
SHELLY HATTAN

- **535712 – Mitigating the Risk of Failure During Construction Live Loading on PCCP**
  - **Speaker(s):** Ali Alavinasab, Masood Hajali, Ashkan Khalili, Hamid Goorkani

- **535476 – Performance of CFRP-Lined PCCP with Continuing Wire Breakage**
  - **Speaker(s):** Michael Gipsov, Murat Engindeniz, Rasko Ojdrovic

- **535714 – Investigate the Long-Term Performance of a Carbon Fiber Reinforced Polymer Under External Live Loading**
  - **Speaker(s):** Ali Alavinasab, Masood Hajali

### SESSION G3
ASSET MANAGEMENT – WHERE ARE THEY NOW?
NICHOLAS AUGUSTUS

- **535501 – 20-Year Anniversary of Tucson Water’s Pipeline Protection Program (PPP)**
  - **Speaker(s):** Brit Klein, Paul Acosta

- **535245 – Collection and Compilation of Water Pipeline Field Performance Data**
  - **Speaker(s):** Sunil Sinha

- **535249 – How AI/Machine Learning and a GIS CMMS Can Meet Performance Based GASB 34 (Modified Approach) Accounting Compliance for Water Pies**
  - **Speaker(s):** Gregory Baird, Doug Hatler, Takashi Kato

### TRACK G
UES
Matthew Duffy

### SESSION H3
KEEPING NASHVILLE’SPIPES
IN TUNE
STEVE PUDLO

- **535650 – Nashville’s Largest Water Line Project From Concept to Service in 24 Months**
  - **Speaker(s):** Jeffrey Seal, Cyrus Toosi, J. Dale Mosley

- **535041 – Clean Water Nashville: System Renewal through Rehabilitation and Replacement**
  - **Speaker(s):** Kimberly Martin, Ron Taylor

- **532815 – Pipe Manufacturers’ Role in Design/Build Pipeline Projects**
  - **Speaker(s):** Henry Bardakjian

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Register Now! Visit [www.pipelinesconference.org](http://www.pipelinesconference.org) | 11
### TECHNICAL PROGRAM – TUESDAY, JULY 23

8:00 a.m.–9:00 a.m. – Continental Breakfast in Exhibit Hall
9:00 a.m.–10:30 a.m. – Concurrent Technical Sessions

#### TRACK A
Planning & Design 1
Felipe Pulido

#### SESSION A4
PLASTIC PIPE
NATHAN BOYD

- 536273 – Investigation of AWWA C900 Temperature Coefficients/Thermal Derating Factors of Current-Vintage PVC Pipe
  **Speaker(s):** Steve Ferry, Tom Marti
- 535154 – Experimental Performance Evaluation of Hazard-Resilient Plastic Pipe
  **Speaker(s):** Brad Wham, Blake Berger, Thomas O’Rourke
- 532913 – Design of CIPP Pressure Liners Using the HDB Method
  **Speaker(s):** Mark Knight, Kay Awe, Ahmed Abdel-Aal, Richard Baxter, George Bontus

#### TRACK B
Planning & Design 2
Jeffrey Shoaf

#### SESSION B4
LIFE CYCLE
JEFFREY SHOAF

- 535340 – Remaining Life Analysis for Wastewater and Force Main Pipes for Long Term Life Cycle Cost Decision Support
  **Speaker(s):** Berk Uslu, Sunil Sinha, Walter Graf

### TRACK C
Condition Assessment 1
Robert McMullin

#### SESSION C4
ASSET MANAGEMENT

- 534985 – Executing an Asset Management Plan for Large Diameter PCCP
  **Speaker(s):** Erin McKenna-Streyle, Jorge Rodriguez

### TRACK D
Condition Assessment 2
Mark Poppe

#### SESSION D4
SANITARY PIPELINES
SHAQING GE

- 535529 – Jim Creek Siphon Expansion Joint Evaluation
  **Speaker(s):** Jonathan Fischer, Laura Dennis, Antonio Flori
- 535323 – South Florida Aging Infrastructure: Force Main Condition Assessment and Renewal
  **Speaker(s):** Jennifer Baldwin, Jerme Griffin, Walt Schwarz, Rudy Fernandez, Daniel Buonadonna

### TRACK E
Construction & Rehabilitation 1
Duane Strayer

#### SESSION E4
REGIONAL
ROBERT CARD

- 535729 – Challenges Associated with the Construction of a 40 mile Regional Water Transmission Pipeline and the Associated Pump Station Facility
  **Speaker(s):** Jennifer Harrison, Kimberly Chanslor, Alan Rhames
- 535133 – A New Regional Wastewater System: 16 Communities $325M, & 90 Miles of Forcemain
  **Speaker(s):** Stephen Weninger, Pervez Sunderani

### TRACK F
Construction & Rehabilitation 2
Jerry Sneed

#### SESSION F4
RESEARCH IN REHABILITATION
GEORGE BONTUS

- 535686 – A Review of New Findings and Trends from North American Water Main Break Studies
  **Speaker(s):** Steven Folkman, Gregory Baird
- 535590 – Review of Literature on Chemical Emissions and Worker Exposures Associated with Cured-In-Place Pipe (CIPP) Installation
  **Speaker(s):** Vinayak Kaushal, Mohammad Najafi, Melanie Sattler, Kevin Schug

### TRACK G
UES
Matthew Duffy

#### SESSION G4
SUE - WARNING UTILITIES AHEAD!
JONATHAN SHIRK

- 535334 – Integration of New Technologies During a SUE Investigation for a Large LRT Project
  **Speaker(s):** Jamir Bradburn, Ophir Wainer, Lawrence Arcand
- 532641 – SUE Not Just for Linear Infrastructure Projects
  **Speaker(s):** Ophir Wainer, Daniel Jarvie

### TRACK H
Multidiscipline
Kyle Couture

#### SESSION H4
DIVERSITY IN ENGINEERING
ANNA PRIDMORE

- 535552 – Soil-Pipe Interaction Characterization for Seismically-Induced Longitudinal Permanent Ground Displacements
  **Speaker(s):** Sri Rajah, Craig Davis, Brad Wham

### PANEL DISCUSSION

- 535552 – Soil-Pipe Interaction Characterization for Seismically-Induced Longitudinal Permanent Ground Displacements
  **Speaker(s):** Sri Rajah, Craig Davis, Brad Wham

10:30 a.m.–11:30 a.m. – Networking Break in Exhibit Hall
11:30 a.m.–1:00 p.m. – Awards Luncheon
1:15 p.m.–1:45 p.m. – Bechtel Lecture
1:15 p.m.–1:45 p.m. – Surveying and Mapping Award Lecture
2:00 p.m.–3:30 p.m. – Concurrent Technical Sessions

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<td>RELIABILITY ASSESSMENT APPROACHES</td>
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<td>JAMES STEELE</td>
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3:30 p.m.–4:30 p.m. – Networking Break in Exhibit Hall

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### SESSION A6
**SEWERS**
SUSS SNOW
534742 – Utilizing Sewer Flow Monitoring and Depth Sensors in a Mid-size Utility
Speaker(s): Jim O’Dowd
534133 – Siphons Galore: Crossing under a Lake, a Hill, and a Highway: Designing Inverted Siphons for King County’s Mercer Enatai Project
Speaker(s): Benjamin Nelson, James Chae, Sibel Yildiz

### SESSION B6
**ROUTING**
JASON LUEKE
Speaker(s): Mike Gossett, Alexis Woodrow, Katie Angel
535450 – Route Selection Based on a Weighted Ranking Analysis
Speaker(s): George Triebel, Todd Crouthamel

### SESSION C6
**DESIGN CONSIDERATIONS**
DAVE CAUGHLIN
535216 – AWWA Standards and Manuals: A Guide for Proper Use and Reference When Writing Specifications
Speaker(s): John Bambei, John Plattsmier
534636 – That’s Confusing!!: Suggestions for Preparing Concise Design Guidelines for Pipeline Projects
Speaker(s): Roger Beieler

### SESSION D6
**CRITICAL WATER SUPPLY PIPELINES**
ROSS STANDIFER
535500 – Comprehensive Condition Assessment of a Critical Pipeline
Speaker(s): Bryan Livingston, Cary Duchene, Bill Malach
534604 – Condition Assessment of Portland (Oregon) Water Bureau’s Three Primary Supply Mains
Speaker(s): Jeremiah Hess

### SESSION E6
**CONSTRUCTION CASE STUDY**
ANDREW COSTA
542548 – Dig Indy Tunnel System Pleasant Run PR02-DV-1
Speaker(s): Jeff Glover, Maceo Lewis, Nick Maynard
535391 – Replacement of Raw Water Transmission Line with Fused Pipe System Provides Stable Water Supply to Historical Town
Speaker(s): Scott Hay, Alan Plumlee, Saul Hernandez, Shawn Garcia

### SESSION F6
**PIPE BURSTING**
ANDREW SPARKS
525649 – Pipe Bursting: How Big Can You Go?
Speaker(s): Roberto Saucedo
525200 – Pipe Bursting Success in a Developed Neighborhood
Speaker(s): Jeffrey Tarantino, Brian Martinez, Nelson Schlater

### SESSION G6
**CATHODIC PROTECTION – RUST ME!**
NEIL HARVEY
533294 – Using Cathodic Protection (CP) Retrofits to Extend Useful Water Main Life for Cast and Ductile Iron Mains
Speaker(s): Chris Macey, Matthew Coleman, James Davidson
535181 – A Study of Life Extension of Two Prestressed Concrete Cylinder Pipelines
Speaker(s): Mehdi Zarghamee, Courtney Jalbert, Jason Gehrig, Mohammadreza Gargari

### SESSION H6
**ETHICS**
TARA HOKE
ETHICS SESSION
This session reviews the ethical principles that guide professional engineers, and provides a sampling of real-life case studies that illustrate the importance of honoring ethical principles in the practice of engineering.
## TECHNICAL PROGRAM – WEDNESDAY, JULY 23

7:30 a.m.–8:00 a.m. – Continental Breakfast

**8:00 a.m.–9:30 a.m. – Concurrent Technical Sessions**

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Roberts McMullin

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### PANEL DISCUSSION
535268 – Applying Risk Management Principles and Innovative Technologies to Effectively Manage Water Infrastructure

Speaker(s): Sunil Sinha, Ahmad Habibian, Devan Thomas, Matt Carter, Jian Zhang

9:30 a.m.–10:00 a.m. – Networking Break

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10:00 a.m.–11:30 a.m. – Concurrent Technical Sessions

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| PANEL DISCUSSION | 535663 – Unified Approach to Thrust Restraint Design |
| Speaker(s): Stephen Shumaker, Sri Rajah, Henry Bardakjian, Randall Conner, Martin McCabe |
HOTEL INFORMATION

THE OFFICIAL CONFERENCE HOTEL
Renaissance Nashville Hotel
611 Commerce St, Nashville, TN 37203
Phone: 615-255-8400

Surround yourself with the rhythm of Music City at Renaissance Nashville Hotel. Situated in downtown Nashville, the newly renovated Renaissance hotel is an upscale haven in one of the country’s most vibrant travel destinations.

Our conference session space depends on your patronage of this official conference hotel. Because of our contractual agreements with this hotel and because we strongly believe that staying at this designated conference hotel is an important part of your conference experience, conference organizers recommend this hotel exclusively.

HOTEL RATES AND RESERVATIONS
The contracted rates are currently available!

Group Rates: Single, Double or Triple: $229 plus 16.6% tax

Reserve your room and receive the group rate by June 26, 2019 based on availability.

There are a limited number of Government rates for government employees only. Credentials are required upon check-in with the hotel front desk.

PARKING

Renaissance Nashville Hotel Parking
For valet parking turn right onto Commerce St. and pull into the front driveway on the right hand side. Valet parking includes in/out privileges (611 Commerce Street). Valet parking fee: 40 USD daily.

Local Downtown Nashville Pay Parking Lots
For self-parking, continue on 7th Avenue through Commerce Street and turn right into the Library parking garage, directly across the street from our hotel (no in/out privileges). Off-site parking fee: 14 USD daily.

If you do have a car, most downtown Nashville hotels provide parking for their guests but it can be quite expensive. Public garages throughout Nashville cost much less. Visit the Park it! Downtown website for locations and costs.

TRAVEL INFORMATION

AIRPORT
Nashville International Airport – BNA
615-275-1675
Hotel direction: 8.2 miles NW
This hotel does not provide shuttle service.

GROUND TRANSPORTATION
Jarmon Transportation
615-275-0146
One way and round trips available ($14.00–$25.00)
Reservation required 24 hours in advance of your flight.

Nashville MTA
http://www.nashvillemta.org

The Nashville MTA offers bus service between the Nashville airport and downtown Nashville. The Route 18 Airport/Elm Hill Pike bus leaves hourly from the Nashville airport between 7 a.m. and 10 p.m. from the ground transportation area. Visit Nashville MTA’s website for drop-off locations.

Gray Line Nashville Airport Express
https://graylinetn.com/rentals-v1/shuttle-by-gray-line

Gray Line Nashville Airport Express also offers shuttles to downtown Nashville and West End Nashville hotels from 4:00 a.m.–11:00 p.m., departing every 15 minutes.

Taxis
Taxis are a flat fee of $25.00 with $1.00 charge for additional passengers.

Rental Cars
Budget: 615-366-0807 • Enterprise: 615-275-1675
Hertz: 615-748-1394 • National Car Rental: 844-370-2403

INTERNATIONAL TRAVEL

The first step to traveling to the U.S. is to determine if you need a Visa or if you are eligible for the Visa Waiver Program (VWP). Travelers from VWP countries must have valid Electronic System for Travel Authorization (ESTA) approval before travel.

If you need a visa, you will need to apply for the right kind of visitor visa. It is normally a B1* visa: Attend a scientific, educational, professional, or business convention or conference for a business visit.

*Please check current visa categories and requirements with the U.S. State Department.

Visa visitors must have a machine-readable passport and schedule an in-person interview with the U.S. State Department consulate or embassy. The application process varies by location. Please contact your local consulate for the most accurate information.

It can take up to four months to get an interview date. Please contact your nearest consulate as soon as possible to request an interview date.

GENERAL INFORMATION

CANCELLATION

If your visa application is denied, please inform ASCE in writing that you wish to cancel your registration. You have to attach a copy of your visa denial.

A full refund will be issued if the cancellation notice is received by the registration refund deadline of June 25, 2019. No refunds will be made for cancellation requests received after that date. Send cancellation requests to registrations@asce.org or fax to +1 (866) 902-5593.

Please file your visa paperwork as far in advance as possible to be eligible for a refund.

ASCE cannot intervene on behalf of the invitees with the Government of the U.S. by fax, phone, surface mail, or email.

Register Now! Visit www.pipelinesconference.org | 17
GENERAL INFORMATION

**LETTER OF INVITATION**
Registration must be completed and paid in full before a Letter of Invitation may be requested. A copy of your registration payment receipt must accompany your request.

Please be ready to provide your complete official name, date of birth, physical address, email address, and passport number (if available). The Letter of Invitation will ONLY be sent by email to the email address that you provide.

**CITY INFORMATION**
https://www.visitmusiccity.com

**ADA COMPLIANCE**
The Renaissance Nashville Hotel is fully accessible to the disabled. If you require special assistance at the conference, please submit a written description of your requirements with your registration form or email registrations@asce.org before Wednesday, June 27. While ASCE will make every effort to meet the needs of the disabled, accommodations cannot be guaranteed without prior notification.

**ASCE BOOKSTORE**
ASCE will operate its popular bookstore at the Pipelines 2019 Conference during registration hours. The bookstore is a great opportunity to browse through the many new and classic titles on display covering all topics in civil engineering.

**ATTIRE**
The dress code for the Conference is business casual (i.e., slacks, casual dresses) to business attire (i.e., neckties, business suits). Meeting room temperatures will vary, so wear layered clothing to ensure your personal comfort. We also recommend attendees wear comfortable shoes. Please note that certain events may have specific details on attire, and you should refer to the description of that event for more information.

**BADGE POLICY AND RIBBONS**
Your name badge is your admission to the Conference. Please wear your badge at all times while in the Sheraton Centre. Tickets are required for the pre-conference workshops, meals, and special events. Where tickets are required, please be sure to bring your tickets with you to each event as you will not be admitted without a ticket. Ribbons will be available at the Registration desk. ASCE recommends you remove your badge when leaving the conference hotel.

**CONFERENCE PROCEEDINGS**
This year, the conference proceedings will be available ONLINE only. One copy is included with each full registration. To access your copy, please exchange your Proceedings ticket that comes with your badge and all other tickets to receive the Proceedings Retrieval Information Card. The registration desk will issue the cards on Tuesday, July 23rd starting at 2pm.

To purchase a copy after the conference, call ASCE at [800] 548-ASCE (2723), send a fax to (703) 295-6211, or order online at www.asce.org/publications.

**MEETING ROOM OVERCROWDING**
ASCE will make every effort to schedule popular events in rooms large enough to accommodate anticipated attendance. Since many events are extremely popular, it is wise to select alternative events as you plan your conference schedule. ASCE and the conference hotel are REQUIRED to follow local fire regulations and may ask participants in rooms filled to capacity to choose another event.

**NO SMOKING POLICY**
ASCE supports a “No Smoking” policy. Smoking is prohibited in the Nashville Renaissance Hotel, and all venues hosting ASCE events.

**POST-CONFERENCE EVALUATION**
In addition to daily surveys, an electronic evaluation will be sent out immediately after the Conference to all attendees.

**PROFESSIONAL DEVELOPMENT HOURS (PDHS)**
You may earn PDHs, which are nationally recognized units of record, by attending conference technical sessions and short courses. Please note there are differences from state to state in continuing education requirements for professional engineering licensure. ASCE follows NCEES guidelines on continuing professional competency. Get details on your state’s requirements by going to www.ncees.org/about.

Within 30 days of the end of the conference, the session information will be uploaded into the MyLearning system. You will receive an email from the conference registration system with a link and detailed instructions on how to access MyLearning and to update your session attendance. By accessing the MyLearning system for this conference, you automatically Agree and Certify you attended the selected sessions. The system will remain open for 30 days from the receipt of the registration email to allow you time to make any adjustments and print your certificate and transcript. After that 30-day mark, you will need to contact ASCE Customer Service at registrations@asce.org or (800) 548-2723 to modify your conference attendance information.

Included with your welcome packet, you will receive a badge with your name and a bar code specific to your registration. Before you enter the room for a Pre-Conference Workshop or a Technical Session, you must scan your bar code in order to receive credit. The scanner will acknowledge a successful recording of your name for the specific session. We strongly recommend you scan your badge at the beginning of each session to eliminate any challenges and/or lines later.

Please note that the only way to receive PDH credits is if you scan the bar code located on the back of your conference badge at the start of each session.

**RECORDING OF SESSIONS**
Video or audio recording of any educational session is strictly prohibited without prior written permission from both ASCE and the session presenter(s).
GENERAL INFORMATION

RELEASE/WAIVER/SPECIAL ASSISTANCE

Photograph Release: By submitting the registration form, I hereby release any photographs that may be incidentally taken of me during these events by ASCE to be used for any purpose.

Liability Waiver: In submitting this registration, I acknowledge and agree that I am undertaking to participate in the Conference activities as my own voluntary and intentional act. I agree that I alone am responsible for determining whether I am physically capable of participating in any Conference activity, and I understand that there is risk associated with my participation, which may include without limitation, injury or loss caused by my own negligence or the negligence of others. With knowledge and acceptance of the risks involved, I accept full responsibility for my own safety and well-being. In consideration of my participation in Conference activities, I hereby waive, release, hold harmless, and discharge ASCE and its officers, directors, and employees from any and all loss or injury that may be suffered by me in connection with Conference activities to the fullest extent permitted by law.

ADA Compliance: The Renaissance Nashville is fully accessible to the disabled. If you require special assistance at the conference, please submit a written description of your requirements with your registration form or email registrations@asce.org before June 26, 2019. While ASCE will make every effort to meet the needs of the disabled, accommodations cannot be guaranteed without prior notification.

EXHIBIT HOURS

<table>
<thead>
<tr>
<th>SATURDAY, JULY 20</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Decorator Move-in</td>
<td>9:00 a.m.–5:00 p.m.</td>
</tr>
<tr>
<td>SUNDAY, JULY 21</td>
<td></td>
</tr>
<tr>
<td>Exhibitor Move-in</td>
<td>8:00 a.m.–4:00 p.m.</td>
</tr>
<tr>
<td>Welcome Reception</td>
<td>5:30 p.m.–7:00 p.m.</td>
</tr>
<tr>
<td>MONDAY, JULY 22</td>
<td></td>
</tr>
<tr>
<td>Exhibit Hours</td>
<td>9:00 a.m.–4:00 p.m.</td>
</tr>
<tr>
<td>Morning Networking Break</td>
<td>9:00 a.m.–10:00 a.m.</td>
</tr>
<tr>
<td>Lunch</td>
<td>11:30 a.m.–1:00 p.m.</td>
</tr>
<tr>
<td>Afternoon Networking Break</td>
<td>2:30 p.m.–4:00 p.m.</td>
</tr>
<tr>
<td>TUESDAY, JULY 23</td>
<td></td>
</tr>
<tr>
<td>Exhibit Hours</td>
<td>8:30 a.m.–4:30 p.m.</td>
</tr>
<tr>
<td>Continental Breakfast</td>
<td>8:00 a.m.–9:00 a.m.</td>
</tr>
<tr>
<td>Morning Networking Break</td>
<td>10:30 a.m.–11:30 a.m.</td>
</tr>
<tr>
<td>Afternoon Networking Break</td>
<td>3:30 p.m.–4:30 p.m.</td>
</tr>
<tr>
<td>Move-Out Hours</td>
<td>4:30 p.m.–8:30 p.m.</td>
</tr>
</tbody>
</table>

REGISTRATION INFORMATION

RECEIVE MEMBER RATES

Not a member of ASCE or UESI? Join today and save on your Pipelines 2019 Conference registration. Simply visit www.asce.org/join and choose UESI as your preferred institute or call 800-548-ASCE (2723) to request an application and/or register for the conference. For more information on member benefits, go to www.asce.org/membership. NOTE: You must be a member in good standing to qualify for the member rates.

EARLY BIRD REGISTRATION DISCOUNT (EB)

Don’t miss out! Register early and receive the best savings. The deadline for Early Bird registration is Wednesday, June 5, 2019. Registration online or by forms, must include complete payment and be RECEIVED by this date to qualify for the Early Bird registration discount.

ADVANCE REGISTRATION DISCOUNT (ADV)

ASCE invites registrants to take advantage of an advance registration discount. The deadline for advance registration is Wednesday, June 25, 2019. Registration online or by forms, must include complete payment information, and must be RECEIVED by this date to qualify for the advance registration discount.

ON-SITE REGISTRATION (ONS)

Please do not mail registration forms through the U.S. Postal Service AFTER Saturday, June 15, 2019 in order to ensure your registration is processed by the Tuesday, June 25, 2019 deadline. After this date, registrations must be secured with a credit card. If you are paying by credit card, please register online or download the PDF registration form and submit it onsite along with your full credit card payment.

CONFORMATION OF REGISTRATION

Confirmation will be e-mailed to all Early Bird and Advance registrants within one week of registering for the conference. Online registrants should receive immediate notification following submission of the registration information. Preregistered attendees will receive their name badges and any tickets ordered at the on-site ASCE Registration Desk during Registration hours.

If you do not receive confirmation within one week, please contact ASCE registration at 800-548-2723 and ask to speak with Customer Service, or e-mail registrations@asce.org. Please reference Pipelines 2019 Conference in the subject line.

ON-SITE REGISTRATION HOURS

(Subject to change)

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturday, July 20</td>
<td>7:00 a.m.–5:00 p.m.</td>
</tr>
<tr>
<td>Sunday, July 21</td>
<td>7:00 a.m.–6:30 p.m.</td>
</tr>
<tr>
<td>Monday, July 22</td>
<td>7:00 a.m.–4:30 p.m.</td>
</tr>
<tr>
<td>Tuesday, July 23</td>
<td>7:00 a.m.–6:00 p.m.</td>
</tr>
<tr>
<td>Wednesday, July 24</td>
<td>7:00 a.m.–1:00 p.m.</td>
</tr>
</tbody>
</table>
SPECIAL NOTES FOR 2019

The Author/Speaker Registration Deadline is February 21, 2019. If you are a U.S. Public Sector Scholarship winner, please call 800-548-2723 when you are ready to register or send the filled-out paper registration form (PDF) to registrations@asce.org or fax to 1-866-902-5593 along with proof of acceptance to receive your complimentary conference registration.

US Government/municipal employees who will not be part of the Public Sector Scholarship program are still eligible for our regular discount as reflected above. To register with the discount, please call 800-548-2723 or submit paper registration form to registrations@asce.org or fax to 1-866-902-5593.

State university employees are not eligible for the Government Rate. You MUST be a US government/municipal employee to be eligible for this discount and be prepared to show a valid government ID on-site at the registration desk when you pick up your name badge.

Full-time Student must present a valid ID/document on-site at registration desk when picking up name badge.

If you are a Student Scholarship winner, please call 800-548-2723 when you are ready to register or send the filled-out paper registration form (PDF) to registrations@asce.org or fax to 1-866-902-5593 along with proof of acceptance to receive your complimentary conference registration.

Students who will not be part of the Student Scholarship program are still eligible for our regular discount as reflected above. You can register with the discount on line or submit paper registration form to registrations@asce.org or fax to 1-866-902-5593.

NEW THIS YEAR

If you are a Younger Member attending this program for the first time, please call customer service at 800-548-2723 to receive a special $250.00 discount off your full member registration.

If you are a Retired Member, please call customer service at 800-548-2723 to receive a special $460.00 discount off full member registration.

PROGRAM AND SESSION CANCELLATION

ASCE reserves the right to cancel programs and/or sessions because of low registration. In the unlikely event of a cancellation, all registrants will be notified and will receive a full refund, if applicable. Programs and Sessions are subject to change, and ASCE reserves the right to substitute a program, session, and/or speaker of equal caliber to fulfill the educational requirements.

PAYMENT INFORMATION

Acceptable forms of payment include:
- CHECK: payable to Pipelines 2019 Conference (In U.S. dollars, drawn on a U.S. bank – you must include attendee’s name in the memo area of the check)
- CREDIT CARD: VISA, MasterCard, American Express, Diners Club, and Discover
- PURCHASE ORDER: P.O. #, company name & address or other billing address (This includes Government P.O. use) – a copy of this P.O. must be submitted to Customer Service when you register

Mail registrations to: Pipelines 2019 Conference, P.O. Box 79668, Baltimore, MD 21279-0668. OR you may register online. Full payment MUST accompany all registration forms. Forms will not be processed without payment or copy of purchase order.

CANCELLATIONS/REFUNDS

Cancellations must be received by ASCE in writing. A refund will be issued, minus a $65 processing fee, if the cancellation notice is received by ASCE by June 25, 2019. No refunds will be made for cancellations received after June 27, 2018. Send cancellations to registrations@asce.org or fax to (866) 902-5593.

ASCE cannot refund registration fees after this registration cut-off date due to an individual’s inability to obtain a visa, so please file your international travel paperwork as far in advance as possible in order to be eligible for a refund prior to the registration cut-off date.
as of January 16, 2019

**PLATINUM**

[Structural Technologies]

A Structural Group Company

**GOLD**

[Garney Construction]

[Northwest Pipe Company]

[American]

**SILVER**

[Jacobs]

[HDR]

[carollo]

[Accumark]

[AirX Utility Surveyors, Inc]

[American Cast Iron Pipe]

[AECOM]

[AECOM]

[Berntsen]

[Cardno]

[Cartegraph]

[CityWorks]

[CobbFendley]

[COWI]

[HBK Engineering]

[HDR]

[Innovyze]

[IT Pipes]

[Lucity]

**BRONZE**

[NASSCO]

[NV5]

[Plastic Pipe Institute]

[Pure Technologies]

[Structural Technologies]

[Utility Mapping Services Inc.]

**UESI ORGANIZATIONAL MEMBERS**

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AirX Utility Surveyors, Inc
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AECOM
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Cardno
Cartegraph
CityWorks
CobbFendley
COWI
HBK Engineering
HDR
Innovyze
IT Pipes
Lucity
Multiview Locates Inc.
NASSCO
NV5
Plastic Pipe Institute
Pure Technologies
Structural Technologies
Utility Mapping Services Inc.

**COOPERATING ORGANIZATIONS**

Benjamin Media
Infrastructure Resources
Pipeline Industries Guild
Pipeline Technology Journal
xyHt

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Advance Products & Systems, Inc. is a leading manufacturer and distributor of water and wastewater pipeline products. APS is dedicated to manufacturing quality pipeline products that provide their customers with confidence in knowing they have a dependable product backed by 37 years of industry-leading excellence.

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Aegion combines innovative technologies with market-leading expertise to maintain, rehabilitate and strengthen infrastructure around the world. Insituform, Fibrwrap, Underground Solutions and United Pipelines provide solutions to rehabilitate aging infrastructure, primarily pipelines in the wastewater, water, energy, mining and refining industries.

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Established in 1973, Akkerman develops, manufactures and supports quality pipe jacking and tunneling equipment that accurately installs a variety of underground infrastructure.

AMERICAN  
www.american-usa.com  
AMERICAN Cast Iron Pipe Company is a manufacturer of ductile iron pipe, spiral-welded steel pipe, fire hydrants and valves for the waterworks industry.

AQUAM PIPE DIAGNOSTICS  
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Aquam Pipe Diagnostics provide inspection technologies and services for condition assessment, asset management, leak detection and CCTV of pressurized water wastewater and industrial pipelines.

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www.ballardmc.com  
Ballard Marine Construction is a specialty marine and underwater contractor providing turnkey infrastructure solutions worldwide for the energy, industrial, infrastructure, and maritime industries.

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Blacoh Surge Control provides customized system-wide engineered solutions with our system modeling, proof of design, and large pressure vessels used in surge protection, pressure regulation, storage and pump control.

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CjGeo is a specialty contractor performing pipe abandonment and annular space grouting with low density cellular concrete.

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EBAA Iron is the North American leader in water and waste-water pipeline joint technology, including joint restraint and flexible and or expansion joints.

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Garney Construction is a 100% employee-owned company with 55 years of experience in constructing water and sewer pipelines and treatment facilities, serving the public, private, and industrial markets.

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www.graniteconstruction.com/our-brands  
Granite Inliner is one of the nation’s leading pipeline rehabilitation contractors specializing in Cured-In-Place Pipe (CIPP), UV Cured CIPP, manhole renewal and lateral lining.

HOBAS PIPE USA  
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HOBAS pipe is suitable for virtually every installation method of new construction and rehab. Key applications are sanitary, storm sewers, other corrosive environments and potable water.

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LifeLast, a formulator and manufacturer of high quality, 100% solids, polyurethane linings and coatings, is the preferred choice in water/wastewater transmission and hydroelectric penstocks. “Innovation Through Formulation.”

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www.infrastructure.milliken.com  
Milliken Infrastructure provides trenchless solutions, including GeoSpray® geopolymer, PipeWrap, and Concrete Cloth™ GCCM, making it easier and more cost effective to repair and protect pipes and related structures.
THE PLASTICS PIPE INSTITUTE, INC.
www.plasticpipe.org
The Plastics Pipe Institute (PPI) is the major trade association representing the Municipal and Industrial Division and high-performance PE4710 for water, wastewater, trenchless and open cut construction.

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www.puretechltd.com
Pure Technologies is a world leader in the development and application of innovative technologies for inspection, monitoring and management of pipeline infrastructure.

RAEDELINGER PRIMUS LINE INC.
www.primusline.com
Primus Line is the manufacturer of a unique system for trenchless pressure pipe rehabilitation. PRIMUS LINE® products enable the cost effective trenchless rehabilitation of pressure pipelines for different media, such as water, oil and gas.

SIMPSON GUMPertz & HEGER INC
www.sgh.com
SGH is a national engineering firm with more than 25 years’ experience in condition assessment, structural evaluation, failure risk analysis, failure investigation, and repair of pipelines.

SAK CONSTRUCTION
www.sakcon.com
SAK delivers and installs the most advanced, field-proven products to solve your most challenging pipe rehabilitation and large-diameter tunneling boring needs.

STRUCTURAL TECHNOLOGIES
www.structuraleotechnologies.com
Structural Technologies, a Structural Group company, develops and integrates specialized products with engineering services to improve, protect and enhance water and wastewater pipelines. Our unique product systems provide structural strengthening for the restoration or renewal of concrete, metallic and polymer-based large diameter pipelines. Our repair options include state-of-the-art materials which provide engineered value through short construction windows with little to no disruption to traffic patterns or operations. Product systems include:

- V-Wrap™ Carbon Fiber – trenchless, fully structural, internally applied composite utilized for 30-inch diameter and above concrete, metallic and polymer-based pipelines
- StrongPIPE® Hybrid/FRP – trenchless, fully structural, internally applied hybrid system for extended runs of 42-inch diameter and above concrete and metallic pipelines
- XPT™ External Post-Tensioning – semi-structural, externally applied tendon repair system for 48-inches diameter and above prestressed concrete cylinder pipe (PCCP)

TEAM
www.teaminc.com
TEAM™ is the leading provider of specialized industrial solutions aimed at minimizing costly downtime and maximizing equipment performance using unique inspection, heat treating, maintenance, repair, and asset integrity management services.

TT TECHNOLOGIES INC
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TT Technologies is a leading manufacturer of trenchless technology equipment for pipeline installation with Pipe Rammers, HDD Assist/Extraction equipment, Pipe Bursting and Pipe Cracking Systems.

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www.uni-bell.org
To promote the use of longer-life, lower-maintenance, corrosion-proof PVC piping materials for real sustainability, strength and long-term asset management in water and wastewater systems.

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Val-Matic® Valve & Mfg. Corp. is a leading manufacturer of check valves, quarter turn shut-off valves and air valves for water/wastewater, industrial and building markets. Valve types include Tilted Disc®, Dual Disc®, Swing-Flex®, Surgebuster®, Silent Check Valves, Eccentric Plug Valves, AWWA Butterfly Valves, Air Valves, Foot Valves, VaultSafe® products, Ener-G® AWWA Rubber Seated Ball Valves, Smart Control Systems, and QuadroSphere® Trunnion-Mounted Ball Valves.

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VicuS is the leading producer of mechanical pipe joining solutions. We build technologies and provide engineering services that address the most complex piping challenges faced by engineers, site owners, contractors and distributors. Engineered with confidence, our solutions put people to work faster, while increasing safety, ensuring reliability and maximizing efficiency.

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www.vortexcompanies.com
The Vortex Companies is a turnkey trenchless solution provider serving the water, sewer and industrial marketplace. Vortex offerings include CCTV inspection, turnkey bypass, pipe bursting, large diameter structural pipe relining, advanced sewer repair materials, trenchless robotic systems, and pipe and drain tools.
Please answer these questions so that we may serve you better (*Indicates Required Information):

*First Name _____________________________ *Last Name _____________________________

*Credential _____________________________ *Badge Nickname _____________________________

*Company/Organization/University _____________________________

*Street Address/PO Box _____________________________

*City _____________________________ *State _____________________________ *Postal Code _____________________________ *Country _____________________________

*Work Phone _____________________________ Home Phone _____________________________ *Cell Phone _____________________________

Fax _____________________________ *E-mail _____________________________

ASCE/Member Number _____________________________

Please answer these questions so that we may serve you better (*Indicates Required Information):

*1 The organization I work for is: ☐ Private ☐ Government ☐ Education ☐ Military ☐ Other

*2 My position is: ☐ Partner/Principal ☐ Senior Manager ☐ Middle Manager ☐ Technical/Professional Manager ☐ Faculty ☐ Student ☐ Retiree

*3 How many previous ASCE Conferences have you attended? 0 ☐ 1 ☐ 2 ☐ 3 or more

*4 My age group: ☐ Under 25 ☐ 25-34 ☐ 35-49 ☐ 50-65 ☐ Over 65

*Check here if you require: ☐ Vegetarian ☐ Lacto-Vegetarian ☐ Ovo-Vegetarian ☐ Vegan ☐ Gluten Free ☐ Other:

*Check here if you have allergies to the following: ☐ Peanuts ☐ Tree Nuts ☐ Seafood ☐ Other:

*Check here if you require specific aids or services: ☐ Deaf or Hearing Impaired ☐ Blind or Visually Impaired ☐ Wheelchair User ☐ Other:

PAYMENT: Full payment must accompany this registration form. Cancellations are subject to a $65 fee. No REFUNDS granted for cancellations after June 25, 2019.

Full Registration $______________ ☐ CHECK (Payable to ASCE Pipelines 2019 Conference. Checks must be issued in U.S. dollars, drawn on U.S. banks.) To pay registration fee by check, postmark your registration by the deadlines indicated above and mail to: ASCE Pipelines 2019 Conference PO Box 79668 Baltimore, MD 21279-0668 USA

CREDIT CARD ☐ AMEX ☐ VISA ☐ MC ☐ DISC ☐ DINERS
Card Number ________________ Security Code ________________
Expiration Date (MM/YY) ________________
Cardholder Name _____________________________

Signature _____________________________

Total to be Charged $______________

JOIN ASCE/UESI TODAY AND SAVE
Simply visit www.asce.org/join or call 800-548-2723 to request an application

Register by June 5, 2019 and Save!

For complete Conference information and to register online, visit www.pipelinesconference.org

For additional information please contact Customer Service at registrations@asce.org or call (800) 548-2723.