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### SCHEDULE AT A GLANCE

#### MONDAY, AUGUST 10

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>11:00 a.m.–2:00 p.m.</td>
<td>Pre-Conference Workshop: Seismic Design of Buried Water and Wastewater Pipelines</td>
</tr>
<tr>
<td>2:00 p.m.–3:00 p.m.</td>
<td>Break</td>
</tr>
<tr>
<td>3:00 p.m.–6:00 p.m.</td>
<td>Pre-Conference Workshop: Thrust Restraint Design of Buried Pipelines</td>
</tr>
</tbody>
</table>

#### TUESDAY, AUGUST 11

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>10:00 a.m.–10:30 a.m.</td>
<td>Welcome to the UESI Pipelines 2020 Virtual Conference</td>
</tr>
<tr>
<td>10:00 a.m.–4:30 p.m.</td>
<td>Exhibit Hall Open</td>
</tr>
<tr>
<td>10:30 a.m.–11:30 a.m.</td>
<td>Concurrent Technical Sessions</td>
</tr>
<tr>
<td>11:30 a.m.–12:30 p.m.</td>
<td>Networking Break</td>
</tr>
<tr>
<td>12:30 p.m.–1:30 p.m.</td>
<td>Concurrent Technical Sessions</td>
</tr>
<tr>
<td>1:30 p.m.–2:30 p.m.</td>
<td>Networking Break</td>
</tr>
<tr>
<td>2:30 p.m.–3:30 p.m.</td>
<td>Concurrent Technical Sessions</td>
</tr>
<tr>
<td>3:30 p.m.–4:30 p.m.</td>
<td>Virtual Social Hour</td>
</tr>
</tbody>
</table>

#### WEDNESDAY, AUGUST 12

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>10:00 a.m.–11:00 a.m.</td>
<td>Concurrent Technical Sessions</td>
</tr>
<tr>
<td>10:00 a.m.–4:00 p.m.</td>
<td>Exhibit Hall Open</td>
</tr>
<tr>
<td>11:00 a.m.–12:00 p.m.</td>
<td>Networking Break</td>
</tr>
<tr>
<td>12:00 p.m.–1:00 p.m.</td>
<td>Keynote: Peter Lake and Bechtel Lecture</td>
</tr>
<tr>
<td>1:00 p.m.–2:00 p.m.</td>
<td>Concurrent Technical Sessions</td>
</tr>
<tr>
<td>2:00 p.m.–3:00 p.m.</td>
<td>Networking Break</td>
</tr>
<tr>
<td>3:00 p.m.–4:00 p.m.</td>
<td>Concurrent Technical Sessions</td>
</tr>
</tbody>
</table>

#### THURSDAY, AUGUST 13

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>10:00 a.m.–11:00 a.m.</td>
<td>Concurrent Technical Sessions</td>
</tr>
<tr>
<td>10:00 a.m.–4:00 p.m.</td>
<td>Exhibit Hall Open</td>
</tr>
<tr>
<td>11:00 a.m.–12:00 p.m.</td>
<td>Networking Break</td>
</tr>
<tr>
<td>12:00 p.m.–12:30 p.m.</td>
<td>Keynote: Melissa Marshall</td>
</tr>
<tr>
<td>12:30 p.m.–1:30 p.m.</td>
<td>Concurrent Technical Sessions</td>
</tr>
<tr>
<td>1:30 p.m.–2:30 p.m.</td>
<td>Networking Break</td>
</tr>
<tr>
<td>2:30 p.m.–3:00 p.m.</td>
<td>Poster Competition Winners &amp; Conference Raffle Prizes</td>
</tr>
<tr>
<td>3:00 p.m.–4:00 p.m.</td>
<td>Concurrent Technical Sessions</td>
</tr>
</tbody>
</table>
Welcome to the 2020 UESI Pipelines Conference
A Virtual Experience!

Our last Pipelines Conference in 2019 took place in Nashville, the capital of country music. This year we had to make the difficult decision to translate the program into a virtual setting to ensure the health and safety of all participants.

This conference has always provided a great forum for pipeline and utility practitioners to meet to exchange ideas, share knowledge, learn from each other, and swap stories. As always, we have an outstanding lineup of technical sessions, panel discussions, and two pre-conference workshops.

We extend our gratitude to the many volunteers who have spent a lot of time preparing and recording a content-driven conference that will maximize benefits to participants via a different approach adapted to what the current climate allows.

We have created new and different ways for people to interact with one another as well as with vendors and sponsors in our virtual tri-dimensional exhibit floor and networking zoom rooms. We would like to thank all of our vendors and partners who are continuing to support this program. We would not be able to do it without you.

Let’s embrace this unique opportunity to learn and network and make the best of it!

Please, stay safe and we will see each other soon!

Lynn E. Osborn, P.E., FASCE
UESI President 2020
Owner, LEO Consulting, LLC

Eny Pipelines 2020 and this virtual delivery.

Enjoy Pipelines 2020 and this virtual delivery.

Lynn E. Osborn, P.E., FASCE
UESI President 2020
Owner, LEO Consulting, LLC

Conference Co-Chairs
Jim Geisbush, P.E., P.M.P., FASCE
Sr. Civil Engineer, Central Arizona Project
Juan D. Gomez, Ph.D., P.E.
Director, San Antonio Water System

Technical Program Co-Chairs
J. Felipe Pulido, P.E., M.ASCE
Senior Project Manager, OBG Part of Ramboll
Mark Poppe, P.E., M.ASCE,
Principal Engineer, Brown and Caldwell

Advisors to Technical Co-Chairs
Jeffrey W. Heidrick, P.E., ENV SP, M.ASCE
Associate Project Manager, Water, Burns & McDonnell
Mark S. Mihm, P.E., ENV SP, CDT, M.ASCE
Professional Associate, Water/Wastewater, Senior Project Manager, HDR

Exhibits Chair
Shah Rahman, MBA, M.ASCE,
Practice Leader, KCI Technologies

Publicity & Media Coordinators
Robert Carpenter, AIF, M.ASCE
Oildom Publishing
Mike Kezdi
Associate Editor, Trenchless Technology and North American Oil & Gas Pipelines

ASCE Pipelines Division
ExCom Liaison
Anna Pridmore, Ph.D., P.E., M.ASCE
Vice President, Pipeline Solutions, Structural Technologies

International Coordinator
Sandra Rolfe-Dickinson, CEng, P.Eng.
Technical Director, Pipetechnics Ltd.

Education Co-chairs
Renee Mayer, P.E., M.ASCE,
Transportation Utility Program Manager, HDR Engineering, Inc.
Erin McGuire, P.E., M.ASCE
CDM Smith
ASCE is developing a new manual of practice (MOP) on the subject of seismic design of buried water/wastewater pipelines, with an eventual objective of developing a design standard for the seismic design of buried pipelines. Proposed draft of the MOP is scheduled to be completed in 2020. In this workshop, members of the task committee will present the organization and key technical components of the new MOP to keep the engineering community informed of the upcoming practice improvements and provide opportunities for the workshop attendees to offer feedback and participate in the ensuing technical discussions.

**Objective:** To present a review of the organization and key contents of the upcoming new MOP on seismic design of buried water & wastewater pipelines.

**Registration Fee:** $45

**Number of PDHs:** 3 hrs

### MONDAY, AUGUST 10

#### SEISMIC DESIGN OF BURIED WATER & WASTEWATER PIPELINES

11:00 a.m.–2:00 p.m.

**Lead:** Sri Rajah, PhD, P.E., G.E., S.E., P. Eng., FASCE – Principal Engineer, CDM Smith

**Speakers:** Craig Davis, Ph.D., P.E., G.E. – Water System Resilience Program Manager and Seismic Manager, Los Angeles Department of Water & Power; Brad P. Wham, Ph.D. – Research Assistant Professor, University of Colorado Boulder; Roberts McMullin, P.E., M ASCE – Senior Civil Engineer, East Bay Municipal Utility District (EBMUD); Dr. Spyros Karamanos, Ph.D., M ASCE – Professor of Structural Mechanics University of Thessaly; Mike McReynolds, P.E., S.E., M ASCE – Senior Engineer, Engineering, Brown and Caldwell; Bob Walker, P.E., Life M.AVWA, Life M ASCE, MSCE, MPA – Vice President, Technical Development & Standards, Aegion|Underground Solutions; Michael Dadik, P.E., M ASCE, Principal Structural Engineer, Carollo Engineers

#### THRUST RERAINT DESIGN OF BURIED PIPELINES

3:00 p.m.–6:00 p.m.

**Lead:** Stephen Shumaker, P.E., M ASCE, BCEE – Senior Civil Engineer, CDM Smith

**Moderator:** Sri Rajah, PhD, P.E., G.E., S.E., P. Eng., FASCE – Principal Engineer, CDM Smith

**Speakers:** Henry Bardakjian, P.E., M ASCE – Consulting Engineer; Keith Bushdiecker P.E. – Sr. Water/Wastewater Engineer, HDR; William Whidden, P.E., M ASCE – Project Manager/Senior Engineer, Woolpert; Allen Cox, P.E., MASCE – Envision SP, Regional Director Ductile Iron Pipe Research Association; Bill Brick, PE, MASCE, – Senior Project Manager CDM Smith

This workshop presents the upcoming ASCE’s Manual of Practice on Thrust Restraint Design of Buried Pipelines. This MOP presents a unified approach to thrust restraint design for all pipe materials, developed based on pipe-soil interaction principles to improve current practice. Speakers from the task committee will present an overview of the MOP, including: thrust restraint fundamentals, historical development of thrust restraint design practices, geotechnical parameters and soil-pipe interaction, an improved approach to thrust block design, analytical models for continuous and segmented pipelines, and simplified approach for restrained joint pipelines. Special considerations required for common thrust restraint design and construction issues will also be presented.

**Objectives:**

- Present the manual of practice for thrust restraint design of buried pipelines
- Provide an introduction to the fundamentals of thrust restraint design along with a summary of historical development leading to current practices
- Discuss geotechnical parameters and soil-pipe interaction, including: Contribution of frictional resistance; Soil parameters for assessing axial behavior of restrained pipelines; Contribution of Passive Earth Pressure Resistance; Soil parameters for assessing transverse behavior of restrained pipelines
- Present an improved approach for the design of thrust blocks in buried pipelines
- Discuss material-specific considerations for thrust restraint design for steel, concrete, ductile iron, PVC, polyethylene, and fiberglass pipe materials
- Present detailed analytical models for bends in continuous and segmented buried pipelines
- Present a simplified unified empirical approach to restrained joint design for bends in buried pipelines
- Discuss the extension of the design approach from bends to other sources of thrust, such as tees, valves, reducers, dead ends, and multiple fittings
- Discuss special design considerations for common thrust restraint design and construction pitfalls
- Present practical thrust restraint design examples. (Participants are encouraged to bring their own calculators to fully participate in these design exercises)

**Registration Fee:** $45

**Number of PDHs:** 3 hrs

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**POSTER VIEWING IN EXHIBIT HALL**

**TUESDAY 10:00 A.M.–THURSDAY 2:00 P.M.**

**New this year: Poster Competition** – Posters will be judged by a panel of members based on the significance and rigor of the science, clarity of presentation, and other factors.
SPECIAL EVENTS

TUESDAY, AUGUST 11

WELCOME
10:00 a.m.–10:30 a.m.

Join us for the introductory event of the Pipelines 2020 Conference! Start the morning with a welcome from Thomas W. Smith, III, ENV SP, CAE, F.ASCE, Executive Director, American Society of Civil Engineers, and Jean-Louis Briaud, Ph.D., P.E., D.GE, Dist.M.ASCE, ASCE President 2020, followed by UESI Pipelines 2020 Conference Co-Chairs: Jim Geisbush, P.E., P.M.P., F.ASCE, Sr. Civil Engineer, Central Arizona Project; and Juan D. Gomez, Ph.D., P.E., Director, San Antonio Water System.

The UESI 2020 president Lynn E. Osborn, P.E., F.ASCE will talk about the institute activities this year, followed by Anna Pridmore, Ph.D., P.E., M.ASCE, Vice President, Pipeline Solutions, Structural Technologies, who will close with a few words on behalf of the Pipelines Executive Committee.

Jean-Louis Briaud, Ph.D., P.E., D.GE, Dist.M.ASCE, ASCE President 2021

Jean-Louis Briaud, Ph.D., P.E., D.GE, Dist.M.ASCE, is a distinguished professor of civil engineering and director of the National Geotechnical Experimentation Site at Texas A&M University. He is also holder of the Spencer J. Buchanan chair at Texas A&M University’s Zachry Department of Civil Engineering.

Briaud recently completed a three-year term on the ASCE board of direction and previously served as president of the Geo-Institute. He was also president of the Federation of International Geo-Engineering Societies. In 2014, Briaud was recognized as a Distinguished Member of ASCE.

Briaud started his career four decades ago as an assistant professor at Texas A&M University. He has also worked as a consultant on numerous projects, including highway embankments, oil tanks, dams, bridges, levees, shallow and deep foundations and soil erosion. He is a licensed professional engineer in Texas.

Additionally, he has written two books, “Geotechnical Engineering” and “The Pressuremeter”, and published about 300 articles and reports. He has received the Ralph Peck Award from ASCE, the CGS Geoffrey Meyerhof Foundation Engineering Award from Canada and the Honorable Aitalyev Medal from Kazakhstan. Jean-Louis will talk about some of ASCE’s recent initiatives and why every civil engineer should be a member.

EXHIBIT HALL OPEN
10:00 a.m.–4:30 p.m.

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

NETWORKING BREAK
11:30 a.m.–12:30 p.m.

CONCURRENT TECHNICAL SESSIONS
12:30 p.m.–1:30 p.m.

NETWORKING BREAK
1:30 p.m.–2:30 p.m.

CONCURRENT TECHNICAL SESSIONS
2:30 p.m.–3:30 p.m.

VIRTUAL SOCIAL HOUR
3:30 p.m.–4:30 p.m.

Visit any or all of the listed zoom rooms:

Wellness Room
Join Johanna Dahlman, the Founder of Local Latin, an international events firm dedicated to the Health & Wellness industry, for a brief address about staying healthy while working from home and stress management in the current climate.

Stop and Chat Room
Have you missed your peers? This is an open dialogue room for you to say hello and catch up with your friends in an informal session.

Game Room hosted by Sherlock’s Escapes
Who is Agent X, Masked Vigilante and freelancer for Sherlock’s Escape Detective Agency? That’s what you’ll need to find out in order to collect the very generous 7-figure reward. Luckily, you have figured out where their secret lair is located! Now unmasking this crime fighter is as simple as taking that rickety, old elevator down to his lair and revealing their identity. Or is it?

Are you ready to dive right into this world of vigilantes and villains to unravel their secrets and mysteries?

Trivia Room
Join our MC, Mr. Bob Anderson of ASCE, for a fun Civil Engineering trivia game. The participant/s with the most correct answers will win an Amazon gift card.

POSTER VIEWING IN EXHIBIT HALL
TUESDAY 10:00 A.M.–THURSDAY 2:00 P.M.

New this year: Poster Competition – Posters will be judged by a panel of members based on the significance and rigor of the science, clarity of presentation, and other factors.
Keynote Speaker: Peter Lake

Peter Lake has served as a Board member of the Texas Water Development Board since December 15, 2015. Governor Greg Abbott designated him Chairman in February 2018.

Lake has held a variety of financial roles across a number of industries. Previously, he acted as director of research and head of automated trading at Gambit Trading, a member firm of the Chicago Board of Trade and the Chicago Mercantile Exchange. In this capacity, he led the firm’s market research initiatives and directed the development of its first automated trading programs. As one of the firm’s proprietary market makers, he also traded interest-rate derivatives, primarily focusing on U.S. Treasury bond futures.

He has also served as director of business development for Lake Ronel Oil Company, where he focused on financial analysis of upstream oil and gas opportunities. In addition, he served as director of special operations for VantageCap Partners. In this position he played a key role in the due diligence, valuation, and transactional aspects of the operations for VantageCap Partners. In this position he played a key role in the due diligence, valuation, and transactional aspects of the operations for VantageCap Partners.

Lake graduated with a bachelor of arts in public policy with a specialization in economics from the University of Chicago, and he earned a master's of business administration from Stanford University's Graduate School of Business.

Lake was born and raised in Tyler, Texas. Lake’s term will expire February 1, 2021.

Presentation Topic:
Defeating Drought & Fighting Flood – Texas Takes on the Future

“Texas is a land of perennial drought interrupted by the occasional devastating flood.” – Isaac Cline (Texas State Meteorologist, 1927). Texas has always dealt with highly variable weather, but unlike 90 years ago, the state’s growing population of 30 million people must weather the storms to ensure the world’s 10th largest economy by GDP keeps rolling. Learn how the TVDDB fulfills its mandate to secure future water supply and mitigate flood risk through a comprehensive model integrating science, planning, and financing.

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

2020 Stephen D. Bechtel Pipeline Engineering Award

Established by the ASCE Board of Direction in 1970, this award recognizes outstanding achievements in pipeline engineering. The Bechtel Foundation donated funds to support the award in honor of contributions made by Stephen D. Bechtel. The award is made annually to an ASCE member who has made a significant contribution to the advancement of pipeline engineering in research, planning, design, or construction. The 2020 Bechtel Award recipient is George Ruchti.

George Ruchti, M.ASCE

George F. Ruchti, Jr. has been selected as the recipient of the 2020 ASCE Stephen D. Bechtel Pipeline Engineering Award. With 55 years of hard work and leadership in the civil infrastructure industry, one of Mr. Ruchti’s most valuable contributions to the Pipelines industry has been his unique ability to educate owners, engineers, and contractors on the pipeline design and installation process in a manner that everyone could understand – success through simplicity.

This approach created major pipeline projects that could be implemented in the field with minimal complications. Through this focus on collaboration among all stakeholders early in the process, George has delivered superior pipeline design work, and helped to facilitate manufacturing and construction on many high-profile projects. His willingness and dedication – and taking the time necessary to ensure success throughout all aspects of the project – is what built George’s impeccable reputation in the Pipelines industry.

As a steward for the profession, George has many accomplishments across a full spectrum of the industry, including pipeline enhancements that were patented in the 1970’s and still utilized today. He blazed a trail for the adoption of the use of steel pipelines, leading to installation of hundreds of miles along the East Coast. His influence was extensive and included design, manufacturing, installation and long term protection.

ASCE Pipeline Division Award of Excellence

The ASCE Pipeline Division Award of Excellence was established in 1988 by the Pipeline Division. It is given to a Fellow, Member, or Associate Member of ASCE who is adjudged by the Executive Committee to have given outstanding continuous and conspicuous service to the profession, ASCE, and the Pipeline Division. This year’s recipient is Tennyson Muindi.

Tennyson Muindi, P.E., F.ASCE

Senior Associate, McMillen Jacobs Associates

Tennyson Muindi has 30 years of experience and has actively participated as project manager or project engineer in a wide range of geotechnical engineering projects. Mr. Muindi’s primary area of interest is in pipeline infrastructure and underground construction. His experience covers a broad range of service areas including planning, implementation, and reporting of geotechnical investigations; conceptual level planning and design studies; detailed design studies and preparation of contract documents.
Mr. Muindi is currently serving as the past Chair of UESI Pipelines Division EXCOM. He was the Conference Co-Chair of the 2018 Pipelines Conference held in Toronto, Canada. He has been actively involved with the ASCE Pipelines Division Technical Committee for Trenchless Installation of Pipelines (TIPS) since 2004 and served as its Chair from 2010 to 2016. While serving on TIPS, he was involved in the development of new MOPs and updating of existing MOPs that included HDD, Pipe Bursting and Auger Boring. During the period 2001 to 2010 he served as a member of the Transportation Research Board Committee on Soil Structure Interaction. He also served on the American Council of Engineering Companies/Massachusetts (ACEC/MA) as Chair/Co-Chair of Leadership Education Committee during the period 2003 through 2008.

A licensed professional engineer in Massachusetts, New York, Rhode Island and Virginia, he holds a bachelor’s degree in civil and environmental engineering from the University of Rhode Island, and a master’s degree in civil engineering from the University of Massachusetts at Amherst.

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

NETWORKING BREAK
2:00 p.m.–3:00 p.m.

CONCURRENT TECHNICAL SESSIONS
3:00 p.m.–4:00 p.m.

For over a decade, she’s traveled around the world to work with Fortune 100 corporations, institutions and universities, teaching the proven strategies she’s mastered through her consulting work and during her time as a faculty member at Penn State University. Melissa is the go-to expert that places like NASA, the American Heart Association, Pfizer, and Harvard Medical School consult when they need to present their world-changing research.

In 2019, Microsoft recognized Melissa’s work in dramatically changing the way technical professionals use PowerPoint to present their science by naming her a Microsoft MVP or Most Valuable Professional.

Presentation Topic: Talk Nerdy to Me: Strategies for Successful Technical Communication

Have you ever tried to talk about a new technical project, only to be met with blank stares from your audience? Are you tired of the lifeless, text heavy, bullet-pointed slides that make up most presentations? Did you ever have a slam-dunk winner of a technical proposal go in front of a key stakeholder only to be rejected because they didn’t “get it”? Join our keynote speaker, scientific presentations expert Melissa Marshall, to learn some practical strategies to immediately transform your technical presentations! Go from blank stares to buy in with your next talk.

CONCURRENT TECHNICAL SESSIONS
12:30 p.m.–1:30 p.m.

NETWORKING BREAK
1:30 p.m.–2:30 p.m.

POSTER COMPETITION WINNERS, CONFERENCE RAFFLES AND INTRODUCTION TO UESI PIPELINES 2021 CONFERENCE
2:30 p.m.–3:00 p.m.

Harshit Shukla, S.M.ASCE, this year’s posters coordinator, will reveal the winners of the poster competition.

Shah Rahman, MBA, M.ASCE, Practice Leader, KCI Technologies, our exhibits chair, will present the lucky raffle winners.

Jason Lueke, Ph.D., M.ASCE, National Practice Leader, Trenchless, Associated Engineering, co-chair of the UESI Pipelines 2021 Conference will introduce next year’s destination!

CONCURRENT TECHNICAL SESSIONS
3:00 p.m.–4:00 p.m.

Keynote Speaker: Melissa Marshall

Melissa Marshall is the founder of Present Your Science, a consulting company that provides on-site group workshops, conference sessions, and 1:1 coaching. She is on a mission: to transform how scientists, engineers, and technical professionals present their work. That’s because she believes that even the best technical ideas are destined to remain undiscovered unless presented in a clear and compelling way that sparks innovation and drives adoption.

Melissa Marshall

Keynote: Talk Nerdy to Me: Strategies for Successful Technical Communication
THANK YOU TO OUR TECHNICAL COMMITTEE

Mark A. Poppe, P.E., M.ASCE, Technical Program Co-Chair | Juan Felipe Pulido, P.E., M.ASCE, Technical Program Co-Chair
Jeffery W. Heidrick, P.E., ENV SP, M.ASCE and Mark S. Mihm, P.E., ENV SP, M.ASCE, Advisors to the Technical Program Co-Chairs

We would like to thank the individuals who participated as part of the 2020 Technical Committee. Everyone worked as a team starting with abstract, paper and poster reviews and through 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!

Ahmed Al-Bayati
Becky Andrus
Michelle Antilla
Jennifer Baldwin
Juan Camilo Barrera
Adam Braun
Volodymyr Brazhenko
William Brick
James Bryan
Urso Campos
Robert Card
Dave Caughlin
Emily Cernic
Scott Christensen
Joseph Conti
Andrew Costa
Kyle Couture
Ralphord Crews
Amin Darabnoush Tehrani
Beatriz Dongell
Darren Dunker
Christine Ellenberger
Jeffrey Farnsworth
Michael Fleury
Amin Ganjidoost
Hadi Ganjidoost
Andre Garces
Alan Garri
Matt Gaughan
Shaoting Ge
Mark Geraghty
Alisa Gruber
Ahmad Habibian
Christopher Haecckler
Neil Harvey
Brent Hauser
Jim Herbert
Charles Herckis
Steve Hirai
Yafei Hu
Alan Hutson
Celine Hyer
Doug Jenkins
Shelbi Johnson
Khalid Kaddoura
Spyros Karamanos
Brent Keal
Josh Kercho
Zahra Kohankar
Kouchesefehani
Satish Kumar
Jonathan Lapsley
Mike Larsen
Mike Lehrburger
Guohua Li
Bryan Livingston
Sussanne Lockhart
Wendy Lundeen
Mohammadreza Malek
Mohammadi
Charles Marsh
Ram Mazumder
Renee Mayer
Benjamin McCray
Erin McGuire
Richard Mielke
Antonio Miglio
Babak Mohammad
Muhammad Mudassar
Adam Murdock
Jenny Naranjo
Peter Nardini
Sanjay Negi
Richard Nichols
Jaime Ordonez
Rowena Patenaude
Kalyan Piratla
Anna Pridmore
Shah Rahman
Adiyu Ramamurthy
Fatemehe Rezaeifar
Ad Shatat
Jonathan Shirk
Jeffrey Shofa
Harshil Shukla
Jeryy Snead
Andrew Sparks
Rosser Stander
Andy Stanton
Duane Strayer
Alan Swartz
Amir Tabesh
Jeni Tatuma
Berk Uslu
Bob Walker
Justin Waples
Andrew Williams
Scott Williams

POSTER PRESENTATIONS

Posters will be available for viewing from Tuesday 10:00 a.m.–Thursday 2:00 p.m.

New this year: Poster Competition – Attendees and a panel of expert judges will vote on their own choice of Best Poster!

720097 – A Component-Based Approach in Assessing Sewer Manholes – Khalid Kaddoura, Tarek Zayed

740055 – Stray Currents, Corrosive Soil and Wall Loss, Oh My! Harnessing Decision Intelligence and Inspection Technologies to Prevent Main Failures – Eric Toffin, James Stewart, John Lamica

742002 – Prediction of Pipe Failures in Wastewater Networks Using Random Forest Classification – Razieh{Tavakoli, Ali Sharifara, Mohammad Najafi

743502 – Field investigation of Metal Multi-Pipe Culvert under Shallow Cover – Husam H. Hussein, Issam Khoury, Shad M. Sargand, Fouad Al. Rikabi


744141 – How to Get From Point A-B – Cross-Country Alignment Saves $$ for Rural Water Transmission Line – Hunter B. Hanson

744757 – Leveraging Pressure-Monitoring Data for Water Pipeline Condition Assessment Using Neural Networks and Evolutionary Optimization Algorithms – Ahmad Momeni, Kalyan R. Piratla

744801 – Development of a Fuzzy Inference Performance Rating System for Drinking Water Pipelines Using a Comprehensive List of Input Variables – Hao Xu, Anmol Vishwakarma, Sunil K. Sinha

756002 – Decision-making for Pipe Rehabilitation in Water Pipe Networks Subject to Earthquakes Using Simulated Annealing – Abhijit Roy, Binaya Pudasaini, Mohsen Shahandashti

756004 – Jim Creek Siphon Rehabilitation – Greg Smith


756007 – Seismic Damage and Renewal Cost Analysis of Buried Water Pipelines: A Python-based Computational Framework – Ram Krishna Mazumder, Abdullahi M. Salman, Yue Li, Xiong Yu


756009 – Transmission or Distribution: A Matter of Semantics? Or is it Both? – Kyle H. Kaspar, Jason Kirby

756010 – Unveiling Actual System Pressures – Amy Marroquin, Calvin Durel
Pipeline Engineering – Resiliency in Infrastructure

CONCURRENT TECHNICAL SESSIONS

The UESI Pipelines 2020 Virtual Experience will occur during Eastern Daylight Time (EDT).

Tuesday, August 11, 10:30 am to 11:30 am

<table>
<thead>
<tr>
<th>TRACK A</th>
<th>TRACK B</th>
<th>TRACK C</th>
<th>TRACK D</th>
<th>TRACK E</th>
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**SESSION A1**
PIPE MATERIALS
SCOTT WILLIAMS
535184 – AWWA C305 – A New Standard for CFRP Renewal and Strengthening of PCCP
Speaker(s): Mehdi Zarghamee
535114 – Designing an Economical FRP System for Pipeline Rehabilitation
Speaker(s): Firat Sever, Mo Ehsani
534937 – Thin-Walled Synthetic Fiber Reinforced Concrete Pipe Performance Under Cyclic Loading
Speaker(s): Fouad Al Rikabi, Shad M. Sargand, Issam Khoury, John Kurzziel, Safiya Ahmed, Husam Hussein

**SESSION B1**
HORIZONTAL DIRECTIONAL DRILLING
JEFFREY SHOAF
524086 – 12-inch Water Line Horizontal Directional Drill across Hunting Bayou using Cartridge Method
Speaker(s): Christine Kirby, Eric Hernandez, Anh Hunter, Samson D’Silva
532037 – 24-inch Force Main by HDD for Dallas Water Utilities
Speaker(s): James Bryan, Marty Paris
744390 – Sliplining 120-Inch RCP Wastewater in Dallas, Part 2
Speaker(s): Marty Paris
744752 – CIPP for Tomorrow – What is Needed?
Speaker(s): Michael Gipso
535617 – Estimating Level of Service Interruption from Water Main Breaks as Consequence of Failure
Speaker(s): Asif Ahmed, MD, Azijuil Islam

**SESSION C1**
REHABILITATION AND WATER BREAKS
JONATHAN SHIRK
744390 – Sliplining 120-Inch RCP Wastewater in Dallas, Part 2
Speaker(s): Marty Paris
744752 – CIPP for Tomorrow – What is Needed?
Speaker(s): Michael Gipso
535617 – Estimating Level of Service Interruption from Water Main Breaks as Consequence of Failure
Speaker(s): Amin Ganjidoost, Karl Ivan San Luis, Craig M. Daly

**SESSION D1**
CRITICAL REHABILITATIONS
ALISA GRUBER
535316 – Rehabilitation of a Critical High-Pressure Transmission Main Underneath and in the Vicinity of a Major Highway
Speaker(s): Murat Engindeniz, Roman Obzeje, Sara Mathis, Kristen Peterson
535568 – A Modern Solution for an Old Problem – Utilizing both CIPP and CFRP for Aerial Pipeline Rehabilitation
Speaker(s): Tim Peterie, Amber Wagner
535577 – Thorny Details of the Rose Canyon Trunk Sewer Rehabilitation
Speaker(s): Casey Raines, Greg Watanabe

**SESSION E1**
MATERIALS AND RISKS
ALISA GRUBER
535483 – A 60-year History of the Efficacy of Polyethylene Encasement of an Iron Pipe Installation in an Aggressive Soil Environment
Speaker(s): Lewis Horn
535572 – Characterization of Graphene Reinforced Epoxy Coatings for Internal Surface of Oil and Gas Pipelines
Speaker(s): Zhibin Lin, Xingyu Wang, Xiaoning Qi, Dante Boccotti, Mingli Li
534305 – Detecting High Risk Zones Using a Spatial Clustering of Pipe Breaks
Speaker(s): Thomas Chen, Kate Zhao, Craig M. Daly

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www.pipelinesconference.org | 9
### TRACK A
Planning & Design
Rosser Standifer

**SESSION A2**
**PLANNING**
SCOTT WILLIAMS

- 534246 – Preparing for the Unexpected During Design and Construction
  **Speaker(s):** Sierra McCreary, Timothy Weaver
- 535385 – Balancing Present and Future Needs
  **Speaker(s):** Nathan Boyd, Thomas Dumm
- 535044 – Pojoaque Basin Regional Water System Modeling and Challenges
  **Speaker(s):** Julia Chivington-Buck, Eric Smith, Stephen Shumaker, Sri Rajah, Leonel Almanzar, Chris Ott, Juan Samaniego, Jerry Edwards, Fabian Montana, James Kim

### TRACK B
Trenchless
Jeffrey Shoaf

**SESSION B2**
**PANEL**
SUNIL SINHA

- 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

### TRACK C
Condition Assessment
Jonathan Shirk

**SESSION C2**
**FAILURE ANALYSIS**
SHAOQING GE

- 536199 – Does Acoustic Wave Propagation Detect Damage in Large Diameter Cast-Iron?
  **Speaker(s):** Ali Alavi, Marshall Kennedy, Cameron White
- 744185 – Uncertainty Quantification of the Structural Capacity of Pipelines Using Separation of Variables Methodology
  **Speaker(s):** Juan Jimenez-Chong, Omer Erbay, Frederic Grant, Peter Nardini, Murat Engindeniz
- 535620 – Shifting to a Monetized Quantitative Approach for Risk Analysis Using Property Damages
  **Speaker(s):** Amin Ganjidoost, Ivan San Luis, Craig M. Daly

### TRACK D
Construction and Rehab
Alisa Gruber/Rich Mielke

**SESSION D2**
**REHABBING METHODS AND EMERGENCIES**
ALISA GRUBER

- 535433 – A Novel Water Pipeline Asset Management Scheme Using Hydraulic Monitoring Data
  **Speaker(s):** Alya Alavi, Ahmad Habibian, Devan Thomas, Matt Carter, Jian Zhang
- 742403 – Line Stopping the City of Houston’s Large Diameter Transmission Line for Valve Replacement
  **Speaker(s):** Eric Hernandez, Gregory Henry, Singarpal Sachan
- 744034 – Successfully Navigating the Challenges of Emergency Interceptor Repair Under the Wall Street of Whiskey
  **Speaker(s):** David Hafner, Heather Dodds, Nick Ulliman, Michael McReynolds

### TRACK E
UES/Multidiscipline
Doug Jenkins/Jerry Snead

**SESSION E2**
**RISK MANAGEMENT – DECISIONS, DECISIONS**
JOE CONTI

- 525454 – Mains, Trains, and Automobiles: Utilizing Fort Worth’s Risk Assessment Data to Drive Sanitary Sewer Rehabilitation
  **Speaker(s):** Josh Kercho, Liam Conlon
- 743824 – Resilience of Sanitary and Combined Sewer Networks to Extreme Weather Events
  **Speaker(s):** Soroush Zamanian, Abdollah Shafeezadeh, Mehrzad Rahimi
- 743247 – Leveraging a Risk-Based Decision Strategy for Pipeline Management at the City of Houston
  **Speaker(s):** David Totman, Fazle Rabbi

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**Tuesday, August 11, 12:30 pm to 1:30 pm**

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**Pipeline Engineering – Resiliency in Infrastructure**

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[www.pipelinesconference.org](http://www.pipelinesconference.org)
Tuesday, August 11, 2:30 pm to 3:30 pm

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**SESSION A3 PANEL**

**SESSION B3 USE OF PILOT TUBES**

750185 – Nuclear Power Generation – Buried Piping Panel Discussion

**Session Speaker(s):** Mark Geraghty, Christopher Burton, David Smith

**SESSION C3 ASSESSMENTS AND LARGE DIAMETER PIPE**

742062 – Sewer Alignment Complexities in Historic Downtown Temecula

**Speaker(s):** Steve Friedman

736127 – Trenchless Soil Stabilization of Marl Prior to Using Pilot Tube Method to Install New Sanitary Sewer Line

**Speaker(s):** Stephen Matheny, Daniel DiLeggi, Ben Croy, Britt Babcock

743689 – Finding Big Leaks with Big Data: Case Studies from an Internet-of-Things Leak Detection Platform

**Speaker(s):** Matthew Barrett, Robert Welch, Zohreh Andalibi, Tatiana Baeva, Adam Chan

**SESSION D3 DECIDING WHAT TRENCHLESS IS RIGHT**

742050 – Decision Making Process for Identifying Optimum Trenchless Method for Corrugated Metal Pipe Rehabilitation in Stormwater

**Speaker(s):** George Schaaf, Michelle Antilla, Felipe Lopez, Johnny Partain

744264 – Dallas Water Utilities Proactive Assessment Program Conserves Water and Prevents Catastrophic Pipeline Failures

**Speaker(s):** George Schaaf, Michelle Antilla, Felipe Lopez, Johnny Partain

744264 – Dallas Water Utilities Proactive Assessment Program Conserves Water and Prevents Catastrophic Pipeline Failures

**Speaker(s):** George Schaaf, Michelle Antilla, Felipe Lopez, Johnny Partain

**SESSION E3 USING DRONES AND ALTERNATE METHODS**

744256 – Seeing from Above, What’s Below: How Drones can be used in Pipeline Design & Construction

**Speaker(s):** William Byland, Natasha Lombard, Michael Liga, Gregory Henry, Venus Price

744512 – A, B, C — 3D Merging the Above-Ground World With What is Below

**Speaker(s):** Joseph Murphy, Peter Borsack

744709 – Utility Coordination in Alternative Delivery Methods for Transportation Projects – Lessons Learned from In-Market Design Phase (Bid process)

**Speaker(s):** Juan Camilo Barrera, Tom Bodera
### TRACK A
Planning & Design  
Rosser Standifer  

**SESSION A4**  
MODELING AND INSPECTION  
ROSSER STANDIFER  

- **534866** – Utilizing District Metered Area Water Loss Analysis in a Mid-size Utility  
  Speaker(s): Jim O’Dowd  
- **534291** – Design of Sprayed Cementitious Liners Within Corrugated Steel Pipes  
  Speaker(s): Ian Moore  
- **534096** – One Liner to Rule Them All – King County Interbay 48-inch Sewer Forcemain Rehabilitation Story  
  Speaker(s): Matthew Tooley, Steve Lindsey, Raynold (Ray) Nickel, Jeffrey Schmidt

### TRACK B
Trenchless  
Jeffrey Shoaf  

**SESSION B4**  
UNDERGROUND BUT NOT FORGOTTEN  
KHALID KADDOURA  

- **744604** – “Underground, Under Where?” How Many Communities are Turning to Trenchless Applications to Solve Their Challenges  
  Speaker(s): Jason Swartz  
- **744648** – Case Study: Repurposing an Abandoned 3.2 Mile 66-inch RCP Gravity Sewer as a New Force Main  
  Speaker(s): Andy Stanton, Sandy Scott-Roberts, Richard ten Bosch  
- **741852** – Reducing Damages to Underground Infrastructure: Utility Locators’ Perspectives  
  Speaker(s): Ahmed Al-Bayati, Louis Panzer, Khalid Kaddoura

### TRACK C
Condition Assessment  
Jonathan Shirk  

**SESSION C4**  
PANEL  
CELINE HYER  

- **735044** – Asset Management Victories and Future Needs  
  Speaker(s): Devan Thomas, Celine Hyer, Ahmad Habibian, Sunil Sinha

### TRACK D
Construction and Rehab  
Alisa Gruber/Rich Mielke  

**SESSION D4**  
TRENCHLESS REPAIRS  
ALAN HUTSON  

- **742891** – The City of San José Demonstrates Flexibility and Resolution to Accomplish Yard Piping Repairs Safely and Quickly  
  Speaker(s): Bernadette Visitacion-Sumida  
  Speaker(s): Steve Henning  
- **753493** – Assessment and Application of Trenchless Technologies for the Rehabilitation of Sewer Laterals  
  Speaker(s): Joanne Carroll

### TRACK E
UES/Multidiscipline  
Doug Jenkins/Jerry Snead  

**SESSION E4**  
I/I ANALYTICS  
ANDREW SPARKS  

- **535310** – Transmission Main Leak Monitoring to Reduce Risk and Non-Revenue Water  
  Speaker(s): Paul Murray, Waseem Khan  
- **737033** – Analyzing Existing Flow and Precipitation Records to Allocate Resources for Sewer Inflow and Infiltration Studies  
  Speaker(s): Charles Herckis  
- **743372** – Acoustic-based Underground Utility Mapping at the Annacis Island WWTP  
  Speaker(s): Michael Metcalf, Kenneth Hui, Dave Hoffman, Victor Castellanos, Mike Thorstenson, Gary Skipper, Grey Tarkenton
## TRACK A
Planning & Design
Rosser Standifer

### SESSION A5
SURGES AND TRANSIENTS
ROSSER STANDIFER

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<tr>
<td>743481 – Analyzing Transient Responses of Pumped Pipelines using an Analytic-Energy-Based Approach</td>
<td>David McPherson, Ahmad Malekpour</td>
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<tr>
<td>744452 – A Tried and True Method of Surge Control for Water Transmission Pipelines</td>
<td>Alan Hutson, Tom Hill</td>
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<tr>
<td>743951 – Numerical Methods for Analyzing Surge, What’s Behind Those Messy Equations</td>
<td>Thomas Hill</td>
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## TRACK B
Trenchless
Jeffrey Shoaf

### SESSION B5
FROM CCTV TO HDD
ADAM BRAUN

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<td>740310 – Developing a Proactive City-Wide Stormwater CCTV Master Plan and Condition Assessment Program, San Antonio, TX</td>
<td>Noelle Gaspard, Nefi Garza, Olufunso Ogidan, Martin Hernandez</td>
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<td>735614 – Four Trenchless Water Main Installations Under an Active Railroad in Southeast Florida</td>
<td>Janine Alexander, Wilhelmina Montero</td>
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<td>744058 – Simplified Application of the Delft Method to Estimate Maximum Allowable Annular Pressure in HDD</td>
<td>Inshik Park, Alireza Bayat</td>
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## TRACK C
Condition Assessment
Jonathan Shirk

### SESSION C5
PRIORITIZATION TOOLS
KALYAN PIRATLA

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<td>736496 – A Data-Driven Approach to Determine If New Water Mains Construction Can Cause Neighboring Old Water Mains to Break</td>
<td>Muhammad Tak, James Kaifer, Warren McHenry</td>
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<tr>
<td>535351 – Mechanical Performance of a Pressure Pipe CIPP Liner with Stress Concentration Effects Associated with Local Defects</td>
<td>Shawn Kenny, Xiaoan He</td>
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<tr>
<td>743570 – Prioritizing Pit Cast Iron Small Diameter Watermains For Assessment</td>
<td>Rabia Mady</td>
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## TRACK D
Construction and Rehab
Alisa Gruber/Rich Mielke

### SESSION D5
COSTS AND STANDARDS
RICH MIELKE

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<td>743565 – The High Cost of Using AWWA’s Buried No Longer Pipe Service Life Table for Capital Budgeting</td>
<td>Gregory Baird</td>
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<td>744445 – Forecasting Pipeline Construction Costs Using Time Series Methods</td>
<td>Srinivasan Kim, Bahram Abediniangarabi, Mohsen Shahandashti</td>
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## TRACK E
UES/Multidiscipline
Doug Jenkins/Jerry Snead

### SESSION E5
PANEL
SRI RAJAH

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<td>535663 – Unified Approach to Thrust Restraint Design Panel Session</td>
<td>Stephen Shumaker, Sri Rajah, Henry Bardakjian, Randall Conner, Martin McCabe</td>
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**Wednesday, August 12, 1:00 pm to 2:00 pm**
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**Planning & Design**
Rosser Standifer

### TRACK B
**Trenchless**
Jeffrey Shoaf

### TRACK C
**Condition Assessment**
Jonathan Shirk

### TRACK D
**Construction and Rehab**
Alisa Gruber/Rich Mielke

### TRACK E
**UES/Multidiscipline**
Doug Jenkins/Jerry Snead

### SESSION A6
**ALTERNATIVE DELIVERY MENTHODS**
JOSH KERCHO

**736902 – How to Make Your Engineer Think Like a Contractor and Vice Versa**
Speaker(s): Alisa Gruber, Beth Kochur, Bill Williams

**744795 – How a Successful Texas Public-Private Partnership Brings Water for the Next Generation**
Speaker(s): Marisa Vergara, Bill Williams, Carissa Shelley

**743495 – CMaR Delivery of Critical Water and Wastewater Pipelines**
Speaker(s): Steve Pool, Tanner Randall

### SESSION B6
**LARGE TUNNELS**
RICHARD NICHOLS

**712639 – Risks and Rewards in Completing a Design/Build Tunneling Project**
Speaker(s): Michael Ramirez, Ivan Hernandez

**743838 – Crossing the 4th Largest City in the U.S. with a 90°/84° Pipeline: A Case Study**
Speaker(s): Jared Barber, Jason Ward, Alan Hutson, Melinda Silva

**744580 – Crossing the Red, Managing Construction Changes on a Challenging 1200 mm Microtunnelling River Crossing in Winnipeg, Manitoba, Canada**
Speaker(s): Adam Braun, Nathan Kehler, Jordan Thompson, Stacy Cournoyer

### SESSION C6
**REHABILITATIONS, CULVERTS AND INFILTRATION**
MIKE LARSEN

**743702 – DeKalb County: A Large Utility Gaining Efficiencies to Accurately Rehab Assets in a Timely Fashion**
Speaker(s): Gerardo Boquin, Burhan Shaikh, Darren Eastall

**743799 – Estimating Groundwater Infiltration in Sewers**
Speaker(s): Kevin Enfinger, Patrick Stevens

**744644 – Culvert Profiling Using Digital Image Correlation**
Speaker(s): Amin Darabnoush Tehrani, Zahra Kohankar Kouchestehani, Mohammad Najafi

### SESSION D6
**PANEL**
JIM ANSPACH

**755000 – Near Misses and Close Calls – Risk Management in Utility Construction Panel Session**
Speaker(s): Jim Anspach, Steve Lang, Paul Bizier

### SESSION E6
**INFRASTRUCTURE RESILIENCE**
JERRY SNEAD II

**751568 – Development of a Consequence of Failure Model and Risk Matrix for Water Pipeline Infrastructure Systems**
Speaker(s): Anmol Vishwakarma, Sunil Sinha

**714868 – Surge Phenomenon During Slow Valve Closures in Short Pipelines**
Speaker(s): Guohua Li

**535521 – What is Pipeline Resilience?**
Speaker(s): Maury Gaston
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**SESSION A7**  
CATHODIC PROTECTION AND CORROSION  
ZAC BOLEN  
720087 – Developing a Decision-Support System to Optimize Rehabilitation and Replacement Programs for Ferrous Distribution Mains in Municipal Water Systems  
**Speaker(s):** Khalid Kaddoura, Bruce Gehrig, Ahmed Al Bayati  
742418 – Probabilistic Corrosion Modeling to Estimate Design Life of Pipes  
**Speaker(s):** Chris Atkins, Paul Lambert, Sean Greenwood, Mossan Mahmood  
743659 – Cathodic Protection of a Long-Distance, Multi-Material Water Pipeline  
**Speaker(s):** Christopher Sheldon, Chelsea Teall, Shaun Tidwell

**SESSION B7**  
EVALUATIONS AND GUIDELINES FOR TRENCHLESS  
JEFFREY SHOAF  
743309 – Evaluation of Ground Displacements and Pulling Forces During Pipe-Swallowing Replacement of Water and Wastewater Pipes in Well-Graded Sand  
**Speaker(s):** Samuel Ariaratnam, Xufeng Yan, Baosong Ma, Cong Zeng  
744560 – Evaluation of Construction Methods for a 135-inch Diameter Tunnel Crossing of a Major Highway Bridge  
**Speaker(s):** Michael Liga, Yovani Zelaya, Kevin Tran  
736954 – Design Guidelines for the Steel Pipelines of a Major Project in San Antonio, Texas  
**Speaker(s):** Henry Bardakjian, Mark Bush

**SESSION C7**  
PREDICTING TOOLS AND SAVINGS WITH ALTERNATE ALIGNMENTS  
SHAOQING GE  
744133 – One If by Air, Two If by Land – Savings with Aerial Surveying for Transmission Lines  
**Speaker(s):** Hunter Hanson, Mike Dooley  
736001 – Predicting Condition of Sanitary Sewer Pipes with Gradient Boosting Tree  
**Speaker(s):** Mohammadreza Malek Mohammadi, Mohammad Najafi, Nazanin Salehlabadi, Ramtin Serajiantherrani, Vinayak Kaushal  
718417 – Kennedy Newton Main and the Challenges of Design and Construction of Large Diameter Watermains in Urban Areas  
**Speaker(s):** Yariv Ben-Shooshan, Amer Nawaz

**SESSION D7**  
SURVIVING EARTHQUAKES AND SOME HISTORY  
ALAN HUTSON  
744788 – Positive Unintended Consequences – How Campbell Lake Gravity Sewer Pipeline Line Survived a Magnitude 7.1 Earthquake  
**Speaker(s):** David A Persinger, Maury Gaston  
744523 – Valve Houses at Houston Ship Channel  
**Speaker(s):** Benjamin McCray, Manny DePau, Anh Hunter  
742499 – DC Water At Work: Mitigating Century Old Infrastructures From Historic Storms  
**Speaker(s):** Steve Bian, Renni Zhao, Tayo Olutunji, Dunbar Regis

**SESSION E7**  
FUNDING AND INTERNATIONAL METHODS  
JERRY SNEAD II/DOUG JENKINS  
744640 – Ten Things You Need to Know About State Revolving Fund American Iron and Steel Requirements  
**Speaker(s):** Kirsten Anderer  
752167 – How Innovative and Adaptive Solutions were used to Solve Challenges Faced by Contra Costa Water District’s Canal Replacement Project  
**Speaker(s):** Colin Dudley, Peter Bellows, Peter Stabb, Sarah La Valle  
742424 – Mutual Learning: A Comparison Between the Dutch and International Utility Surveying Approaches  
**Speaker(s):** Ramon ter Huurne, Léon olde Scholtenhuis, André Dorée
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<td>FROM DELIVERY TO INSTALLATION</td>
<td>REHAB METHODS AND ANALYSIS</td>
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<td>RICHARD NICHOLS</td>
<td>KALYAN PIRATLA</td>
<td>ROWENA PATENAUDE</td>
<td>ANNA PRIDMORE</td>
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**SESSION A8: SEISMIC ENGINEERING AND RESILIENCY**

744330 – Seismic Resilience Enhancement of Water Pipe Networks Using Hybrid Metaheuristic Optimization
Speaker(s): Binaya Pudasaini, Mohsen Shahandashti

Speaker(s): Chris Sundberg, Terri Tovey

744041 – Newly Developed Seismic Resilient Steel Pipe Joint Safeguards Pipeline Structural Integrity during Severe Geohazard Events
Speaker(s): Spyros A. Karamanos

744210 – Save Money by Shopping Around: Competing Pipe Materials for Large Diameter Pipelines
Speaker(s): Eric Engelskirchen, Chad Sharbon, Travis Williams

744005 – Experimental Investigation of Steel Lap-Welded Pipe Joint Performance Under Severe Axial Loading Conditions in Seismic or Geohazard Areas
Speaker(s): Spyros Karamanos, Brent D. Keil, Fritz Gobber, Richard Mielke, Gregory Lucier, Giannoula Chatzopoulou, Gregory Sarvanis, Dimitris Fappas

713933 – Method to Evaluate Fatigue Life Calculations in PVC Pipe
Speaker(s): Steven Folkman, Jay Parvez

**SESSION B8: MATERIALS AND THEN SOME**

736974 – Beating the Clock: Leveraging the Flexibility of Design Build to Fast Track Pipe Delivery
Speaker(s): Alisa Gruber, Bill Williams, Ricky Wu

721906 – A Compelling Comparison of Field Measurements and Numerical Modeling in Pipeline Surge Pressure Evaluation
Speaker(s): Brandon Billing

751646 – Proof Positive: Pipe Prove-out Procedure Promotes Proper Installation During Construction
Speaker(s): George Farah, Amanda Voss

**SESSION C8: FROM DELIVERY TO INSTALLATION**

744769 – Framework for Life-Cycle Cost Analysis of Trenchless Renewal Methods for Large Diameter Culverts
Speaker(s): Ramtin Serojantehran, Mohammad Najafi, Mohammadreza Malek Mohamadi, Vinayak Kaushal

744592 – Internal Joint Bonding of Prestressed Concrete Cylinder Pipe: The Improbable Project
Speaker(s): Gregory Smith

731194 – Bonded or Unbonded Liners? How Longitudinal Bending Impacts Pipe Lining Design and Performance
Speaker(s): David P. Kozman

**SESSION D8: REHAB METHODS AND ANALYSIS**

744769 – Framework for Life-Cycle Cost Analysis of Trenchless Renewal Methods for Large Diameter Culverts
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Speaker(s): David P. Kozman

**SESSION E8: PANEL**

753687 – Ethics Session
Speaker(s): Anna Pridmore, Tara Hoke, Stephanie Slocum
### On-Demand Sessions

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