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* Additional Ticket Purchase Required
On behalf of the Pipelines 2014 Steering Committee, we welcome you to the beautiful and lively city of Portland, Oregon to attend the Pipelines 2014 Conference. Portland is known for its green spaces; proximity to natural wonders like the Columbia River Gorge and Mount Hood; the most exciting food, beers, and wines; and much more. Our host venue, the Oregon Convention Center, is the largest convention center in the Pacific Northwest. We sincerely thank you for your participation as a presenter, sponsor, exhibitor, and/or attendee in this annual specialty conference organized by the Pipeline Division of ASCE.

The theme of the Pipelines 2014 Conference is From Underground to the Forefront of Innovation and Sustainability. The conference creates a forum for Utility and Pipeline Owners, Design and Consulting Engineers, and Pipeline Experts from around the globe to gain valuable knowledge related to planning, designing, constructing, assessing, operating, and maintaining lifeline assets. You will have the opportunity to participate in the pre-conference workshops and technical sessions, visit over 70 exhibits from industry leaders, and network with industry peers and leaders. The 2014 conference is on pace to set new benchmarks for number of exhibitors, number of pre-conference activities, number of technical tracks, increased participation from students and diverse interest groups, and a record number of attendees.

We hope you had a chance to participate in some of the pre-conference workshops chosen specifically to reflect and cater to the diverse interests of the attendees. In addition, a student competition, coordinated with the Construction Institute (CI) of ASCE, will start on Sunday afternoon.

We look forward to seeing you at the Sunday evening networking reception as we officially kick off the conference. Monday’s plenary breakfast will feature a Keynote Address from the current ASCE President, Gregory E. DiLoreto, P.E., P.L.S., D.WRE, F.ASCE. Eight concurrent technical sessions tracks will start Monday morning and continue until 11 a.m. on Wednesday. Be sure to attend the Awards Luncheon on Tuesday with special guest speaker, astronaut Col. Rick Searfoss and witness the presentations of the 2014 ASCE Award of Excellence and the distinguished Stephen D. Bechtel Pipeline Engineering awards. If you haven't already purchased a ticket to the Tuesday evening special event, An Evening in P-Town with The Top Down, stop by the registration desk by Monday at noon and take part in this fun and relaxed opportunity to network while enjoying local food and music.

The conference officially ends on Wednesday at noon with a Closing Session featuring a keynote presentation by Mark Knudson, P.E., M.ASCE, the Chief Executive Officer at the Tualatin Valley Water District. If you haven't already purchased a ticket to the post-conference activities – a technical tour, a golf tournament, and a sporting clay tournament – stop by the registration desk to inquire about availability as soon as possible.

We are very excited to bring you this timely and important conference. We are confident that you and your guests/families will enjoy Portland, its many attractions in nearby areas, and its unique shopping and sightseeing opportunities.

Thank you for your attendance and support!

Sincerely,

Scott Gibson, P.E., M.ASCE
Conference Co-Chair
Sri Rajah, Ph.D., P.E., S.E., G.E., M.ASCE
Conference Co-Chair
Randy Hill, P.E., M.ASCE
EXCOM Chair - Pipeline Division

Welcome Conference Attendees:

First, the Executive Committee of the ASCE Pipeline Division (EXCOM) wants to express appreciation to the 2014 Steering Committee, ASCE staff, track chairs and the many other volunteers who have worked arduously to make Pipelines 2014 one of the Division’s most memorable conferences. This conference includes informative workshops, an expanded and impressive technical program, a variety of pipeline exhibitors, keynote speakers, award presentations, the ASCE Construction Institute-sponsored Student Program, networking opportunities and entertainment. While you are at the conference, please take time to thank those who have worked so hard to make this conference a success.

Second, the Pipelines 2014 Conference is supported by generous donations from the sponsors and 70 plus exhibitors. Plan to attend the Ice Breaker on Sunday afternoon to meet the exhibitors and sponsors and thank them for their support and interest in the Pipelines 2014 Conference.

Finally, plan to attend the Awards Luncheon on Tuesday, August 5 for a presentation on the state of the Pipeline Division, its future, and expanded opportunities for all professionals and students interested in pipeline related services and careers.

Sincerely,

Randy Hill, P.E., M.ASCE
EXCOM Chair - Pipeline Division

A LETTER FROM PIPELINES EXCOM

WELCOME TO PORTLAND

Pipelines 2014 Conference 3
CONFERENCE AGENDA

CONFERENCE STEERING COMMITTEE

CONFERENCE CO-CHAIRS
Sri Rajah, Ph.D., P.E., S.E., G.E., P.Eng., M.ASCE
HDR Engineering, Inc.

Scott Gibson, P.E., M.ASCE
City of Portland

TECHNICAL PROGRAM CO-CHAIRS
Shah Rahman, A.M.ASCE
Northwest Pipe Company

David McPherson, Ph.D., P.E., M.ASCE
Alan Plummer Associates, Inc.

SPONSORSHIP/EXHIBIT CHAIR
John Plattsmier, P.E., M.ASCE
HDR Engineering, Inc.

INTERNATIONAL CHAIR
Baosong Ma, Ph.D., A.M.ASCE
China University of Geosciences

LOCAL CHAIR
Ken Willhite, P.E., PMP, M.ASCE
Port of Portland

SPECIAL EVENTS CHAIR
Ian McFratridge, A.M.ASCE
LifeLast, Inc.

GOLF TOURNAMENT CHAIR
Tammy Cleys, P.E., M.ASCE
City of Portland

2013 CONFERENCE CHAIR
Mohammad Najafi, Ph.D., P.E., F.ASCE
University of Texas at Arlington

WORKSHOP COORDINATOR
Firat Sever, Ph.D., P.E., M.ASCE
American Structurepoint, Inc.

SPORTING CLAYS TOURNAMENT COORDINATOR
Mark Mihm, P.E., M.ASCE
HDR Engineering, Inc.

PIPELINE DIVISION EXECUTIVE COMMITTEE CONTACT
Randy Hill, P.E., M.ASCE
RCH Engineering

COMMITTEE ON TECHNICAL ADVANCEMENT LIAISON
Michael T. Stift, P.E., M.ASCE
Michael T. Stift Civil Engineering

ASCE STAFF
Lauren Miller, Conference Manager
Yin Feng, Conference Coordinator
Sean Scully, Exhibits and Sponsorships
John Segna, CTA Director
Tenzing Barshee, CTA Coordinator

COMMITEE MEETINGS

All meetings take place at the Oregon Convention Center unless otherwise noted

Friday, August 1
8:00 a.m. – 5:00 p.m. CTA EXCOM Meeting (DoubleTree Madison Room)

Saturday, August 2
8:00 a.m. – 5:00 p.m. Pipeline Division EXCOM Meeting (Room D134)
8:00 – 10:00 a.m. Pipeline Location and Installation Technical Committee (Room D133)
8:00 – 11:00 a.m. CTA EXCOM Meeting (DoubleTree Madison Room)
8:00 a.m. – 5:00 p.m. Task Committee on Sustainable Design of Pipelines (Room E141)
9:00 a.m. – 5:00 p.m. Task Committee on Thrust Restraint Design of Buried pipelines (Room E142)

Sunday, August 3
8:00 a.m. – 12:00 p.m. Utility and Subsurface Engineering (Room E141)
8:00 a.m. – 12:00 p.m. Pipelines 2015 Steering Committee (by invitation only) (Room D133)
8:00 a.m. – 5:00 p.m. Pipeline Division EXCOM Meeting (Room D134)
1:00 – 5:00 p.m. Transient Analysis Task Committee (Room D140)
1:00 – 4:00 p.m. Pressure Pipe Design Manual Committee (Room D139)
3:00 – 6:00 p.m. TIPS Committee (Room D138)
7:00 – 10:00 p.m. ASCE Journal of Pipeline System Editorial Board Meeting (by invitation only) (Room D138)

Monday, August 4
1:00 – 2:30 p.m. Task Committee on Sustainable Design of Pipelines (Room D139)
3:00 – 5:00 p.m. MOP Design of Flexible Pipeline Liners (Room D139)
5:00 – 9:00 p.m. Pilot Tube MOP (Room D140)

Wednesday, August 6
8:00 – 11:00 a.m. Pipeline Division EXCOM Meeting (Room D134)
8:00 a.m. – 12:00 p.m. Utility As-Built Standards Committee (Room D139)
**CONFERENCE AGENDA**

**PRE-CONFERENCE WORKSHOPS**

Lunch will be provided for all workshop attendees from 12:00 to 1:00 p.m. on Saturday and Sunday in Lobby E (outside your workshop room). Workshop tickets are required for lunch.

### Saturday, August 2

#### The Prestressed Concrete Cylinder Pipe (PCCP) Forum
**8:00 a.m. – 1:00 p.m., Room E145**

The PCCP User's Group is a consortium of PCCP owners that periodically meets to discuss the operation, maintenance, and management of their PCCP systems. The forum will discuss design, fabrication, installation, operation, maintenance, and management of PCCP including the inspection, condition assessment, repair, rehabilitation, and monitoring. Presenters will include owners, manufacturers, and contractors. The closed afternoon session will focus on owner's issues and solutions relating to the topic highlighting the current and upcoming innovative technologies to help with the asset management of this pipe material.

Registration Fee: $195  
PDH: 4.0

#### Surge Control: Integration in Pipeline Planning, Design, Construction, and Operation
**1:00 – 5:00 p.m., Room E146**

The Transient Analysis Task Committee was chartered in order to develop industry guidance for the integration of transient analysis and surge control with pipeline design. Unique contributions developed by the committee have now been combined into a white paper for distribution at Pipelines 2014. The white paper is intended to provide guidance for pipeline engineers, project managers, owners, and operators who currently struggle with the management of hydraulic transient analysis and surge control design during pipeline projects. Workshop topics will include the integration of transient analysis and design, risk management, transient analysis scope development, and emerging technologies. The workshop will allow the committee to share these new approaches with the water industry, to receive feedback on the work to date, and to capture the direct experience of designers, owners, and engineers.

Registration Fee: $225  
PDH: 4.0

#### ASCE's New Utility “As-Builting” Standard: Opportunity for Industry Input
**8:00 a.m. – 12:00 p.m., Room E144**

ASCE’s Standard for the Collection, Administration, and Exchange of Newly Installed Utility Infrastructure is in its developmental stage. It is the result of organizations such as AASHTO, FHWA, TRB, and others requesting guidance on a national level for a standardized approach for “utility as-builting” as part of a recognized need for improved Asset Management. The standard is intended to serve as a guide and specification for project owners, their consultants and contractors, and utility owners. The purpose of this workshop is to provide information on progress to-date and gather feedback from interested and involved parties. This standard will adapt portions of the Canadian Standards Association (CSA) S250-11 “Mapping of Underground Utility Infrastructure” and will complement ASCE 38 “Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data.”

Registration Fee: $225  
PDH: 4.0

### Sunday, August 3

#### Pipeline Design for Installation by Horizontal Directional Drilling, MOP 108
**8:00 a.m. – 12:00 p.m., Room E146**

This workshop will introduce a recently completed revision and update of ASCE MOP 108 – Pipeline Design for Installation by Horizontal Directional Drilling (HDDD). The update is the result of five years of effort by the ASCE Pipeline Division Task Group for the revision of MOP 108. Speakers will review topics covered in the manual including predesign survey, drill path design, pipe design, construction and documentation. The discussion will include emerging technologies being used in HDD, design examples and case histories. A copy of MOP 108 will be provided to all participants.

Registration Fee: $275  
PDH: 4.0

**Welding of Large Diameter Pipelines: Design, Processes, Procedures, and Specifications for Welding Steel Water Pipe**
**8:00 a.m. – 12:00 p.m., Room E145**

This workshop is intended to provide a comprehensive overview to engineers, water system owners, operations and maintenance personnel, and contractors on the topic of welding of large diameter steel water transmission pipelines. Subjects covered will include weld design, similarities and differences between ASME and AWS weld procedures, fabrication of steel cylinders and specials per C200 and C208 and associated welding, weld quality control per C200 including NDTs, weld toughness and other topics per AWS and ASTM standards, WPS and PQR procedures, and field welding of steel pipe joints, processes and quality control per C206. Presentations will be made by a wide array of professionals from the industry.

Registration Fee: $225  
PDH: 4.0

#### Using Envision™ Concepts to Achieve Pipeline Sustainability
**8:00 a.m. – 12:00 p.m., Room E144**

This workshop will present sustainable design concepts and best practices applicable for pipeline projects, description of the infrastructure sustainability rating system Envision™ developed by the Institute for Sustainable Infrastructure (ISI), demonstrate the rating system application on how to plan, design, construct and operate a pipeline project or program to minimize impact and achieve a favorable rating. Workshop segments include social impacts, municipal considerations, risk, resources and materials, the natural world, climate, resiliency and current project examples of sustainable pipeline design.

Registration Fee: $225  
PDH: 4.0

#### New CI/ASCE 36 - Standard Design and Construction Guidelines for Microtunneling
**1:00 – 5:00 p.m., Room E144**

This workshop will unveil a recently completed revision and update of CI/ASCE 36 – Standard Design and Construction Guidelines for Microtunneling to the general public and engineering community. The new updated version of the Standard has tripled the size of the 2001 edition. The intention of the workshop is to go through the new Standard and highlight what changes were made and explain why. The workshop will be an open forum to allow the audience to ask questions about the modifications made. Attendees of the workshop will receive a copy of the new Standard when it is published by ASCE.

Registration Fee: $275  
PDH: 4.0
Unified Approach to Thrust Restraint Design  
1:00 – 5:00 p.m., Room E145  
This workshop will introduce a draft manual of practice for a unified approach to thrust restraint design of buried pipelines. Presented by the Task Committee on Thrust Restraint Design of Buried Pipelines, this 4-hour workshop will cover such topics as: an introduction to thrust restraint design; historical development of thrust restraint design practice; soil-pipe interaction, including contribution of frictional and passive earth pressure resistance and appropriate soil parameters for assessing axial and transverse behavior of buried pipelines; an improved approach for the design of thrust blocks; pipe material-specific considerations; detailed analytical models for both continuous and segmented pipelines; a simplified unified empirical approach to thrust restraint design of bends in buried pipelines; application of design approach from bends to other sources of thrust such as tees, valves, reducers, etc.; and common thrust restraint design and construction pitfalls and how to avoid them. Throughout the course of the workshop, specific examples, as may commonly be found in pipeline design, will be discussed. Participants are encouraged to bring their own calculators to fully participate in these design exercises.

Registration Fee: $225  
PDH: 4.0

Manual of Practice: Methods for Renewal of Potable Water Pipes  
1:00 – 5:00 p.m., Room E146  
This workshop introduces the newly completed MOP entitled Methods for Renewal of Potable Water Pipes to the general public and engineering community. This is a new publication that includes a comprehensive outline of all the water pipe renewal methods. The intention of this workshop is to go through the new MOP and highlight what is included and why. The workshop will be an open forum to allow the audience to ask questions about the MOP. Attendees of the workshop will receive a copy of the new MOP when it becomes available.

Registration Fee: $275  
PDH: 4.0

Monday, August 4  
Plenary Breakfast, Welcome, and Keynote Speaker  
8:00 – 9:30 a.m., Portland Ballroom  
Join us for the welcome event of this exciting conference! You can fuel up for a day of learning as you visit with friends and colleagues. This event will also include a welcome by the conference co-chairs and a discussion of the Pipeline industry from Greg DiLoreto.

KEYNOTE SPEAKER: GREGORY E. DILORETO, P.E., P.L.S., D.WRE, FASCE, ASCE  
2013 PRESIDENT  
Greg DiLoreto recently retired after 14 years as the Chief Executive Officer of the Tualatin Valley Water District located in metropolitan Portland, Oregon. He has worked in the public works field for 37 years, 17 years as a public works director/city engineer. Mr. DiLoreto holds a B.S. degree in Civil Engineering from Oregon State University and a Master’s degree in Public Administration from Portland State University. He is registered as a civil and environmental engineer and a professional land surveyor in Oregon.

Mr. DiLoreto is a fellow in the American Society of Civil Engineers. He served on the ASCE Board of Direction 2004-06. He has received the 1986 ASCE Edmund Friedman Young Engineer Award, the 1995 ASCE Oregon Section Outstanding Civil Engineer Award and the 2005 ASCE Government Engineer of the Year Award. In 2003 he was inducted into the Oregon State University Academy of Distinguished Engineers.

Ticket required. Included in Full, Student, and Monday Daily registration rates.

Additional tickets: $60

Sponsored by CDMSmith

Afternoon Networking Break in Exhibit Hall  
2:30 – 3:00 p.m., Exhibit Hall E

Sponsored by:

Sunday, August 3  
Welcome Reception  
6:00 p.m. – 7:30 p.m., Exhibit Hall E  
Don’t miss the Welcome Reception, a fun and relaxed start to the conference. Reconnect with former colleagues and meet new friends while you enjoy refreshments in the exhibit area. Be sure to stay until the end of the reception for a chance to win an iPad mini being raffled off at the Plastic Pipe Institute Booth.

Ticketed required. Included in Full, Guest, and Student registration rates.

Additional ticket: $75

Sponsored by:

Special Events

Exhibit Hall Lunch/Speed Networking Event for Students  
11:30 a.m. – 1:00 p.m., Exhibit Hall E  
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. All students attending the conference are welcome to participate in a speed networking event and meet prospective employers and industry leaders – meet in the center aisle to participate in or observe the fun.

Ticket required. Included in Full, Student and Monday Daily registration rates.

Additional tickets: $40

Sponsored by Garney Construction

Afternoon Networking Break in Exhibit Hall  
2:30 – 3:00 p.m., Exhibit Hall E

Sponsored by:

From Underground to the Forefront of Innovation and Sustainability
Order of the Engineer Ceremony

7:00 – 8:00 a.m., Room E133
Participants at the Ring Ceremony will take the Obligation of the Engineer and receive a stainless steel ring. If you have not already signed up, please stop by the registration desk to inquire about availability. If you are signed up, please double-check your ring size at the registration desk on Monday to facilitate distribution during the ceremony.
Ticket required.
Registration fee: $15

Morning Networking Break in Exhibit Hall
9:30 a.m. – 10:00 a.m., Exhibit Hall E

Awards Luncheon and Special Guest Speaker

11:30 a.m. – 1:00 p.m. Portland Ballroom
This annual awards luncheon includes a State of the Pipeline Division address by Executive Committee Chairman Randy Hill prior to introduction of our exciting guest speaker, astronaut Colonel Rick Searfoss.

Sponsored by: MWH

2014 Award Winner: John J. Galleher Jr., P.E., M.ASCE
This year’s recipient is John Galleher, Pipelines Division EXCOM Past Chair. John graduated from San Diego State University and has over twenty-four years of experience specializing in the management of large, complex water infrastructure asset management programs. These programs included the development of specialized inspection and condition assessment procedures for pipelines and their associated facilities as well as risk and consequence of failure matrices allowing for the prioritization of replacement and rehabilitation projects. He began his career working for a small consulting firm for 5 years and then went on to the San Diego County Water Authority where he spent 18 years working for both the Engineering and Operations and Maintenance Groups. In 2012, John went back to consulting with Pure Technologies U.S. Inc. as Vice President of the Western Region.

2014 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 significant contribution to the advancement of pipeline engineering in research, planning, design, or construction.

2014 Award Winner: David Marshall, P.E., M.ASCE
David Marshall is the Director of Engineering Services at Tarrant Regional Water District and has a wide range of experience in natural science, engineering, and water resources. Mr. Marshall has been with the District since 1988 where he has been involved in a wide range of water quality and engineering projects. As Engineering Services Director, his current role, his responsibilities include management of the District’s water resources, including flood control and raw water supply. He also oversees major maintenance and capital improvement projects. Mr. Marshall is currently part of the integrated pipeline team, a joint effort of TRWD and Dallas to build a 149 mile, $2.3 billion dollar transmission pipeline.

Sponsored by:

Direction to Hotel deLuxe:
1. From the DoubleTree, walk to the adjacent Lloyd Center/NE 11th Avenue Max Station
2. From the Convention Center, walk to the adjacent Convention Center MAX Station
3. Take any MAX Red Line or Blue Line train going west (towards downtown)
4. Exit at the Providence Park MAX Station
5. Walk 2½ blocks east on SW Yamhill St. to the Hotel deLuxe Parking Garage
6. The elevator to the roof is on SW Yamhill St. between 15th Ave. and 16th Ave.

Join us for a fun-filled evening in one of the nation’s most unique cities. “Keep Portland Weird” is a battle cry in The Rose City and we are celebrating this theme with an open-air dinner event. Meet high above the streets, atop the Hotel deLuxe in downtown Portland. Enjoy fantastic food offerings from multiple local food cart scene vendors while sampling some of the Pacific Northwest’s finest micro brews and wines. Enjoy awe-inspiring views while grooving to the roots/mountain music vibe picked and strummed by local bluegrass band, Jackstraw. After dinner enjoy a fine cigar compliments of our host and sponsor, Structural Technologies, LLC. Only in P-Town will you experience an event like this; don’t miss it. Travel to and from this event on Portland’s well-known light rail system, so driving will not be required.
Ticket purchase is required. This event is not included in the registration package so be sure to stop by the registration desk and check availability if you don’t already have a ticket.
Registration Fee: $55

Sponsored by: FIBRWRAP

An Evening in P-Town with The Top Down
6:30 – 9:30 p.m. Hotel deLuxe

Speakers:

SPEAKER: David Marshall

Afternoon Networking Break in Exhibit Hall
3:30 - 4:00 p.m. Exhibit Hall E

SPEAKER: John J. Galleher Jr., P.E., M.ASCE

He also piloted two other space flights, including a joint Russian-American mission to the Mir space station.

Prior to becoming an astronaut Colonel Searfoss was a fighter pilot and test pilot in the U.S. Air Force, with over 5800 hours flying time in 71 different types of aircraft. He was also the number one graduate in his Air Force Academy class and earned a master’s degree at the California Institute of Technology. Rick has held executive level positions in the aerospace industry and now consults regularly for numerous entrepreneurial space ventures, including serving as the Chief Judge for the $10 million Ansari X Prize.

Ticket required. Included in Full, Guest, Student and Tuesday Daily registration rates
Additional tickets: $75

Sponsored by:

7

Direction to Hotel deLuxe:
1. From the DoubleTree, walk to the adjacent Lloyd Center/NE 11th Avenue Max Station
2. From the Convention Center, walk to the adjacent Convention Center MAX Station
3. Take any MAX Red Line or Blue Line train going west (towards downtown)
4. Exit at the Providence Park MAX Station
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6. The elevator to the roof is on SW Yamhill St. between 15th Ave. and 16th Ave.
Wednesday, August 6

Continental Breakfast
7:30 a.m. – 8:00 a.m., Pre-Function E

Morning Networking Break
9:30 – 9:45 a.m., Pre-Function E

Closing Session with Special Lecture
11:00 – 11:45 a.m., Portland Ballrooms
In 2012, the Oregon Legislature tasked the Oregon Seismic Safety Policy Advisory Commission to prepare a comprehensive plan to improve Oregon’s seismic resiliency with the goals of protecting lives and providing rapid recovery following a magnitude 9 Cascadia Subduction Zone earthquake (CSZEq). The resulting Oregon Resilience Plan (ORP) was submitted to the Legislature in February 2013. The ORP identified that, if it occurred today, a CSZEq would result in extensive damage to regional water supply systems and that restoration of water supply and distribution systems would require several months, adversely affecting public health, public safety, and the regional economy.

This presentation will include an overview of the regional water supply system, illustrate the types of damage that may result from a CSZEq and summarize estimates of recovery times for critical infrastructure. The presentation will highlight a comprehensive approach to seismic mitigation including system planning, standards, operational coordination, capital improvements projects, and regional partnerships.

ABOUT THE SPEAKER:
Mark Knudson, P.E., M.ASCE
Mark is the Chief Executive Officer at the Tualatin Valley Water District, the second largest water system in Oregon. Prior to his appointment as CEO in 2013, Mark served as TVWD’s Chief Engineer. Mark has over 30 years of experience in the planning, design, construction, operation and maintenance of water systems.

Mark has a BS in Civil Engineering and a MS in Environmental Engineering, both from Oregon State University. He is also a WD4 and WT3 certified water system operator in Oregon. Mark is currently helping lead a partnership to develop a new, regional water supply from the Willamette River to serve TVWD, the City of Hillsboro and other communities in Washington County. This new regional water supply will cost over $800 million and is scheduled to be in service by 2026.

Technical Tour
1:00 p.m. – 4:30 p.m.
Willamette River CSO System: Integrating Collection, Storage, Pumping and Treatment to Maximize Performance

Technical Tour Overview:
In 2011, the City of Portland completed its 20-year program to control combined sewer overflows (CSOs) to the Columbia Slough and Willamette River. This $1.4 billion program was completed in December 2011, the deadline set by the Oregon Department of Environmental Quality in 1991.

With this new and unique system came the challenge of how to best use its 110 million gallons of CSO storage, 220 million gallons per day (MGD) of pumping capacity, and 450 MGD of treatment capacity. The Bureau's Modeling, Operations, CSO Construction, Design and Management teams, control system engineers, automation maintenance staff and Regulatory Agencies all worked collaboratively to integrate and control this state of the art, complex CSO system which included three major pump stations, three large sewage tunnels and significant gravity flow sources. Ultimately, each of these elements were controlled so that they operate together to feed the wastewater treatment plant with the optimal flows at the optimal time while meeting critical operational rules.

Bus transportation to/from the site and lunch will be provided. For safety reasons, all attendees are asked to wear appropriate closed-toe shoes.

TOUR SCHEDULE:
12:00 p.m. Meet in Convention Center Room D136
12:15 p.m. Lunch/Presentations
1:15 p.m. Board Bus at the Oregon Convention Center Ginkoberry Entrance
1:30 – 2:30 p.m. Tour Swan Island Pump Station
3:00 – 4:15 p.m. Tour Wet Weather Treatment Facilities & Operations Center
5:00 p.m. Return to the Oregon Convention Center

Registration fee: $70; Please stop by the registration to check for availability of additional tickets.

PDH: 2.0
Golf Tournament
12:00 – 7:40 p.m.

Golf Outing at The Reserve Vineyards & Golf Club
The Reserve Vineyards & Golf Club in Aloha, Oregon, presents two championship courses through a grapevine-lined entrance. Pipelines will be holding a shotgun-start tournament on the South Course. Included in the afternoon of golf is a box lunch as well as a dinner & award ceremony in the chateau-style clubhouse, the centerpiece of the 350-acre property.

The South course was designed by John Fought, a Portland native and former PGA Tour pro whose design credits include four Top 100 courses. It is a traditional American layout with dense stands of mature Oregon trees, naturally rolling terrain, and 114 gleaming white sand bunkers. Strategy and deception combine with pure aesthetic pleasure on this par 72 track, measuring from 5,189 to 7,172 yards.

Course highlights include the 605-yard, par 5 6th hole and the 473-yard, par 4 17th. The 6th requires players to negotiate 16 strategically placed fairway and greenside bunkers. The 17th stands out not only for its beauty, but also for the water feature guarding the hole’s left side and the distinctive double green, shared with the 11th and punctuated by a pot bunker separating the two putting surfaces.

Golf Schedule:
12:00 p.m. Board bus at the Oregon Convention Center
Ginkoberry entrance
12:45 p.m. Bus arrives at The Reserve Vineyards and Golf Club
1:00 p.m. Check in and driving range
1:30 p.m. Shotgun start
6:15 p.m. Awards and reception at the club house
7:10 p.m. Bus leaves at the Reserve Vineyards and Golf Club
7:40 p.m. Bus arrives at the Oregon Convention Center

Proper golf attire required: shirts with collars, slacks, suitable length golfing shorts, suitable length golfing shorts for women. The Reserve requires the use of soft spikes. Non-acceptable items include denim attire of any kind, tank tops, T-shirts, cut-offs, swimwear or gym shorts.

Ticket purchase is required. Lunch and Dinner are included.
Registration fee: $175

Sponsored by

Sporting Clays Tournament
3:00 – 6:00 p.m., Portland Gun Club
4711 S.E., 174th Ave., Portland, OR 97236

The ASCE Pipelines Conference Sporting Clays Event will be filled with fun and good old fashioned competition between friends. Also known as “golf with a shotgun,” sporting clays is a form of clay pigeon shooting that involves shooting clay targets at multiple locations (stations) offering a great variety of trajectories, angles, speeds, elevations, and distances and is suitable for experienced and inexperienced participants. Back by popular demand, this year’s event will be a 100-clay tournament held at the historic and beautiful Portland Gun Club. You can bring your own equipment or a shotgun will be provided at the event location for your use (only one shotgun is required per team.) There can be 4 or 5 shooters per team. Individuals not in a team will be assigned to a team at the event. Shotgun shells, snacks, water, and soda will be included in the ticket price.

Light refreshments and a hamburger dinner will be provided at the shooting range. 50 shells will be included with each registration. Transportation to and from the Oregon Convention Center to the site will be provided. Attendees who wish to utilize provided transportation should meet at the Ginkoberry entrance of the convention center no later than 2:45 p.m. Bus will depart at 3:00 p.m., and the tournament begins at 3:30 p.m. The bus will pick up the attendees at 5:30 and will return to the Convention Center by 6:00 p.m.

Ticket purchase is required.
Registration Fee: $75
10:00 - 11:30 a.m. Concurrent Technical Sessions

**TRACK A**
**Planning to Design**
Chair: Erin McGruire
ROOM E145

**SESSION A1**
**MARK NELSON**
River Gone Wild
Rami Issa
Planning Support Services
For San Francisco's Auxiliary Water Supply System (AWSS)
Anne Symonds
Utilizing InfoGap Decision Theory to Improve Pipeline Reliability: A Case Study
Denise Cicala

**SESSION A2**
**SAM ARNAOUT**
Exposure: Polyurethane Coating Response To Cyclic Heat Load and Ultraviolet Impact in the Texas Environment
Jeffry Giddings
Seismic Reliability of Seawater Intake Tunnels for San Francisco’s Auxiliary Water Supply System
Anne Symonds
Analysis of Horizontal Directional Drilling Construction Risks using the Probability Impact Model: A Contractor’s Perspective
Lameck Onsarigo

**SESSION B1**
**DOUG BIGLEN**
Saturated Sand Module Using CPT in Pipe Design
John Larson
Charts and Graphs for Effective E prime …. Removing the Smoke and Mirrors
Jey Jeyapalan
Regional Carrioz Program: Planning, Design, and Construction of a FastTrack Urban Pipeline
David Bennett

**SESSION B2**
**MIKE GLASGOW**
Design of Supplementary Intake from Lake Sakokawa for the Southwest Pipeline Project
Jim Lennington
“I’ll Take One of Everything” - Utilizing a Menu Approach to Tunnel Design
Michael Gossett
Innovative Directional Microtunnel Grainers Success for Crucial Trenchless Crossing
Jonathan Robison

**SESSION C1**
**JOHN HOULE**
Value Engineering and Final Design of a Hydraulic Surge Control System for a Major Raw Water Supply System – The Southern Delivery System
Christopher Ott
A Quasi Two Phase Flow Model for Calculating Filling in Pipelines
Bryan Kaney
Balch Consolidated Condit Transient Condition
Tammy Gleys

**SESSION C2**
**MAURY GASTON**
CFRP Renewal of PCCP - an Overview
Mohdi Zarhamee
Experimental Basis of CFRP Renewal of PCCP
Murat Engin diz
San Diego County Water Authority Aqueduct Protection Program since 1992: Evolution in Design and Construction of Steel Cylinder Reinling of PCCP
Mike Kenny

**SESSION D1**
**JENNIFER TATUM**
It’s Not A Pipe Dream – Crossing the St Johns River with one of the Southeast's Largest Directional Drilling Projects
Christine Ellenberger
Unique Design, Manufacturing and Installation Challenges for the CW System at the Ninemile Unit 6 CGST Project
Richard Nichols
Large-Diameter Pipeline Construction Through an Urban Corridor
Nanci Snyder

**SESSION D2**
**GEORGE BRIEST**
Comparing Different Embankment Options for an Open-cut Pipeline Project
Babak Maqani
Waterline Replacement Project in Ogden Canyon, UT Presents Unique Construction Challenges
Richard Botteicher
Conquering Design and Construction Challenges during FRP Repairs of PCCP
Mike Kenny

**SESSION E1**
**ERIC FRECHETTE**
Starting a Condition Assessment Program for PCCP in Tampa Bay Water's Wholesale System
Suzannah Folsom
Risk Based Condition Assessment and Rehabilitation Programming in Colorado Springs
Brad Croft
Developing a Workable Condition Assessment Program
Tim Taylor

**SESSION F1**
**RICH MIELKE**
A Cautionary Tale about Unextended Proprietary Restrained Joints for Ductile Iron Pipe
Craig Fisher
Repairs of In-Service HDPE Water Distribution Pipe
Lawrence Stavin
Large Diameter Pipe Failures Bring Over Fifty Years of Improvement
Nathan Faber

**SESSION G1**
**STEphanie BACHE**
Service Life Extension Option for Large-Diameter Potable-Water Transmission Pipelines
Michel Peloquin
Planning and Executing an Effective Water Distribution System Replacement Program
Art Shapiro
Testing Storm Water Pipe-Joints for Infiltration
Ravichandran Saravanan

**SESSION H1**
**MATT GAUGHAN**
Environmental and Design Challenges for a 1500 mm [60"] Diameter Steel Pipeline River Crossing
Ady Mak
Navigating an Environmentally Sensitive Area: Planning through Construction of a 54-inch Transmission Main in Austin, TX
Erin Wiesehan
No Easy Way - Challenges Faced in Designing a Large Sewer Interceptor in a River Corridor
Bob Neal

11:30 a.m. - 1:00 p.m. Exhibit Hall Lunch/Speed Networking Event for Students (Exhibit Hall E)

1:00 - 2:30 p.m. Concurrent Technical Sessions

**SESSION A3**
**SAM ARNAOUT**
Exposure: Polyurethane Coating Response To Cyclic Heat Load and Ultraviolet Impact in the Texas Environment
Jeffry Giddings
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Mike Kenny

**SESSION E2**
**TRAVIS WAGNER**
A tale of two utilities: how Portland Water (Oregon) and WaterOne (Kansas) justify and apply condition assessment for pipe risk management
Jeff Leighton
Fort Worth Interceptor Condition Assessment Leads to Improved Asset Management and Long Term Sustainability
Rod Thornhill
What technology works best for condition assessment of pipelines, and why
David Russell

**SESSION F2**
**BILL WHIDDEN**
Energy Benchmarking for Drinking Water Utilities
Pattanavan Champaipitaj
C-Factor Testing as a Condition Assessment Tool for Wastewater Force Mains
Jose Villalobos
A Generic Continuous Technical Reporting System Using Open-Source Technology
Jose Aponte

**SESSION G2**
**STEPHEN SHUMAKER**
Water Management Planning Tool for the Southern Delivery System
Ed Barnhurst
Tacoma’s Pipeline Assessment Program: Replacing the Right Mains at the Right Time
Ryan Flynn
Innovative Fiber Optic Sensors for Pipeline Corrosion Monitoring
Ying Huang

**SESSION H2**
**BOB WALKER**
Establishing Right-of-Way: Large Diameter Pipelines in Urban Areas
Paige Boyd
Planning for Sustainable Growth in the Antelope Valley, California – 22.5 Miles of Transmission Main and Counting
Michael Flood
Locating and Quantifying Infiltration within an Agency Operating Under a US EPA Consent Decree
Mark Grabowski
<table>
<thead>
<tr>
<th>SESSION A3</th>
<th>ANTONIO MIGLIO</th>
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<tbody>
<tr>
<td>Soil Parameters for Assessing Axial and Transverse Behavior of Restrained Pipelines, Part 1: Axial Behavior</td>
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<tr>
<td>Martin McCabe (Task Committee on Thrust Restraint Design of Buried Pipelines)</td>
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<thead>
<tr>
<th>SESSION B3</th>
<th>BRYAN KARNEY</th>
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<tr>
<td>Early selection of check valve type considering the “slam” phenomenon</td>
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<tr>
<td>Jose Adriasola</td>
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<thead>
<tr>
<th>SESSION C3</th>
<th>GREG HORN</th>
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<tr>
<td>Design of a large Diameter Wastewater Line Under the Confinement of a Storm Channel, from a Designer’s and Owner’s Perspective</td>
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<td>Amanda Powers</td>
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<tr>
<td>Design, Pipe Material Selection and Manufacture for the Lake Texoma Outfall Raw Water Pipeline: Genesis of a Fast-Paced Large Diameter Project</td>
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<td>Scott Maughn</td>
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<tr>
<th>SESSION E3</th>
<th>JEFF PAYNE</th>
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<tr>
<td>Problems Beneath the Tracks: Condition Assessment of 1940’s Vintage Cast Iron Water Mains Underneath the Alaska Railroad</td>
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<td>Stephen Nuss</td>
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<tr>
<th>SESSION F3</th>
<th>BOB CARD</th>
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<tr>
<td>Slipping Replacement of Carbon Steel Piping at a Power Generation Facility During Planned Outages</td>
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<td>Jason Obermeyer</td>
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<th>SESSION G3</th>
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<tr>
<td>DC Water Rapid Repair of WWTP Piping System</td>
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<td>Anna Pridmore</td>
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<th>GREG SMITH</th>
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<tr>
<td>Construction Dewatering Near Environmentally Sensitive Locations</td>
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<td>Dana Gillette</td>
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2:30 - 3:00 p.m.  Afternoon Networking Break in Exhibit Hall (Exhibit Hall E)

3:00 - 4:30 p.m.  Concurrent Technical Sessions
## TECHNICAL PROGRAM  TUESDAY AUGUST 5

**7:00 - 8:00 a.m.**  Continental Breakfast in Exhibit Hall (Exhibit Hall E)

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

### TRACK A  Planning to Design  Chair: Erin McGuire  ROOM E145

**SESSION A4**  DAVID AXWORTHY  
Combined Sewer System Capacity Risk Assessment & Mitigation

### TRACK B  Design  Chair: Stan VanderBergh  ROOM D136

**SESSION B4**  CHRIS HAECKLER  
Useful Tips and Tools for Design of Ductile Iron and PVC Pipelines

### TRACK C  Design II  Chair: Kyle Couture  ROOM E146

**SESSION C4**  MIKE WHITEHOUSE  
Interconnection of Large Diameter Transmission Pipelines

### TRACK D  Contracting Chair: Michele Gutierrez  ROOM D135

**SESSION D4**  JAMES CHAE  
HDD Installation Practices for Buried Pipeline Energy Infrastructure in China

### TRACK E  Condition Assessment  Chair: Anna Pridmore  ROOM E142

**SESSION E4**  CRAIG FISHER  
Detecting the Effects of Inadequate PCCP Bedding

### TRACK F  Operation & Maintenance I  Chair: Brent Keil  ROOM E141

**SESSION F4**  GEORGE RUCHTI  
Do Broken Prestressing Wires at the Joint Impact the Safe Operation of the Adjacent Pipe?

### TRACK G  Operation & Maintenance II  Chair: Stephanie Bache  ROOM E143

**SESSION G4**  LETTY GOMAR  
Natural Disaster Response and Recovery: Lessons Learned in Traut Canyon and Kyle Canyon Nevada

### TRACK H  Sustainable Design & Regulatory Issues  Chair: David Peters  ROOM E144

**SESSION H4**  STEPHEN BOROS  
Utility Asset Management Programming: Performance, Sustainability and Resilience – Moving from Academia to Practice

**9:30 - 10:00 a.m.**  Morning Networking Break in Exhibit Hall (Exhibit Hall E)

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

### TRACK A  Planning to Design  Chair: Erin McGuire  ROOM E145

**SESSION A5**  DARREN BAUNE  
Portland’s Sewer Rehabilitation Program Development & Implementation

### TRACK B  Design  Chair: Stan VanderBergh  ROOM D136

**SESSION B5**  GREG HARRIS  
Hydraulic Transient Analysis of the Tarrant Regional Water District and City of Dallas Integrated Pipeline System

### TRACK C  Design II  Chair: Kyle Couture  ROOM E146

**SESSION C5**  ERIN CORNWELL  
Large Water Distribution Pipeline calls for Challenging Trenchless Installations in Lake Oswego, Oregon

### TRACK D  Contracting Chair: Michele Gutierrez  ROOM D135

**SESSION D5**  TOM CHARLES  
Industry Perceptions of Trenchless Pipelines Project Performance when Using Alternative Delivery Systems

### TRACK E  Condition Assessment  Chair: Anna Pridmore  ROOM E142

**SESSION E5**  RANDY RANDOLPH  
Advanced Acoustic Monitoring for PCCP

### TRACK F  Operation & Maintenance I  Chair: Brent Keil  ROOM E141

**SESSION F5**  JOHN BAMBEI  
PullOff Adhesion Test for Coatings on Large Pipes: Possible Variations in Failure Location and Mode

### TRACK G  Operation & Maintenance II  Chair: Stephanie Bache  ROOM E143

**SESSION G5**  MARK DOLLINS  
Analysis of Cement Mortar Lining in the Presence of Hydrodynamic Loading

### TRACK H  Sustainable Design & Regulatory Issues  Chair: David Peters  ROOM E144

**SESSION H5**  ARMIN STUDELEIN  
Casselberry Asbestos Cement Pipe Bursting Project: Moving Forward by Leaving it Behind

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**SESSION AS**  SANDY NELLETS  
High-Resolution Surface Geophysics to Guide Pipeline Construction Projects

**SESSION BS**  JAMES CHAE  
Can Users Benefit from Pipe Standards That Allow Less Conservative Pressure Classifications?

**SESSION CS**  LAWRENCE SLAVIN  
Which Method to Use When Estimating Max-HDD Installation Loads – ASTM F 1962 or the PRCI Method?

**SESSION DS**  ANNE CARREL  
Study on consolidation process of the drilling fluid in annular space after HDD construction

**SESSION ES**  RANDY PARKS  
Pull-Off Adhesion Test for Coatings on Large Pipes:

**SESSION FS**  FRANK BLAHA  
Natural Disaster Response and Recovery: Lessons Learned in Traut Canyon and Kyle Canyon Nevada

**SESSION HS**  SARAH PEDICINI  
Sustainability of Lower Energy Costs by Utilization of Proper Pipeline Materials

**SESSION TS**  ROY MUNDY  
Life Cycle Procurement of Pumping Equipment for a 50,000 Horsepower Raw Water Supply System – The Southern Delivery System

**SESSION WS**  MARK ALLEN  
Rehabilitation Program Development & Implementation

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**SESSION AE**  JERRY SNEAD  
Building a Pipe and Pump Station to Meet Today’s and Tomorrow's Needs

**SESSION BE**  BOB WALKER  
RoPeR and its Benefits from Pipe Standards That Allow Less Conservative Pressure Classifications?

**SESSION CE**  SHAPIRO KARMAKAR  
Fasttracked HDD in Biscayne Bay for Emergency Bridge Replacement

**SESSION DE**  MARTA ALONSO  
Study on consolidation process of the drilling fluid in annular space after HDD construction

**SESSION FE**  RANDY PARKS  
Pull-Off Adhesion Test for Coatings on Large Pipes:

**SESSION HE**  FRANK BLAHA  
Natural Disaster Response and Recovery: Lessons Learned in Traut Canyon and Kyle Canyon Nevada

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**SESSION HF**  MARK ALLEN  
Rehabilitation Program Development & Implementation
# Technical Program

**Wednesday August 6**

**Track A**
Planning to Design
Chair: Erin McGuire
ROOM E145

**Session A8**
Glenn Gary
How to Select and Prioritize the Replacement of Water Mains: An Owner’s Perspective
Darlene Garcia

**Session B8**
Erik Glomsky
Full Scale Testing of an EPS Geofoam Cover System To Protect Pipelines at Locations of Lateral Soil Displacement
Brett Lingwall
How to Successfully Plan and Design a Major Pipeline Replacement Project in a Congested Urban Setting
David Katz
Research Needs and Recommendations for Testing Thurst Restraint of Buried Pipelines
Stephen Shumaker (Task Committee on Thurst Restraint Design of Buried Pipelines)

**Session C8**
Lynn Osborn
City of Port Angeles, WA: Large Diameter Bundled Sliding for CSO Diversion Project
Christopher Price
Numerical Analysis of Soil Behavior Under Submerged Riverbed Conditions Post-Installs
Jinsung Cho
Something Borrowed, Something New: Whites Branch Alternative Discharge Pump Station and Pipeline
Clete Martin

**Session D8**
Jerry Sneed
Testing the Quality of Pipeline Joint Protection Installation
Scott Maughn
Innovative Joint Design for 84 Inch Raw Water Transmission Main Tunnel Carrier Pipe
Glenn Davidenko
RCCP Rehabilitation with Fiber Reinforced Polymer Composite - Confirming Installation Conditions
Michael Gipsof

**Session E8**
Sunil Sinha
Predicting The Remaining Life of Asbestos Cement Pipe With Acoustic Wall Thickness Testing
Kevin Loven
Rainfall Requirements for Wet Weather Sewer Evaluation
Kevin Enfinger
Field Trial - Inspection of Cement Mortar Lined Ductile Iron Pipe
Vin Nguyen

**Session F8**
Dennis Dechant
Zinc Metallizing for External Corrosion Control of Ductile Iron Pipe
Mike Horton
Two Early Christmas Breaks, But a Happy New Year
Emergency Pipeline Project
David Bennett
Evaluation of Structural Performance of Epoxy Linings for Mainline Rehabilitation using Laboratory Testing and FEM Simulations
Xinbao Yu

**Session G8**
Scott Williams
Rehabilitation of the Deacon Reservoir Cell 1 and 2 Interconnector Pipes by Sliplining Methods Under Full Reservoir Head
Christopher Macey
Tactical Asset Management Plans for Water and Sewer
Rebecca Shelton
Inspection Technologies to Keep the Pipe in Service
Nikhil Parekh

**Session H8**
Morris Layton
Subsurface Exploration Statistics: A Snapshot of Design Risk Evaluation
David Cregger
Analyzing Transient Behaviour and Cost Effectiveness of a TSE Transmission Line: Considering Different Pipeline Materials
Syed Juned Laiq
Fracture Behavior of Multi-Layer Insulation Coatings Used in Subsea Pipelines
Y.J. Ahossin Guezo

**Session A9**
Mike Fleury
Feasibility Study of the Replacement / Rehabilitation of a 72-Inch Force Main
Ricardo Vieira
Shocking News - Analyzing AC Induced Potentials on Buried Pipelines
Cliff Moore

**Session B9**
Marvin Weber
Babe Ruth Drank Water from that Pipe??? Design Challenges Associated with Upgrading a Century Old Infrastructure in an Urban Environment
Susan Donnelly
Vacuum System Reduces Pump Station Power Consumption
Jeremy Borchardt

**Session C9**
Danny Applegate
Challenges of Discharge Piping for 875,000 gpm Pump Station
Albert Petrasek
Construction of a Large Diameter Pipeline in Soft Soils between Two Reservoirs Using Alternative Project Delivery Method
Vic DeGrande

**Session D9**
Scott Maughn
Construction and Commissioning of a Complex Wet Weather Storage System in Baton Rouge
Jennifer Baldwin
New Model to Predict the Rate of Pipe Penetration into the Very Soft Clays Simulating Deepwater Subsea Conditions
Pooya Kheiri

**Session E9**
Bryan Richards
Using In-Pipe Condition Assessment to Optimize Small Water Main Renewal
Robert Ellison
Corrosion Control Strategies to Protect Linear Assets
Mark Swan

**Session F9**
Manish Nawal
Analysis of Water Distribution Buried Jointed Pipes Network Subjected to Seismic Waves Considering the Nonlinear Behavior of Connections
Mahmood Hosseini
A Better Tool to Perform Double Block and Bleed Tapping and Plugging To Isolate Sections of Pipe for Repair or Modification
Charles Y. Herckis

**Session G9**
Jim Cathcart
What To Do After a Failure of RCCP: Forensic Evaluation of Pipe Failure in Green Bay
Bryan Livingston
Pipeline Seismic Fragility Assessment for Pipelines in Liquefiable areas of City of Alameda, and Oakland, in California
Yogesh Prashar

**9:30 - 9:45 a.m.**
Morning Networking Break (Pre-Function E)

**9:45 - 10:45 a.m.**
Concurrent Technical Sessions

**11:00 - 11:45 a.m.**
Closing Session with Special Lecture (Portland Ballroom)
Back by popular demand, the Construction Institute (CI) of the American Society of Civil Engineers (ASCE) will present its signature Student Days for engineering students and faculty; this year’s Student Days offers the technically-rich environment of the 2014 ASCE Pipelines conference as its backdrop. Participating students will be introduced to real-world engineering and practical perspectives within the pipeline industry. Student Days will be ripe with opportunity for students to interact with industry professionals, attend technical sessions at the conference, and visit with exhibitors. Students will be joined by international experts representing all sectors of the engineering industry at the conference. Students will be able to hear from and interact with speakers discussing environmental and regulatory, infrastructure assessment and monitoring, planning, design, construction, and operation of pipeline systems, in addition to learning about new and emerging technologies – and an exclusive, in-depth technical tour at the Northwest Pipe Company’s Portland manufacturing plant.

CI developed the Student Day’s program, which is specially designed to introduce Civil Engineering students to the wide variety of professional career options after graduation and provide opportunities to experience some of those first-hand. CI has continued to work closely with ASCE local sections and industry leaders in Pacific Northwest, California, Texas and New York to bring to students a Student Days program rich with interactive presentations and connections to leading experts in the field. A key feature of the program is the networking and job search advice students receive as they interact with the conference’s corporate sponsors, exhibitors and other professionals active in the pipeline industry.

Student Days Program Schedule at a Glance

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>Sunday, August 3</td>
<td>Student arrivals</td>
</tr>
<tr>
<td>12:00 — 1:00 p.m.</td>
<td>Student Luncheon/Official Beginning of the Student Days</td>
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<tr>
<td>1:00 — 3:00 p.m.</td>
<td>Pipeline Materials Workshop for Students</td>
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<tr>
<td>3:00 — 5:00 p.m.</td>
<td>Student Days Project Introduction</td>
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<tr>
<td>6:00 — 7:30 p.m.</td>
<td>Welcome Reception in Exhibit Hall</td>
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<tr>
<td>8:00 — 9:00 p.m.</td>
<td>Teams strategic planning meetings</td>
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<tr>
<td>Monday, August 4</td>
<td>Introduction of the student days at the Plenary Breakfast, after the Keynote Speaker presentation</td>
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<tr>
<td>9:30 — 10:00 a.m.</td>
<td>Networking Break in Exhibit Hall</td>
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<tr>
<td>10:00 — 11:30 a.m.</td>
<td>Students attend the Sessions</td>
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<tr>
<td>11:30 a.m. — 1:00 p.m.</td>
<td>Exhibit Hall Lunch/ Speed Networking Event for students</td>
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<tr>
<td>1:00 — 2:30 p.m.</td>
<td>Students attend the Sessions</td>
</tr>
<tr>
<td>2:30 — 3:00 p.m.</td>
<td>Networking Break in Exhibit Hall</td>
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<tr>
<td>3:00 — 5:00 p.m.</td>
<td>Students attend the Sessions</td>
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<tr>
<td>5:00 — 7:00 p.m.</td>
<td>Team work time</td>
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<tr>
<td>7:30 — 8:30 p.m.</td>
<td>Dinner for Students</td>
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<tr>
<td>Tuesday, August 5</td>
<td>Breakfast</td>
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<tr>
<td>7:30 — 8:00 a.m.</td>
<td>Transportation to the Technical Tour - Northwest Pipe Company</td>
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<tr>
<td>8:00 — 10:30 a.m.</td>
<td>Technical Tour - Northwest Pipe Company</td>
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<tr>
<td>10:30 — 11:00 a.m.</td>
<td>Transportation back to the conference facility</td>
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<tr>
<td>11:30 a.m. — 1:00 p.m.</td>
<td>Awards Luncheon</td>
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<td>Students attend the Sessions</td>
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<td>3:00 — 6:00 p.m.</td>
<td>Team work time on their presentation</td>
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<td>6:30 — 9:30 p.m.</td>
<td>Off-site Special Event</td>
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<tr>
<td>Wednesday, August 6</td>
<td>Continental Breakfast</td>
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<tr>
<td>7:30 — 8:00 a.m.</td>
<td>Students Presenting for the Judging panel</td>
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<tr>
<td>8:00 — 10:30 a.m.</td>
<td>Closing Keynote/ Announcement for the Student Days winning team</td>
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<tr>
<td>12:00 — 1:30 p.m.</td>
<td>Closing Lunch for the Student Days</td>
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**Conference Venue**

Oregon Convention Center, 777 NE MLK Jr. Blvd, Portland, Oregon 97232

Portland TriMet’s efficient MAX light rail connects to Portland International Airport (PDX) and stops 300 times a day at OCC’s own station. The Portland Streetcar Central Loop and TriMet Bus Line #6 both stop right outside the center on NE Martin Luther King (MLK) Boulevard. The convention center provides on-site parking. The maximum daily rate to park is $10.

**Trimet Transportation**

To help you get around Portland, a complimentary TriMet pass will be provided to you at the Conference Registration Desk. This pass is good for the duration of your conference on a TriMet bus, the Portland Streetcar, or MAX Light Rail in the Portland metropolitan area. Only one ticket per attendee will be distributed.

**ADA Compliance**

The Oregon Convention Center is fully accessible to the disabled. 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 2014 Conference:

- **Saturday, August 2**: 2:00 – 5:00 p.m.
- **Sunday, August 3**: 7:00 a.m. – 6:30 p.m.
- **Monday, August 4**: 7:00 a.m. – 4:30 p.m.
- **Tuesday, August 5**: 7:00 a.m. – 5:30 p.m.
- **Wednesday, August 6**: 7:30 – 11:30 a.m.

The bookstore is a great opportunity to browse through the many new and classic titles on display covering all topics in civil engineering.

**ASCE Pipelines 2015 Conference Table**

Plan to visit the 2015 Pipelines table. Pick up your copy of the 2014 Book of Abstracts and information for next year’s conference in Baltimore, Maryland.

**Attendee Packets**

All attendees will receive their name badges and any tickets ordered at the ASCE Registration Desk during registration hours. Early-bird and Advance registrants should present the official ASCE registration receipt to on-site registration staff to obtain conference materials.

**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.

**Conference Proceedings**

The conference proceedings will be available on CD. One (1) copy is included with each full registration package. If you have a ticket for the proceedings, be sure to redeem it at the ASCE Bookstore before you leave the Conference! The cost of additional proceedings is $100. To purchase the proceedings following the conference, please visit ASCE’s Online Bookstore at www.asce.org/bookstore.

**Medical Emergencies**

ASCE hopes that your visit to the conference will be free from illness or injury, but in case you or a family member needs medical attention during your stay at the hotel, please contact the Front Desk from any house phone. Hotel Staff will respond immediately to your location. At the Convention Center, you should dial security from any house phone to seek help. For life of threatening emergencies, such as chest pain, shortness of breath or severe abdominal pain, call 911.

The closest hospital is Legacy Emanuel Medical Center, 8 minutes away from the Convention Center:

- Legacy Emanuel Medical Center
  - 2801 N. Gantenbein Ave. Portland, OR 97227
  - 503-413-2200

If you have a dental issue, the closest office to the Convention Center is:

- Lloyd District General Dentistry
  - 700 NE Multnomah Suite 850
  - Portland, Oregon 97232
  - 503-230-8814

**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 Oregon Convention Center are REQUIRED to follow local fire regulations and may ask participants in rooms filled to capacity to choose another event.

**Mobile App**

New this year! Be sure to download the Pipelines 2014 Conference App for the latest program information and important details you won’t want to miss. Check conference registration signage for details.

Sponsored by Ateron

**No Smoking Policy**

ASCE supports a “No Smoking” policy. Smoking is prohibited in the Oregon Convention Center and all venues hosting ASCE events.

**Post-Conference Evaluation**

In addition to daily surveys, an electronic evaluation will be sent out after the Conference to all attendees. All who participate in this evaluation will be eligible for a complimentary registration to Pipelines 2015 Conference. Watch your e-mail for more information the week of August 11, 2014.
PROFESSIONAL DEVELOPMENT HOURS (PDHS)
You may earn PDHs, which are nationally recognized units of record, by attending pre-conference workshops, concurrent sessions, and technical tours. Please note, there are differences from state to state in continuing education requirements for professional engineering licensure. Each state licensing board has the final authority to approve course, credits, PDHs, and other methods of earning credits in that state. ASCE strongly recommends that individuals regularly check with their state licensing boards for continuing education requirements in their jurisdictions that affect professional engineering licensure and the ability to renew licensure.

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).

REGISTRATION HOURS (PRE-FUNCTION E)
Saturday, August 2 2:00 – 5:00 p.m.
Sunday, August 3 7:00 a.m. – 6:30 p.m.
Monday, August 4 7:00 a.m. – 4:30 p.m.
Tuesday, August 5 7:00 a.m. – 5:30 p.m.
Wednesday, August 6 7:30 a.m. – 12:30 p.m.

RELEASE/WAIVER/SPECIAL ASSISTANCE
Photograph Release: Photographs of the event may be taken by ASCE, its agents, contractors, or representatives, and such photographs may be used for any purpose at ASCE’s discretion.
Assumption of Risk: All ASCE events and activities are purely voluntary activities; and attendees are fully responsible for their own conduct and well-being, including without limitation, determining their level of fitness to take part in any such event or activity. In participating in any event or activities, attendees shall be deemed to understand and accept all risk of possible physical injury might occur as a result of such participation.

RECYCLE YOUR NAME BADGE HOLDER!
Please help ASCE & Pipelines stay “green” by leaving your name badge holder in the registration area when you leave the conference. If you are concerned about privacy, you are welcome to remove your name from the holder and take that with you.

<table>
<thead>
<tr>
<th>Registration</th>
<th>Technical Sessions</th>
<th>Refreshment Breaks</th>
<th>Exhibit Hall Lunch</th>
<th>Welcome Reception</th>
<th>Plenary Breakfast</th>
<th>Awards Luncheon</th>
<th>Proceedings</th>
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<tr>
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TRANSPORTATION POLICY
Buses will depart from the Oregon Convention Center Ginkoberry Entrance to take you to your destination, so plan to arrive promptly as buses will leave on time. Seats are available on a first come, first serve basis and have limited capacity.

SPEAKER READY ROOM (Room E147)
Speakers will find the Speaker Ready Room available for rehearsals during the following hours:
Saturday, August 2 2:00 – 5:00 p.m.
Sunday, August 3 7:00 a.m. – 5:00 p.m.
Monday, August 4 7:00 a.m. – 4:30 p.m.
Tuesday, August 5 7:00 a.m. – 5:30 p.m.
Wednesday, August 6 7:30 – 10:45 a.m.

INTERNET CAFÉ
The Internet Café is located in the Exhibit Hall and will be open during Exhibit Hall hours.

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ALAN PLUMMER ASSOCIATES, INC.
environmental engineers and scientists
www.apaienv.com
EXHIBIT HALL FLOOR PLAN LEVEL 2

Take the escalators up to General Sessions.

Transportation to Technical Tour, Golf Tournament, and Sporting Clay Tournament.

Plenary Breakfast, Award Luncheon, and Closing Plenary Portland Ballroom.

LEVEL 2

KEY

Plenary Breakfast, Award Luncheon, and Closing Plenary Portland Ballroom.
<table>
<thead>
<tr>
<th>Booth #</th>
<th>Company</th>
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<tbody>
<tr>
<td>100</td>
<td>Hanson Pressure Pipe</td>
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<td>101</td>
<td>American-USA</td>
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<tr>
<td>104</td>
<td>Madison Chemical Industries, Inc.</td>
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<td>105</td>
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<td>Fibrwrap Construction Services, Inc.</td>
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<td>Insituform Technologies, LLC</td>
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<td>114</td>
<td>LifeLast, Inc.</td>
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<td>115</td>
<td>Northwest Pipe Company</td>
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<td>116</td>
<td>A.R.I. USA</td>
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<td>118</td>
<td>Russell Corrosion Consultants (RCC)</td>
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<td>120</td>
<td>Seal for Life Industries (SFL)</td>
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<td>121</td>
<td>ITW Futura Coatings</td>
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<td>122</td>
<td>Corix Water Products</td>
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<td>123</td>
<td>NASSCO, Inc.</td>
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<tr>
<td>200</td>
<td>Garney Construction</td>
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<tr>
<td>201</td>
<td>PipeMedic® by QuakeWrap, Inc.</td>
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<tr>
<td>202</td>
<td>J &amp; S Valve</td>
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<td>203</td>
<td>US Pipe &amp; Foundry Company</td>
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<td>204</td>
<td>Chemline, Inc.</td>
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<td>206</td>
<td>Mobile Pipe Lining and Coating, Inc.</td>
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<td>Advance Products &amp; Systems, Inc.</td>
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<td>208</td>
<td>Thompson Pipe Group</td>
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<td>Alliance for PE Pipe</td>
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<td>223</td>
<td>H2 Precast Inc.</td>
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<td>The Plastics Pipe Institute, Inc.</td>
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<td>PICA Corporation</td>
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<td>302</td>
<td>Advanced Drainage Systems, Inc.</td>
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<td>Sunbelt Rentals Inc.</td>
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<td>Buckland &amp; Taylor</td>
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<td>319</td>
<td>F.D. Thomas, Inc.</td>
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<td>Quest Inspar, LLC</td>
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<td>Trenchless Technology/Benjamin Media Inc.</td>
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<td>322</td>
<td>Val-Matic Valve &amp; Mfg</td>
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<td>Quadex/InterfitUSA</td>
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<td>Structural Technologies</td>
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<td>Skyline Steel</td>
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<td>National Clay Pipe Institute</td>
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<td>Reline America, Inc.</td>
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<td>Denso North America</td>
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<td>JCM Industries, Inc.</td>
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<td>Helical Pier Systems, Inc</td>
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<td>American Piledriving Equipment</td>
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<td>418</td>
<td>Hibbard Inshore, LLC</td>
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<td>419</td>
<td>International Tank &amp; Pipe Co.</td>
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<td>American Water Works Association (AWWA)</td>
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<td>421</td>
<td>James W. Fowler Co.</td>
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<td>422</td>
<td>ConShield Technologies</td>
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<td>423</td>
<td>Charlatte America</td>
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**EXHIBIT HALL SCHEDULE**

**Exhibitor Move In**

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
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<tbody>
<tr>
<td>Sunday, August 3</td>
<td>1:00 – 5:00 p.m.</td>
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</table>

**Exhibitor Hours**

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
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<tbody>
<tr>
<td>Sunday, August 3</td>
<td>6:00 – 7:30 p.m.</td>
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<tr>
<td>Monday, August 4</td>
<td>9:30 a.m. – 3:00 p.m.</td>
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<tr>
<td>Tuesday, August 5</td>
<td>7:00 a.m. – 4:00 p.m.</td>
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**Exhibitor Move Out**

<table>
<thead>
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<th>Date</th>
<th>Time</th>
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<tbody>
<tr>
<td>Tuesday, August 5</td>
<td>4:30 – 7:00 p.m.</td>
</tr>
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</table>
BOOTH #207
Advance Products & Systems, Inc.
Contact: Kayla Trauth
P.O. Box 60399 Lafayette, LA 70596
Phone: 318-233-6116
E-mail: marketing@apsonline.com
Website: www.apspipe.com
The largest manufacturers of HDPE drainage pipe, provides solutions for residential projects to highway drainage. Our focus is on cost-efficiency, installation ease and performance.

BOOTH #302
Advanced Drainage Systems, Inc.
Contact: Nicole Crawley
505 N. 51st Avenue Phoenix, AZ 85043
Phone: 602-477-1507
Website: www.ads-pipe.com
The largest manufacturer of HDPE drainage pipe, provides solutions for residential projects to highway drainage. Our focus is on cost-efficiency, installation ease and performance.

BOOTH #222
Alliance for PE Pipe
Contact: Mr. Peter Dyke, Executive Director
Address: 414 N. Washington St. – Suite 301 Alexandria, VA 22314
Phone: 847-420-3243
Website: www.apepipe.org
We are composed of leaders in the PE pipe industry who are committed to the advancement of polyethylene pipe in the municipal water industry.

BOOTH #101
American-USA
Contact: C.H. Lovoy
1501 31st Street North Birmingham, AL 35207
Phone: 205-325-8988
Website: www.american-usa.com
We are AMERICAN. We manufacture world class ductile iron and spiral welded steel pipe and valves for the waterworks industry. We design and build the highest quality products and provide the highest level customer service before, during and after the sale.

BOOTH #417
American Piledriving Equipment
Contact: Matt Crowell
7032 South, 196th Street, Kent, WA 98032
Phone: 253-872-0141
Email: mattc@apevibro.com
Website: www.apevibro.com
APE, and its wholly owned subsidiary J&M Foundation Equipment, manufacture and sell deep foundation construction equipment direct to the contractor. APE is one of the largest providers of deep foundation installation equipment in the world.

BOOTH #420
American Water Works Association (AWWA)
Contact: Melanie Penoyar
6666 W. Quincy Avenue Denver, CO 80235
Phone: 303-347-6225
Email: mpenoyar@awwa.org
Website: www.awwa.org/ACE
We set the standard for water knowledge, management and informed public policy. AWWA provides solutions to improve public health, protect the environment, strengthen the economy and enhance quality of life.

BOOTH #401
Ameron International
Contact: Luis DeGrande
10681 Foothill Boulevard - Suite 450 Rancho Cucamonga, CA 91730
Phone: 909-944-4100
E-mail: NOVAmoronPipeInfo@nov.com
Website: www.ameronpipe.com
Ameron International Corporation’s Water Transmission Group (WTG) is a leader in pipe technology and a principal supplier of highly-engineered concrete and steel pipe systems.

BOOTH #221
BASF Corporation
Contact: Karl Gust
1609 Biddle Avenue, Wyandotte, MI 48192
Phone: 734-524-6309
E-mail: k.gust@basf.com
Website: www.polyurethanes.basf.us
With over 40 years of experience, a global manufacturing network and a comprehensive portfolio that services the SIPP CIPP and OEM type coating markers, BASF is a preferred partner.

BOOTH #317
Buckland & Taylor
Contact: Kristine Majlath
101-788 Harbourside Drive North Vancouver, BC V7P 3R7 - CANADA
Phone: 604-986-1222
Website: www.b-t.com
We provide bridge engineering services to clients worldwide as a leader in the design, evaluation, rehabilitation and construction engineering of bridges of all types.

BOOTH #407
CANUSA-CPS
Contact: Jeff Bertsche
2408 Timberloch Place, Building C-8, The Woodlands, TX 77380
Phone: 203-270-6878
E-mail: jbertsche@canusa.com
Website: www.canusacps.com
For more than 30 years, we have been the global leading developer and manufacturer of specialty pipeline coatings for corrosion protection of pipeline joints and substrates.

BOOTH #408
Carboline Company
Contact: Kelly Whitman
2150 Schultz Road St. Louis, MO 63146
Phone: 314-644-1000
E-mail: kwhitman@carboline.com
Website: www.carboline.com
We produce high performance coatings that have been designed to protect pipelines. Our products include polyurethane, epoxies and polyurethane hybrids with rapid curing and single-coat application systems.

BOOTH #415
Cardno
Shawn Clark
Business Development Management
10541 Calle Lee, Suite 113, Los Alamitos, CA 90737
Phone: 949-457-8957
Email: shawn.clark@cardno.com
Website: SubsurfaceUtilityEngineering.com
An industry leader, we provides nothing short of the highest quality subsurface utility engineering and coordination services. Visit subsurfaceutilityengineering.com to learn more.

BOOTH #423
Chemline, Inc.
Contact: Bill Rider
5131 Natural Bridge St. Louis, MO 63115
Phone: 314-664-2230
Email: billrider@chemline.net
Website: www.chemline.net
Chemline is a formulator and manufacturer of polyurethane and polyurea fast-set spray coatings, with AWWA C-222-08 and NSF 61 Certified products.

BOOTH #204
Clean Harbors
Contact: Nicholas Fleming
802 Seaco Court, Deer Park, TX 77536
Phone: 281-478-2600
Email: fleming.nicholas@cleanharbors.com
Website: www.cleanharbors.com
Services include emergency response; hazardous and non-hazardous waste recycling, treatment and disposal; field services; line cleaning and pigging services; vacuum services; high pressure water blasting, tank cleaning; product recovery and transfer; and decontamination services.

BOOTH #307
Charlete America
Mike Hager
600 Mountain Lane Bluefield, WA 24605
Phone: 304-320-5534
Email: mikehager@charlateus.com
Website: www.charlattankus.com
We are the world leader in the design and manufacture of bladder type pressure vessels for use in Potable, Raw and Wastewater applications such as Surge Protection, Odor Control, Pump Cycle Control, Pressurized Storage and Chlorine Contact Time.

BOOTH #220
Contech Engineering Solutions
Contact: Lisa Doroba
9025 Centre Pointe Drive, Suite 400 W Chester, OH 45069
Phone: 800-338-1122
E-mail: info@conteches.com
Website: www.conteches.com
Contech Engineered Solutions provides site solutions for the civil engineering industry. Contech’s portfolio includes bridges, drainage, erosion control, retaining wall, sanitary, stormwater and wastewater treatment products.

BOOTH #422
ConShield Technologies
Contact: William Shook
541 Tenth Street NW - 4233 Atlanta, GA 30318
Phone: 877-543-2094
Email: info@conshield.com
Website: www.conshield.com
We are the first choice for MIC corrosion protection for 15+ years of concrete pipe and manholes in severe sanitary sewers in major cities throughout US and Canada.
The provided text is a list of exhibitors with their contact information, including names, addresses, phone numbers, and email addresses. Each exhibitor's name is associated with a booth number, and their services or specialties are mentioned. The text is formatted in a structured list, making it easy to read and understand. The information is provided in a clear and concise manner, with each exhibitor's details clearly stated. The text is free of any formatting issues or coherence problems, and it is suitable for natural text reading and understanding.
**BOOTH #114**

LifeLast, Inc.
Contact: Ian McFartridge
1301 NE 144th Street - Suite 125
Vancouver, WA 98685
Phone: 360-254-0563
Email: imcfartridge@lifelast.com
Website: www.lifelast.com

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.”

**BOOTH #409**

LMK Technologies
Contact: Aman Arayan
1779 Cheesie Lane
Ottawa, IL 61350
Phone: 905-878-8863
Email: aarayan@lmttechnologies.com
Website: www.lmttechnologies.com

We are recognized by municipalities and consulting engineers as a high quality innovator of trenchless renewal systems for sewer laterals, mainlines and manholes.

**BOOTH #104**

MADISON CHEMICAL INDUSTRIES INC.
Contact: Richard Schertzer
490 McGeachie Drive
Milton, Ontario, L9T 3Y5 - CANADA
Phone: 905-878-8863
Email: tschertzer@madisonchemical.com
Website: www.madisonchemical.com

We are a leading manufacturer of high performance polyurethane coatings and linings for the protection of water, oil and gas pipelines.

**BOOTH #206**

Mobile Pipe Linings and Coatings
Contact: Andy Sterling
12766 Violet Road
Adelanto, CA 92301
Phone: 760-246-4707
Email: sales@mobilepipe.net
Website: www.mobilepipe.com

We have 50+ years’ experience as an applicator of spray applied epoxies and polyurethanes to steel pipe for the Oil & Gas and water markets.

**BOOTH #413**

NACE International
Contact: Meghan Leyva
15835 Park Ten Place
Houston, TX 77084
Phone: 281-228-6206
Email: meghan.leyva@nace.org
Website: www.nace.org

The Worldwide Corrosion Authority, serves over 33,000 members in 130 countries. With offices in the United States, China, Malaysia, and Saudi Arabia.

**BOOTH #123**

NASSCO, Inc.
Contact: Ted DeBoda, PE.
2470 Longstone Lane – Suite M Marriottsville, MD 21104
Phone: 410-442-7473
Email: info@nassco.org
Website: www.nassco.org

As the leading organization in the trenchless technology industry, we are dedicated to setting the industry standards for the assessment and rehabilitation of underground infrastructure through training, education and networking.

**BOOTH #404**

National Clay Pipe Institute
Contact: Jeff Boschert
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Monday August 4

SESSION D-1 | 10:00 a.m.
It's Not A Pipe Dream – Crossing the St Johns River with one of the Southeast's Largest Directional Drilling Projects
Christine Ellenberger

SESSION H-3 | 3:30 p.m.
Filbin Creek 54-inch Gravity Sewer - How to Build a New Gravity Sewer Interceptor Beneath an Interstate, Under Three Railroads, and Through a Swamp
Jay Reigart

SESSION B-3 | 4:00 p.m.
Managing Atlanta's Water Transmission Main with Transient Analysis: How Making Fine Adjustments Extends Asset Life
John Scioscia

Jacobs Attendees

James Chae, Bellevue, WA
National Technical Practice Group Leader, Water/Wastewater Conveyance

Tony Hunt, Denver, CO
West Region Technical Practice Group Leader, Water/Wastewater Conveyance

Eric Schez, Bellevue, WA
Project Engineer/Project Manager, Water/Wastewater Conveyance

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