Collection Systems

Collections on the Coast: Investing in a Sustainable Future
April 8–11, 2018 | Virginia Beach, VA

CONFERENCE PROGRAM

This conference is held by the Water Environment Federation in cooperation with the Virginia Water Environment Association and The Water Research Foundation.
Local Connections, **Global Ideas**

Our clients face tough decisions with limited resources. That’s why we support leading water associations—like WEF—to help make great things possible for our industry.

WEF Specialty Conferences Elite Sponsor

hdrinc.com
Collection Systems 2018 Conference

April 8-11, 2018
Virginia Beach Convention Center
Virginia Beach, Virginia

This conference is held by the Water Environment Federation in cooperation with the Virginia Water Environment Association.
Dear Conference Participant,

The Water Environment Federation’s Collection System Committee, in cooperation with the Virginia Water Environment Association (VWEA) is pleased to bring you the Collection Systems 2018 Conference: Collections on the Coast – Investing in a Sustainable Future. This comprehensive program was developed to include sessions covering a wide range of collection system issues, including trenchless rehabilitation, SSO/CSO issues, planning, odor control, pump stations, operations/maintenance, asset management, project delivery, regionally important topics, and more.

As hosts of this conference, we want to welcome you to the beautiful and exciting city of Virginia Beach! At Collections Systems 2018 "Collections on the Coast," you will have the chance to experience a tremendous city located on the coast in southeastern Virginia. You will hear unique perspectives on collection systems topics and while enjoying a great environment to network and discuss the latest hot topics with your peers. Spring will finally be in season on April 8-11 as we welcome conference attendees from around the country.

When you arrive: We welcome you to please enjoy the many sites of coastal Virginia and Virginia Beach. The City offers beaches along the Atlantic Ocean and tons of fun for families, business professionals, and everyone in between. With a 3-mile boardwalk that stretches along its beach-lined oceanfront and the bayside First Landing State Park that marks the 1607 arrival of the Jamestown colonists from England, the “Beach” will not only offer unique perspectives on collection systems topics, but great tourist hotspots.

There are many venues within walking distance or a short ride from the Conference hotel too. Come early and don’t miss the Virginia Aquarium and Marine Science Center, the Old Cape Henry Lighthouse, the Back Bay National Wildlife Refuge, and Colonial Williamsburg.

Pre-Conference Workshops: Two Workshops are being offered on Sunday that will enhance your educational experience – Infiltration and Inflow Modeling for Collection System Utilities, and Findings from the Field – How to Evaluate Your I/I Reduction Program’s Performance and Report the Results to Your Board. Choose the one that will increase your agency’s effectiveness when you return to the office.

Opening General Session and Technical Sessions: The Opening General Session will highlight the history of the Hampton Roads Sanitation District (HRSD), ensuring clean water in the region since 1940, as well as a presentation on the critical Chesapeake Bay Bridge Tunnel. Join your friends and colleagues and share the OGS experience. Diverse technical sessions will then fill the three-day schedule.

Tours and Exhibition: We encourage you to take part in one or both of our local tours. The first goes to the Nansemond Treatment Plant, home of the Sustainable Water Initiative for Tomorrow (SWIFT), which meets clean water challenges for the Chesapeake Bay region. The second goes to the Bridge Street Pump Station and Coliseum Wet Weather Storage Facility. Additionally, we will host a mobile session Monday morning and a second mobile session of Tuesday afternoon covering emerging technologies/topics. Both mobile sessions will be held in the exhibit hall. During the networking breaks, visit with many of the exhibitors who will be joining us this year in Virginia Beach.

We look forward to sharing this experience with you and look forward to meeting you over the next several days. Thank you for attending the conference and enjoy your time in Virginia Beach.

Sincerely,

Joe Strauch      Kyle Logue
Specialty Conference Chair    Local Planning Group Chair
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conference Steering and Program Committee</td>
<td>1</td>
</tr>
<tr>
<td>Registration</td>
<td>3</td>
</tr>
<tr>
<td>Presenter and Moderator Information</td>
<td>3</td>
</tr>
<tr>
<td>Committee Meeting</td>
<td>3</td>
</tr>
<tr>
<td>Reception and Meal Functions</td>
<td>4</td>
</tr>
<tr>
<td>Continuing Education</td>
<td>5</td>
</tr>
<tr>
<td>Online Proceedings</td>
<td>7</td>
</tr>
<tr>
<td>Mobile App</td>
<td>7</td>
</tr>
<tr>
<td>Sponsors</td>
<td>8</td>
</tr>
<tr>
<td>WEF Policies &amp; Positions</td>
<td>9</td>
</tr>
<tr>
<td>WEF Social Media Policy</td>
<td>9</td>
</tr>
<tr>
<td>Conference Safety and Security</td>
<td>10</td>
</tr>
<tr>
<td>Pre- Conference Workshops</td>
<td>11</td>
</tr>
<tr>
<td>Facility Tours</td>
<td>12</td>
</tr>
<tr>
<td>Opening General Session</td>
<td>13</td>
</tr>
<tr>
<td>Technical Program</td>
<td>14</td>
</tr>
<tr>
<td>Program-at-a-Glance</td>
<td>29</td>
</tr>
<tr>
<td>The Exhibition</td>
<td>34</td>
</tr>
<tr>
<td>Sewer and Water Art Gallery (SWAG)</td>
<td>34</td>
</tr>
<tr>
<td>Exhibition Floor Plan</td>
<td>35</td>
</tr>
<tr>
<td>Exhibitor Directory</td>
<td>35</td>
</tr>
<tr>
<td>Presenter and Moderator Directory</td>
<td>52</td>
</tr>
<tr>
<td>Upcoming Education and Training Events</td>
<td>56</td>
</tr>
<tr>
<td>Conference Schedule At A Glance</td>
<td>57</td>
</tr>
</tbody>
</table>
COLLECTION SYSTEMS CONFERENCE COMMITTEE

Joseph Strauch
Gannett Fleming
Specialty Conference Committee Chair

Kyle Logue
Brown and Caldwell
Local Planning Group Chair

COLLECTION SYSTEMS SPECIALTY CONFERENCE COMMITTEE & LOCAL PLANNING GROUP

Scott Aurit
HDR

Ryan Clark
Kimley Horn

Ethan Edwards
Cowan Group Engineering

Tim Back
Back Municipal Consulting

Stacie Crandall
Hampton Roads Sanitation District

Tracy Fee
Brown and Caldwell

Kyle Ballance
Hazen and Sawyer

Laurissa Cubbage
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Rudy Fernandez
Rudy B. Fernandez, P. E., LLC

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Sherwood Logan

Daniel Doss
SD1 of Northern Kentucky

John Fletcher
Duke's Root Control, Inc

Carl Chan
MWH Global/Stantec
Walter Graf  
The Water Research Foundation

Jeffrey Griffiths  
Hydromax USA

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Greg Heath  
AECOM

Scott Helfrick  
ADS Environmental Services, Inc.

Shawn Heselton  
Hampton Roads Sanitation District

Jim Hewitt  
City of Akron

Jessica Hou  
Gannett Fleming

Phil Hubbard  
Hampton Roads Sanitation District

Luis Leon  
CDM Smith

Marty Malone  
CDM Smith

Troy McPherson  
Hazen and Sawyer

Kraig Moodie  
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US EPA

Aaron Nelson  
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Kate Nixon  
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Kathy Rabalais  
Virginia Water Environment Association

Ryan Radspinner  
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Jeff Scarano  
Hampton Roads Sanitation District

Dave Servidio  
Mott MacDonald

Jim Shelton  
Malcolm Pirnie, The Water Division of ARCADIS

Jimmy Stewart  
Pure Technologies

Dianne Sumego  
Black & Veatch

Carlos Toro  
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Kevin Waldron  
Olsson Associates

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St Louis MSD

Brent Werlein  
City of Virginia Beach

Christy Willson  
Horner & Shifrin, Inc.

Chris Wilson  
Brown and Caldwell

Matthias Wittenberg  
CDM Smith
REGISTRATION

All events are held at the Virginia Beach Convention Center.

The Registration Desk is in the Hall D Foyer and will be open at the following times:

**Hours:**
- Sunday, April 8 7:30 AM – 5:00 PM
- Monday, April 9 7:30 AM – 5:00 PM
- Tuesday, April 10 8:00 AM – 5:00 PM
- Wednesday, April 11 8:00 AM – 11:45 AM

PRESENTER AND MODERATOR INFORMATION

All presenters, alternates, and moderators should sign in at the conference Registration Desk and attend their assigned briefing.

Presenters, alternates, and session moderators participating Monday through Wednesday should attend their assigned briefing. Speakers should attend only once unless they are speaking on two different days. The Speaker Briefing and room schedule is as follows:

- Monday, April 9 — Room: 2CD 7:30 AM – 8:15 AM
  *Sessions 1 through 4
- Tuesday, April 10 — Room: 2CD 7:30 AM – 8:15 AM
  *Sessions 5 through 13

TECHNICAL DISCUSSION & COMMITTEE MEETING

Collection Systems Technical Discussion & Committee Meeting

**Room 4ABC**
**Tuesday, April 10**
**3:45 PM – 4:45 PM**

All attendees are invited and encouraged to participate in this meeting, which will provide information about WEF’s Collection Systems Committee (CSC) and how to get involved. The meeting is intended to be an overview of how the WEF CSC functions and will also include a discussion of technical issues important to those in our industry.
RECEPTION AND MEAL FUNCTIONS

Networking Reception
Monday, April 9
4:45 PM – 6:15 PM

The Networking Reception will be held in Hall D. Join us for an opportunity to view the exhibits, renew acquaintances, and make new contacts. Light hors d’oeuvres and refreshments will be served.

Sponsored by: Woolpert
  Infosense
  Gannett Fleming

Luncheons
Lunch will be provided for all full conference, daily registrants, students, expo only and exhibitors. Please advise staff as soon as possible if you have any special dietary requirements. The luncheons will be held:

Monday, April 9
11:45 AM – 1:30 PM
Room: Hall D
Sponsored by: Arcadis

Tuesday, April 10
11:45 AM – 1:30 PM
Room: Hall D

Networking Breaks
The Networking Breaks will be held

Monday, April 9
10:00 – 10:45 AM and 3:00 – 3:45 PM
Hall D

Tuesday April 10
10:00 – 10:45 AM and 3:00 – 3:45 PM
Hall D
Sponsored by: McKim & Creed, Inc.

Wednesday, April 11
10:00 – 10:15 AM
Meeting Room Foyer Area
NEW for the Collection Systems Conference™ 2018 - Continuing Education files available online!  https://ceu.experientevent.com/WEF185

You will be able to view your participation details and access your Continuing Education Credits for Workshops and Technical Sessions online. Attendees will have immediate access to their certificates and transcripts through an online portal for 1 year after this event. After that time CE files will have to be requested by email through WEF’s customer service group. These details will be posted on the CS page of WEF.org and emailed to event participants after the conference.

How Do I Receive Credit For this Conference?

To receive credit for all technical sessions and pre-conference workshops, please scan your badge when entering and exiting that activity.

If you cannot use the scanner, fill out a Continuing Education Request Form available at the registration desk, and be sure to have a room monitor initial at each entry and exit from a session. Attendees that do not use the badge scanning system will have to submit their CE Request Form to the Registration Desk at the end of the conference.

Pre-Conference Workshops:

WEF offers Continuing Education Units (CEUs) for participation in workshops. **One CEU is the equivalent to 10 hours** of training or formal instruction. These are distributed for structured, relevant professional training above and beyond that of initial certification or employment in a particular field.

Technical Sessions:

WEF offers Professional Development Hours (PDHs) for participation in technical sessions. **A PDH is defined as one hour** spent engaged in an activity that contributes to the advancement or enhancement of professional skills or scientific knowledge of a professional engineer or operator.

When Will I Receive Credits For this Conference?

Certificates will be available immediately upon receiving the website link after the conference.

For those who did not participate in the badge scanning, certificates and transcripts will be emailed to participants within 8 weeks after this conference. Please keep in mind that although WEF does provide these files, most states will require the individual licensee to report continuing education credits.

**Note:** Educational Credits will not be recorded and documentation will not be distributed unless the attendee is a confirmed registrant of this event and the proper steps are is completed as indicated in the directions provided.
Are WEF Continuing Education Credits Approved in My State?

WEF applies for approval in many states and will be happy to work with individuals and Member Associations for additional state or agency approvals upon request. In addition, WEF has been approved as a Training Provider through the following:

The Florida Board of Professional Engineers, the New York State Department of Education, and the Ohio EPA. Many other states accept WEF PDH credits and WEF CEU credits without issue. For example: California (CWEA), Michigan, Nevada, and New Jersey.

What Else Do I Need to Know?

WEF follows the International Association of Continuing Education and Training (IACET) guidelines along with state-specific regulations to achieve strict policies and procedures regarding its Continuing Education Program. WEF calculates education credits following a standardized method that is the most widely accepted by certification and licensing agencies. However, many states differ in the type and/or number of credits they will approve for educational events. Because of this, participants are responsible for exploring their state requirements and for ensuring that WEF conference credits are accepted.

Service and Support...

In keeping with IACET guidelines, WEF maintains a database of all continuing education files for a minimum of 7 years. You may contact WEF’s Customer Service Team between the hours of 8:30am and 5:00pm EST, Monday through Friday to request these files. Please call 1-800-666-0206 or submit an email request to csc@wef.org.

State Credit Calculations:

*Some state licensing boards will accept CEUs for session under 3 hours in length. Some use different acronyms for training credits. In most instances the credits issued by WEF can be converted to meet state specific requirements that vary from the system used by WEF. This is usually managed at the state level using the following conversion method:

1.0 CEU = 10 Hours of session time
1.0 PDH = 1 Hour of session time
1.0 Contact Hour = 1 Hour of session time

For example: 1.2 CEU Credits = 12.0 PDH Credits or 17.0 PDH Credits could equate to 1.7 CEU Credits depending on individual state regulations.

*CEU & PDH credits are available for Workshops to Professional Engineers licensed in the state of New York (NYSED). Please visit www.wef.org/CECs for more details related to WEF’s Continuing Education Program.

For more information regarding WEF’s Continuing Education Program, please visit www.wef.org/CECs.
ONLINE PROCEEDINGS

Conference proceedings, consisting of manuscripts for each presentation, have been made available through an online portal. Advance registrants within Full Conference, Daily, Student, and Exhibiting categories will receive access to the CS 2018 online proceedings on the day prior to the conference. Onsite registrants will receive an access link following the event’s conclusion.

Copies of proceedings may be ordered after the conference at the member rate of $100 USD/nonmember rate of $150 USD. All orders will be processed after conclusion of the conference. You may call 1-800-666-0206, or visit www.wef.org/ShopWEF and ask for Stock Number – CPCS1803

MOBILE APP

Get More Out of Collection Systems

WEF is pleased to offer the WEF Events Mobile App which includes Collection Systems. Features include floor plans, enhanced exhibitor directory listings, a global search function, and a schedule that can incorporate both sessions and your own personal agenda items.

Download the WEF Events Mobile App now for access to all current and future WEF events. Search “WEF Events” in the Google Play OR Apple App Store. All other web-enabled devices can access the app via the web at m.core-apps.com/wefevents.

We need your feedback! Please provide feedback on individual presentations, sessions, workshops, and more on the mobile app!
We would like to thank the following sponsoring companies for their contributions to the conference and program.

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Gannett Fleming
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HDR
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ARCADIS
www.arcadis.com
Monday Luncheon

Doetsch
www.doetschenv.com
Tote Bag
Booth 204

McKim & Creed
www.mckimcreed.com
Tuesday Networking Break
Booth 221

S. Vaughan
www.chopperpumps.com
Conference Program Ad
Booth 512

Woolpert
www.woolpert.com
Networking Reception
WEF POLICIES & POSITIONS

WEF's Vision
A community of empowered professionals creating a healthy global water environment.

Core Values
Leadership, Passion, Scholarship, and Collaboration, and Service

WEF Policies
WEF respects and takes the broadest view of human diversity and inclusion and is committed to providing a professional, safe, and welcoming environment at its events for all water professionals and their guests. WEF expects all sponsors, speakers, attendees, media, exhibitors and other participants to uphold our commitment to diversity and inclusion by helping us provide a positive conference environment for everyone.

For more information, please see WEF’s Diversity and Inclusivity Policy, as well as WEF’s Non-Discrimination and Harassment Policy at www.wef.org/about/about-wef.

Reporting Concerns
If you have any concerns during this conference, please stop by the conference registration desk in the B Lobby of the Oregon Convention Center or you may email the WEF Executive Director Dr. Eileen O’Neill at eoneill@wef.org.

WEF SOCIAL MEDIA POLICY

WEF strongly encourages the use of social media to share your experiences at our event. This includes sharing interesting quotes or information, taking pictures with colleagues, and using the event hashtag. However, to protect intellectual property, videotaping, filming, or live-streaming of any workshop or technical session presentation, or exhibit booth is prohibited. Any participant violating this policy must relinquish the media and may be removed from the conference. Also, promotional or commercial use of photographs taken at WEFTEC and other WEF conferences is strictly prohibited. If you are interested in content, materials, or products, please consider talking to the speaker or exhibitor, who may provide the information or grant permission.
WEF works hard to provide a comfortable and safe environment during our meetings and events, including contracting with private security firms and off-duty police officers when required. Your help also is needed to provide a safe and secure environment. WEF recommends that you follow these safety guidelines:

1. **Share your plans.** Advise a family member or friend of your travel plans, including the dates you will be gone, how you will travel to the meeting or event, and where you are staying;

2. **Protect your identity.** Wear your name badge only inside the meeting or event venue; remove and secure your name badge when going to and from the venue; when disposing of your name badge, scratch out or destroy your name and/or the QR code to protect your personal information;

3. **Plan for an emergency.** Be aware of your surroundings. Know where the nearest exits are located. Use the buddy system. Exchange contact information with another event attendee. In case of a venue evacuation, agree where you will meet up. Call for help if your buddy doesn't meet up at the agreed location within a reasonable amount of time.

4. **See something, say something.** If you see something that raises a safety or security concern, please follow the instructions printed on the back of your name badge to alert security personnel.

TO REPORT A MEDICAL EMERGENCY, FIRE SAFETY OR SECURITY CONCERN DIAL at the Virginia Beach Convention Center (VBCC), please contact the VBCC Security Main Office immediately.

- Dial (757) 385-2152 from any phone
- Ask any uniformed VBCC employee to assist you

Virginia Beach Convention Center
1000 19th Street
Virginia Beach, VA 23451
Phone: 757-385-2000

Please see the “Conference Safety and Security” link on the WEF Collection Systems Mobile App for a full list of all Emergency Procedures.
*(Search “WEF Events” in the Google Play/Apple App Store to download the app.)*
PRE-CONFERENCE WORKSHOPS

(Separate registration fees apply)

Pre-Conference Workshops
Sunday, April 8
8:30 AM - 5:00 PM

Workshop A
Infiltration and Inflow Modeling for Collection System Utilities

This workshop will provide attendees with an understanding of rainfall-derived infiltration and inflow (RDII) modeling and monitoring best practices for establishing effective infiltration and inflow (I/I) reduction and remediation programs. Case studies on how these practices reduced the overall cost of compliance programs will be discussed. Break-out sessions will provide attendees with an opportunity to analyze monitoring data and try different computer tools for determining RDII.

Workshop B
Findings from the Field – How to Evaluate Your I/I Reduction Program's Performance and Report the Results to Your Board

This workshop will cover topics including I/I reduction program strategy and key performance indicators, integration of capacity and condition improvements, industry practices for pre- and post-I/I reduction evaluations using monitoring and modeling techniques, public outreach efforts, return-on-investment reporting, and "reporting to the board" on program progress. The focus would be to relate technical data to board members with non-technical backgrounds. It will include lessons learned on reporting unsuccessful results and using feedback to reinvent established programs and give them "fresh legs."
(Separate registration fees apply)

Facility Tour 1: Nansemond Treatment Plant, Suffolk, Virginia
Tuesday, April 10
8:30 AM to 12:30 PM
SWIFT Research Center
Meet at the Registration Desk at 8:15 AM

The Sustainable Water Initiative for Tomorrow (SWIFT) Program was conceived as an idea to assist with many of these challenges. Rather than discharging more than 120 MGD each day into the Chesapeake Bay, HRSD is proposing to implement an advanced water treatment system on the tail end of the treatment process at several of its plants and then inject the treat water back into the aquifer. There are many technical challenges involving consistency of treatment to drinking water standards, installation of the injection wells, and addressing water chemistry for the wells. HRSD will be completing an innovating demonstration pilot facility and research center in early 2018 at its Nansemond Treatment Plant in Suffolk, Virginia. This tour will provide a complete background on the issues the region is facing and how HRSD is working to help with the SWIFT Program. HRSD staff, operators, and consultants will be on hand to discuss the two facilities and answer questions.

Facility Tour 2: Bridge Street Pump Station, Hampton, VA, and Coliseum Storage Facility, Hampton, VA
Wednesday, April 11
1:00 PM to 5:00 PM
Coliseum Wet Weather Storage Facility and Bridge Street Pump Station
Meet at the Registration Desk at 12:45 PM

For the past several years, HRSD, the regional wastewater collection and treatment utility in Hampton Roads, has been implementing projects as part of a federal Consent Decree to reduce the occurrence of sanitary sewer overflows. A variety of projects have been already constructed in addition to the recently-developed Integrated Plan/Regional Wet Weather Management Plan with more than $2 billion in proposed projects. This tour will visit two facilities in Hampton, Virginia, which typify the projects included in the plan. The Coliseum Wet Weather Storage Facility and Pressure Reducing Station includes a 2.4 million gallon above ground storage tank, odor control facility, and pumping station that is responsible for shaving peak wet weather sewer flows off the downstream system and reducing upstream pressures. This is currently the only wet weather storage facility of its kind in the Hampton Roads region. The second stop on this tour will be a newly constructed regional wet well pumping station at Bridge Street near downtown Hampton.
OPENING GENERAL SESSION

Monday, April 9                          Room: 5ABC
8:30AM – 10:00AM

8:30 AM  WEF Collection Systems Conference Chair Welcome
Joe Strauch, Gannett Fleming, Inc., Specialty Conference
Committee Chair
Kyle Logue, Brown and Caldwell, Local Planning Group Chair

8:35 AM  WEF Welcome
Peter Vanrolleghem, model EAU-Université Laval, WEF Board
of Trustees

8:40 AM  Virginia Beach Welcome and Introduction of Speakers
Phil Hubbard, HRSD, Local Planning Group Co-Chair

8:45 AM  History of HRSD – 75 Years
Ted Henifin, HRSD

9:15 AM  Chesapeake Bay Bridge Tunnel
Jeff Holland, Chesapeake Bay Bridge Tunnel

9:55 AM  2019 Conference Introduction
Bradley Fix, Shelbyville Water Resource Recovery Facility

10:00 AM Session Adjourns for Exhibition Hall Opening
Mobile Session I

Monday, April 9
10:30 AM-11:50 AM

Facilitators: Jim Shelton, Arcadis; Carlos Toro, Brown and Caldwell; Phil Hubbard, HRSD; Dave Hofer, Johnson, Mirmiran & Thompson, Inc.; Karyn Stickel, Hubbell, Roth & Clark, Inc.; Jennifer Steffens, Pure Tech; Jimmy Stewart, Pure Tech; Mark McQuire, Evoqua; Sean Bell, Wade Trim

The five exhibitors listed below will each be holding the same 20 minute presentation three times in a row. Participants are invited to join a different presentation at each of the times listed below. Choose the top three you would like to attend. Each presentation happens at the exhibitor’s booth. Presentations kickoff concurrently at: 10:35 AM, 11:00 AM, and 11:25 AM in each of the five booths.

10:30 AM Mobile Session Introduction at entrance to exhibit hall
10:35 AM 5 Simultaneous Presentation A
11:00 AM 5 Simultaneous Presentation B
11:25 AM 5 Simultaneous Presentation C

Booth: 201 Utilizing Focused Electrode Leak Locating (FELL) to Certify CIPP Liner Watertightness
Mark Grabowski, Electro Scan

Booth: 310 Flow Monitoring Fundamentals -- an Overview of Technologies and Their Applications
Kevin Enfinger, ADS

Booth 405 Trenchless, Mechanical Point Repair for Cost-Effective Rehabilitation
Nick Sebastian, Pipeline Renewal Technologies at Envirosight

Booth 410 O&M Considerations for Pressure Sewer Systems
Keith McHale, Environment One

Booth 110 Geospray Geopolymer Mortar System for Structural Rehabilitation of Storm and Sewer Pipe Infrastructure
Scott Naiva, Milliken

11:50 PM Session Adjourns for Luncheon in Exhibit Hall
Session 01: Odor Control  
Room: 5ABC  
Monday, April 9  
10:45 AM – 11:45 AM

**Moderators:** Katherine Nixon, City of Virginia Beach; Jessica Hou, Gannett Fleming

**10:45 AM**  
**Town of Cary, NC. Preventing A Collection System Odor Issue—From Concept Through Final Performance Test and Beyond**  
Philip Wolstenholme, Brown and Caldwell; Jarrod Buchanan, Town of Cary; Ryan Sprowl, Brown and Caldwell

**11:15 AM**  
**Performance of Combined Two-Stage Biotower and Carbon System: When Great is not quite good enough.**  
Chris Easter, HDR; Mark Feltner, Christopher Wilson, Andrew Keisel, HRSD

**11:45 AM**  
**Session Adjourns for Luncheon in Exhibit Hall**
Session 02: Trenchless  
Monday, April 9  
1:30 PM – 4:45 PM

Moderators: Dianne Sumego, Black & Veatch; Dave Servidio, Mott MacDonald

1:30 PM  Groundwater Impacts on Sewer Relocation using Trenchless Technologies Near and Under I-405 in Renton, Washington  
Erik Waligorski, Carollo Engineers; Dave Christensen, Michael Benoit, City of Renton

2:00 PM  Alternate Sewer Rehabilitation Methods: EXpanding the Toolbox  
Joe Nagy, Citizens Energy Group; Kate Hughes, Wessler Engineering

2:30 PM  Pulled in All Directions: A Case Study in Maximizing Value with Risk Mitigation for An Urban Sewer Interceptor and Tunnels  
Joshua Farmer, Kyle Drumheller, Hazen and Sawyer; Brian Stone, Loudoun Water

3:00 PM  Networking Break

3:45 PM  Rehabilitating a Critical Large Diameter Sewer Under a Levee and a Historic Park  
Prabhushankar Chandrasekeran, Mathew Roder, Greeley and Hansen; Glen Diaz, Aaron Hughes, WSSC Water

Marc Lehmann, John Schroeder, CDM Smith; Jeffrey Bowra, Capital Region Water

4:45 PM  Session Adjoins for Networking Reception in Exhibit Hall
Session 03: System Analysis

Room: 4ABC

Monday, April 9

1:30 PM – 4:45 PM

Moderators: Gary Moore, Washington University in St Louis; Scott Helfrick, IDEX Corp

1:30 PM  Inspecting 100 Year Old Sewers- Which One Should We Inspect First To Understand Condition Assessment?
Scott Belz, AECOM; Cecilia Mazzei, City of Cleveland Division of Water Pollution Control; Costas Kontos, AECOM; Eric Dunn, Brown and Caldwell

2:00 PM  Sewer System Data Analytics Substituting for Flow Monitoring
Frank Qiao, Michael Wang Hazen and Sawyer

2:30 PM  Challenges Met and Lessons Learned, Managing a Consent Decree
Carla Muscarella, Woolpert, Inc.; Darren Eastall DeKalb County Dept. of Watershed Management

3:00 PM  Networking Break

3:45 PM  Predicting and Preventing SSOs in a Wastewater Collection System
Ahmad Habibian, CDM Smith; Jennifer Williams, Robert Judy, City of Columbia, SC Wastewater Division; William Adams, CDM Smith

4:15 PM  Risking It All: A Comprehensive Collection System Risk-Based Assessment in InfoMaster
Doug Ashworth, Cullen Carlson, Freese & Nichols Inc; Corrie Bondar, City of Durham; A. Rahman Kafray, City of Garland

Alternate  Comparing Two Different Ways to Approach Pipeline Renewal Models
David Baranowski, Carollo Engineers, Inc.

4:45 PM  Session Adjourns for Networking Reception in Exhibit Hall
<table>
<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:30 PM</td>
<td>Clearing The Fog: Fats, Oils, and Grease Management and SSOs</td>
<td>Brent Werlein, City of Virginia Beach</td>
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<tr>
<td>2:00 PM</td>
<td>Rehabilitation of a 67.0 MGD Treatment Plant Influent using Trenchless Technologies</td>
<td>Paul Longo, Dewberry; Shwan Fatah, Fairfax County; Bob Quackenbush, SAK Construction</td>
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<tr>
<td>2:30 PM</td>
<td>Tracking, Quantifying, And Mitigating Saltwater Inflow And Infiltration</td>
<td>Robert Radspinner, Kimberly Peterson, Robert Bohon, HRSD</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>Networking Break</td>
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<tr>
<td>3:45 PM</td>
<td>Location, Assessment, and Repair of Wire Breaks on a 30- and 42-inch PCCP Force Main</td>
<td>Natasha Schmidt, Fairfax County Government; Carolyn Weber, Fairfax County WDCD</td>
</tr>
<tr>
<td>4:15 PM</td>
<td>HRSD’s Vision for Advanced Water Treatment and Managed Aquifer Recharge in Eastern Virginia, USA: Sustainable Water Initiative for Tomorrow (SWIFT)</td>
<td>Charles Bott, John Dano, Germano Salazar-Benites, Christopher Wilson, Lauren Zuravnsky, Jamie Mitchell, HRSD; Tyler Nading, Larry Schimmoller, Daniel Holloway, CH2M; Edward Henifin, HRSD</td>
</tr>
<tr>
<td>Alternate</td>
<td>Who Are You Telling What and How?</td>
<td>Drew Lankford, Chris Wojtowicz, Virginia Beach Public Works</td>
</tr>
<tr>
<td>4:45 PM</td>
<td>Session Adjourns for Networking Reception in Exhibit Hall</td>
<td></td>
</tr>
</tbody>
</table>
Session 05: Planning
Tuesday, April 10
8:30 AM – 11:45 AM

Moderators: Greg Heath, AECOM; Dianne Sumego, Black & Veatch

8:30 AM  
Next Generation Planning in the City of Los Angeles: Flow Projections for Long-Term Urban Metropolitan Growth
Adel Hagekhalil, Ali Poosti, Fernando Gonzalez, Javier Dennis, Manik Mohandas, LA Sanitation, Los Angeles, CA; Chris Ranck, Arcadis; Venkat Radhakrishnan, Arcadis, Los Angeles, CA; Karen Johnson, Water Resources Planning, Santa Ana, CA

9:00 AM  
Evaluating Alternative Binder Materials for Sewer Collection System Concrete Structures to Reduce Fat, Oil, and Grease Related Sanitary Sewer Overflows
Samrin Ahmed Kusum, Mohammad Pour-Ghaz, Joel Ducoste, North Carolina State University

9:30 AM  
City of Airdrie Utility Master Planning: Integrating Overarching Inter-municipal Government Policies, Network Modelling and Asset Management to Ensure Sustainable and Sound Infrastructure for Short- and Long-Term Planning Needs
Sarah Barbosa, Geoffrey Schulmeister; ISL Engineering & Land Services LTD

10:00 AM  
Networking Break

10:45 AM  
Taking the Labels Off - Collaborative Approach to Regional Project Planning Yields District-Wide Benefits
Jim Mallorey, Metro Wastewater Reclamation District; John Rehring, Erica Corbett, Carollo Engineers

11:15 AM  
Challenges and Successful Strategies in Developing & Implementing a Capacity Assurance Program
Joe Herman, Stantec; Craig Prater, Lexington-Fayette Urban County Government

11:45 AM  
Session Adjourns for Luncheon in Exhibit Hall
Session 06: SSO/CSO
Room: 4ABC
Tuesday, April 10
8:30 AM – 11:45 AM

Moderators: Dave Servidio, Mott MacDonald; Carl Chan, Stantec

8:30 AM  A Case Study for Updating Design Storm Rainfall Hyetographs For Houston Public Works
Fazle Rabbi, Houston Texas Government; Baxter Vieux, Vieux & Associates Inc; Pratistha Pradhan, Houston Public Works

9:00 AM  Basic Hydraulics Alleviates a Thirty-Year-Old Overflow
Taylor Turner, Arcadis; Matthew Easterbrook, Chesterfield County

9:30 AM  Developing Solutions to Meet Regulatory Constraints and Long-Term Goals
Ted Bluver, Greeley and Hansen, LLC; Tim Leach, GPSD

10:00 AM  Networking Break

10:45 AM  Innovative Business Case Evaluation Guides Portland, Maine Through Tough Choices Among CSO Alternatives
Kate Mignone, AECOM; Nancy Gallinaro, City of Portland; Owens McCullough, Sebago Technics; Greg Heath, Jason Weiss, AECOM

11:15 AM  The Wastewater Tsunami Is Coming - How Do We Stop It?
Tarlton Smith, Freese & Nichols; Jennifer Baldwin, CH2M HILL

11:45 AM  Session Adjourns for Luncheon in Exhibit Hall
Session 07: Potpourri
Tuesday, April 10
8:30 AM – 11:45 AM

Moderators: Christina Willson, Horner & Shifrin; Kraig Moodie, FloWav, Inc

8:30 AM  Pilot Flow Monitoring Program Tests Meter Capabilities
Kelly Loyd, Black & Veatch; Jim Mallorey, Amy Atwater, Metro Wastewater Reclamation District; Derek Wurst, Black & Veatch

9:00 AM  Using Remote Sensors in the Collection System to Protect Treatment Processes
Paul Bixel, Heather Phillips, Anthony Kurkowski, Joseph Foster, Floyd Koder, Tonya Roberts, Ira Speer, Dewayne McAllister, City of Olathe KS

9:30 AM  The City Beautiful H2O Program Plan: An Integrated Wet Weather Plan for Pennsylvania's Capital City
Claire Maulhardt, Capital Region Water; John Aldrich, CDM Smith

10:00 AM  Networking Break

10:45 AM  Ground Truthing Oakland Wastewater Treatment Plant and Pump Station Flow Meters for Improved Peak Wet Weather Flow Management and Process Control, City of Topeka, Kansas
Michael Lorenzo, Andrew Wright, Gregory Meyer, Ethan Meyer, Bartlett & West Engineers Inc; Sylvia Davis, Michelle Neiswender, Zachary Stueve, Eric Carman, James Dodds, Kyle Salmon, Deedric Hagans, City of Topeka Kansas

11:15 AM  Using a Flow Dynamics 2D Model to Develop Street Flooding Solutions in a Highly Transited Urban Area
Yovanni Catano, Stantec; David Bedoya

Alternate  Managing Sewer Rehabilitation Design with the Push of a Button
Kai Iaukea, Stantec

Alternate  Integrated Plan Combining House-Level I/I Mitigation Program and GI Technology to Avoid Street Flooding – Case Study: Newton-Bedford Blueprint Columbus
Hazem Gheith, Qiuli Lu, Arcadis

11:45 AM  Session Adjourns for Luncheon in Exhibit Hall
Mobile Session II: Emerging Topics and Technologies
Tuesday, April 10
12:45 PM – 1:45 PM

Facilitators: Jim Shelton, Arcadis; Carlos Toro, Brown and Caldwell; Phil Hubbard, HRSD; Dave Hofer, Johnson, Mirmiran & Thompson, Inc.; Raj Vaidya, CDM Smith; Karyn Stickel, Hubbell, Roth & Clark, Inc.; Jennifer Steffens, Pure Tech; Jimmy Stewart, Pure Tech; Mark McQuire, Evoqua; Ashley Smart, FloWav

The five exhibitors listed below will each be holding the same 20 minute presentation three times in a row. Participants are invited to join a different presentation at each of the times listed below. Choose the top three you would like to attend. Each presentation happens at the exhibitor’s booth. As these sessions are about emerging topics and technologies, the presentations may have a sales focus. Presentations kickoff concurrently at 12:45 PM, 1:05 PM, and 1:25 PM in each of the five booths.

12:40 PM Mobile Session Introduction at entrance to exhibit hall
12:45 PM 5 Simultaneous Presentation A
1:05 PM 5 Simultaneous Presentation B
1:25 PM 5 Simultaneous Presentation C

Booth 502 FloWav Solutions Let You Monitor Top To Bottom - Learn How RADAR and The Raven Eye Can Help
Kraig Moodie, FloWav

Booth 200 Transient Technology for Non-Invasive Pipe Condition Assessment
Jeffrey Griffiths, Hydromax

Booth 510 Utilizing Acoustic Inspection to Prioritize Sewer Cleaning
Alex Churchill, Infosense

Booth 405 The Value of Manhole Inspection as Part of Regular Sewer Inspection
Andrew Wicker, Envirosight

Booth 520 Advanced Liquid Phase Odor Control and Monitoring
Calvin Horst, Evoqua
Session 08: Pump Stations
Tuesday, April 10
1:30 PM – 3:00 PM

Moderators: Jessica Hou, Gannett Fleming; Christopher Wilson, Brown and Caldwell

1:30 PM  Preparing for the Unexpected During Design and Construction
Sierra McCreary, Black & Veatch; Timothy Weaver, Juli Springer, City of Springfield, OH

2:00 PM  Difficult Run – It’s More than Just a Name: Best Practices from Restoring a 36” Wastewater Force Main and Pump Station
Xavier Buser, Hazen and Sawyer; Matt Van Horn, Hazen and Sawyer; John Royse, Fairfax County, VA

2:30 PM  Cost-Effectively Upgrading an Old, Combined Sewer Pump Station
Jennie Celik, Alison Schreiber, Northeast Ohio Regional Sewer District; Rich Atoulikian, Douglas Mohn, HDR

Alternate  No One Wants It, but Everyone Needs it: Building an 8.5 MGD Wastewater System for the 5-Billion Dollar Mile
Clayton Barnard, Mazen Kawasmi, Jacob Pannell, Freese and Nichols, Inc.; Arthur Hartle, Frisco, Texas

3:00 PM  Session Adjourns for Networking Break
Session 09: Lessons Learned
Tuesday, April 10
1:30 PM – 3:00 PM

Moderators: Kyle Logue, Brown and Caldwell; Greg Heath, AECOM

1:30 PM  Unexpected History Lesson and Contractual Deal Making:
Lessons Learned from a Large-Diameter Force Main
Replacement Project in Downtown Norfolk; Home to
Historical Landmarks, High-Rise Buildings, Critical
Stakeholders and Innovative Contractors
William Gibson, AECOM; Timothy Marsh, HRSD

2:00 PM  Application of a Chemically Enhanced Retention
Treatment Basin in Reducing CSO and Pollutant Loading
into the Detroit River
Jian Li, Stantec Consulting Ltd.; Paul Drca, City of Windsor

2:30 PM  $450 Million Asset Management Grant Program in
Michigan: What Have We Learned?
Gregory Kacvinsky, Kyle Curie, OHM Advisors

Alternate  Little Cuyahoga Interceptor Slip Line Replacement
James Shelton, Arcadis

3:00 PM  Session Adjourns for Networking Break
Session 10: Operations & Maintenance

Tuesday, April 10
1:30 PM – 3:00 PM

Moderators: Dan Murray, Cincinnati OH; Luis Leon, HDR

1:30 PM  Wastewater Collection System Evaluations and Recommendations for Improvements
Rusty Nezat, Nezat Training and Consulting, Inc.; Rod Thornhill White Rock Consultants

2:00 PM  Use of Data Analytics Platform to Track and Predict the Location of Spills in the City of Atlanta
Robert Bocarro, City of Atlanta Department of Watershed Management

2:30 PM  Dynamic Prioritized System-wide Cleaning Schedule
Alexander Palmatier, HDR Inc; Kim Duncan, City/County Utilities

Alternate  Electronic Motor Protection Saves Plant from Spills & Equipment Damage
Regina Higgins, Brendan Watson, Grundfos

3:00 PM  Session Adjourns for Networking Break
Session 11: Asset Management

Wednesday, April 11
8:30 AM – 11:45 AM

Moderators: Carl Chan, Stantec; Jeffrey Griffiths, Hydromax USA

8:30 AM  
CDM Smith Water Analytics: Empowering Decision Making Through Big Data Analysis and Living Models in Hartford, CT
Scott Craig, CDM Smith; Matthew Gamache, CDM Smith; Jason Waterbury, Hartford MDC; Ajay Prasad, CDM Smith

9:00 AM  
The Importance of Design Criteria Standards for the Construction and Operation of a Centralized Wastewater Collection System in the Florida Keys
David Mullen, Daniel Burden, Wade Trim

9:30 AM  
Establishing Pipe-by-Pipe Rehabilitation and Re-inspection Schedules using Years Remaining Service Life
Andrew Filippi, James Shelton, Arcadis; Greg Gress, Town of Sullivans Island Water Works Department

10:00 AM  
Networking Break

10:15 AM  
Condition & Criticality – How Fort Wayne Built Their Asset Management Risk Model
Ben Groeneweg, City Utilities - City of Fort Wayne

10:45 AM  
Integration of Sewer Tunnel System into Enterprise Asset Management – benefits & challenges
Prasad Manthena, Greeley and Hansen LLC; Monica Outland, DC Water

11:15 AM  
Failure Analysis Helps SD1 Improve Its Continuous Sewer Assessment Program
Bo Copeland, Hazen and Sawyer; Matthew Van Doren, Sanitation District No 1

11:45 AM  
Conference Adjourns
Session 12: Project Delivery

Wednesday, April 11
8:30 AM – 11:45 AM

Moderators: Carlos Toro-Escobar, Brown and Caldwell; Christina Willson, Horner & Shifrin

8:30 AM  Taming the Multi-Stakeholder Hydra: A Case Study In Planning, Permitting, Design And Construction Of A Gravity Sewer Meeting Federal, State, And Private Stakeholder Constraints
Chris Belk, Aaron Duke, Joshua Farmer, Felicia Glapion, Hazen and Sawyer; Brian Stone, Loudoun Water

9:00 AM  Case Study: Designing a 11MG CSO Control Tunnel with Operations in Mind
Stephane D'Aoust, Stantec; Scott Laberge, City of Ottawa; Erika McEachran, Stantec; Nancy Schultz, CH2M

9:30 AM  Greenfield Road Force Main Failure. Responding To A High Profile Catastrophic Forcemain Failure In The Town Of Gilbert, Arizona.
Ken Snow, Mark Horn, Town of Gilbert

10:00 AM  Networking Break

10:15 AM  Charlottesville Utilizes System-Wide Find-and-Fix Program to Address Consent Order and Streamline Comprehensive Rehabilitation of their Collection System
Jason McIlwee, Lauren Hildebrand, City of Charlottesville Department of Utilities

10:45 AM  Don't Wait Until It Becomes an Emergency Repair: Sewers in Streams
Brendan Schillo, Colleen Block, Fairfax County

11:15 AM  Life as a Watershed Consultant Delivering on a Consent Decree Program
Stuart Haw, Sarita Melendez, Amec Foster Wheeler

11:45 AM  Conference Adjourns
TECHNICAL PROGRAM

Session 13: Local II            Room: 3ABC
Wednesday, April 11
8:30 AM – 11:45 AM

Moderators: Gary Hart, HRSD; Scott Morrow, Hazen and Sawyer

8:30 AM  Guaranteed Outcome Project Delivery for Sewer Rehabilitation - The HRSD Collaborative Design/Build Sewer Rehabilitation Pilot Project
James Shelton, Arcadis

9:00 AM  Managing a Million Data Points: A How-To-Guide
Kimberly Peterson, HRSD

9:30 AM  Work Order Planning for Wastewater Force Main Condition Assessment
Paul Wilson, Brown and Caldwell; Robert Radspinner, HRSD; Carlos Toro-Escobar, Brown and Caldwell

10:00 AM Networking Break

10:15 AM  A Balancing Act; Replacing A 40 Year Old Sanitary Sewer FM Through One Of The Original Colonial Settlements In America And Impact Of CNET’s Founder On The Project.
Eddie Abisaab, Jeremiah Burford, HRSD; Alan Edwards, AECOM

10:45 AM  The Neighbor on Norchester - A Complex Project Becomes A Showcase for Integrating Stakeholders
Jessica Hou, Gannett Fleming; Karen Russo, HRSD

11:15 AM  Integrated Planning Meets Adaptive Management
Phillip Hubbard, HRSD; Richard Stahr, Brown and Caldwell

Alternate  Save Your Pipes – Respect Cathodic Protection
Christene Mitchell, HRSD

Alternate  The Invisible Modernization of Aging Infrastructure
Jason Kerns, Chris Painter, HDR; Lauren Zuravnsky, HRSD

11:45 AM Conference Adjourns
## PRESENTATIONS AT-A-GLANCE

**Monday, April 9, 8:30 AM - 4:45 PM**

<table>
<thead>
<tr>
<th>Room</th>
<th>5ABC</th>
<th>Exhibit Hall</th>
<th>Mobile Session I</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Session</strong></td>
<td><strong>Session 01: Odor Control</strong></td>
<td>Mobile Session I</td>
<td><strong>Presentations kickoff concurrently at: 10:35 AM, 11:00 AM, and 11:25 AM in each of the five booths: 201, 310, 405, 410, 110. Please turn to Mobile Session Section for more information.</strong></td>
</tr>
<tr>
<td><strong>10:45 AM</strong></td>
<td>Town of Cary, NC. Preventing a collection system odor issue—from concept through final performance test and beyond</td>
<td><strong>10:45 AM</strong></td>
<td>Room 5ABC</td>
</tr>
<tr>
<td><strong>11:15 AM</strong></td>
<td>Performance of Combined Two-Stage Biotower and Carbon System: When Great Is Not Quite Good Enough</td>
<td><strong>11:15 AM</strong></td>
<td>Room 5ABC</td>
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<thead>
<tr>
<th>Room</th>
<th>5ABC</th>
<th>4ABC</th>
<th>3ABC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Session</strong></td>
<td><strong>Session 02: Trenchless</strong></td>
<td><strong>Session 03: System Analysis</strong></td>
<td><strong>Session 04: Local I</strong></td>
</tr>
<tr>
<td><strong>1:30 PM</strong></td>
<td>Groundwater Impacts on Sewer Relocation using Trenchless Technologies Near and Under I-405 in Renton, Washington</td>
<td>Inspecting 100 Year Old Sewers- Which One Should We Inspect First To Understand Condition Assessment?</td>
<td>Clearing The Fog: Fats, Oils, and Grease Management and SSOs</td>
</tr>
<tr>
<td><strong>2:00 PM</strong></td>
<td>Alternate Sewer Rehabilitation Methods: EXPanding the Toolbox</td>
<td>Sewer System Data Analytics Substituting for Flow Monitoring</td>
<td>Rehabilitation of a 67.0 MGD Treatment Plant Influent using Trenchless Technologies</td>
</tr>
<tr>
<td><strong>2:30 PM</strong></td>
<td>Pulled in All Directions: A Case Study in Maximizing Value with Risk Mitigation for An Urban Sewer Interceptor and Tunnels</td>
<td>Challenges Met and Lessons Learned, Managing a Consent Decree</td>
<td>Tracking, Quantifying, And Mitigating Saltwater Inflow And Infiltration</td>
</tr>
<tr>
<td><strong>3:45 PM</strong></td>
<td>Rehabilitating a Critical Large Diameter Sewer Under a Levee and a Historic Park</td>
<td>Predicting and Preventing SSOs in a Wastewater Collection System</td>
<td>Location, Assessment, and Repair of Wire Breaks on a 30- and 42-inch PCCP Force Main</td>
</tr>
<tr>
<td><strong>4:15 PM</strong></td>
<td>Use the Force Luke! Rehabilitation design, bidding and construction of a 106-year old parabolic sanitary sewer with Centrifugally Cast Cementitious Pipe Liner (CCCPL)</td>
<td>Risking It All: A Comprehensive Collection System Risk-Based Assessment in InfoMaster</td>
<td>HRSD’s Vision for Advanced Water Treatment and Managed Aquifer Recharge in Eastern Virginia, USA: Sustainable Water Initiative for Tomorrow (SWIFT)</td>
</tr>
<tr>
<td><strong>Alt</strong></td>
<td>Comparing Two Different Ways to Approach Pipeline Renewal Models</td>
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</table>
# Presentations At-A-Glance

**Tuesday, April 10, 8:30 AM - 4:45 PM**

<table>
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<tr>
<th>Room</th>
<th>Session 05: Planning</th>
<th>Session 06: SSO/CSO</th>
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<td>Basic Hydraulics Alleviates a Thirty-Year-Old Overflow</td>
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<td>Challenges and Successful Strategies in Developing &amp; Implementing a Capacity Assurance Program</td>
<td>The Wastewater Tsunami Is Coming - How Do We Stop It?</td>
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<tbody>
<tr>
<td><strong>Room</strong></td>
<td><strong>5ABC</strong></td>
<td><strong>4ABC</strong></td>
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<tr>
<td><strong>Session</strong></td>
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<tr>
<td><strong>Session 10: O&amp;M</strong></td>
<td>Cost-Effectively Upgrading an Old, Combined Sewer Pump Station</td>
<td>$450 Million Asset Management Grant Program in Michigan: What Have We Learned?</td>
</tr>
<tr>
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<table>
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<tr>
<th>Time</th>
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<th>Session 11: Asset Management</th>
<th>Session 12: Project Delivery</th>
<th>Session 13: Local II</th>
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<td>Condition &amp; Criticality – How Fort Wayne Built Their Asset Management Risk Model</td>
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Alt 2

Save Your Pipes – Respect Cathodic Protection

The Invisible Modernization of Aging Infrastructure
<table>
<thead>
<tr>
<th>Session Number</th>
<th>Session Title</th>
<th>Time</th>
<th>CE Credit Total/Type</th>
<th>Room</th>
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<tr>
<td></td>
<td><strong>Sunday, April 8</strong>&lt;sup&gt;th&lt;/sup&gt;</td>
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<tr>
<td>Workshop A</td>
<td>Infiltration and Inflow Modeling for Collection System Utilities</td>
<td>8:30am-5:00pm</td>
<td>0.6 CEUs 1D</td>
<td>1D</td>
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<tr>
<td>Workshop B</td>
<td>Findings from the Field – How to Evaluate Your I/I Reduction Program's Performance and Report the Results to Your Board</td>
<td>8:30am-5:00pm</td>
<td>0.6 CEUs 2AB</td>
<td>2AB</td>
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<tr>
<td></td>
<td><strong>Monday, April 9</strong>&lt;sup&gt;th&lt;/sup&gt;</td>
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<tr>
<td>OGS</td>
<td>Opening General Session</td>
<td>8:30am-10:00pm</td>
<td>1.5 GCHs 5ABC</td>
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<tr>
<td>Mobile Session</td>
<td>Mobile Session I</td>
<td>10:45am-11:50am</td>
<td>1.0 GCHs 5ABC</td>
<td>Hall D</td>
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<tr>
<td>Session 1</td>
<td>Odor Control</td>
<td>10:45am–11:45am</td>
<td>1.0 PDHs 5ABC</td>
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<tr>
<td>Session 2</td>
<td>Trenchless</td>
<td>1:30pm–4:45pm</td>
<td>2.5 PDHs 5ABC</td>
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<tr>
<td>Session 3</td>
<td>System Analysis</td>
<td>1:30pm–4:45pm</td>
<td>2.5 PDHs 4ABC</td>
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<td>Session 4</td>
<td>Local I</td>
<td>1:30pm–4:45pm</td>
<td>2.5 PDHs 3ABC</td>
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<td><strong>Tuesday, April 10</strong>&lt;sup&gt;th&lt;/sup&gt;</td>
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<td></td>
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</tr>
<tr>
<td>Session 5</td>
<td>Planning</td>
<td>8:30am–11:45am</td>
<td>2.5 PDHs 5ABC</td>
<td></td>
</tr>
<tr>
<td>Session 6</td>
<td>SSO/CSO</td>
<td>8:30am–11:45am</td>
<td>2.5 PDHs 4ABC</td>
<td></td>
</tr>
<tr>
<td>Session 7</td>
<td>Potpourri</td>
<td>8:30am–11:45am</td>
<td>2.5 PDHs 3ABC</td>
<td></td>
</tr>
<tr>
<td>Mobile Session</td>
<td>Mobile Session II</td>
<td>12:45pm–1:45pm</td>
<td>1.0 GCHs 5ABC</td>
<td>Hall D</td>
</tr>
<tr>
<td>Session 8</td>
<td>Pump Stations</td>
<td>1:30pm–3:00pm</td>
<td>1.5 PDHs 5ABC</td>
<td></td>
</tr>
<tr>
<td>Session 9</td>
<td>Lessons Learned</td>
<td>1:30pm–3:00pm</td>
<td>1.5 PDHs 4ABC</td>
<td></td>
</tr>
<tr>
<td>Session 10</td>
<td>O&amp;M</td>
<td>1:30pm–3:00pm</td>
<td>1.5 PDHs 3ABC</td>
<td></td>
</tr>
<tr>
<td>Tour A</td>
<td>Pump Stations and CSO Treatment</td>
<td>8:30am–12:00pm</td>
<td>3.5 GCHs Off Site</td>
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<tr>
<td></td>
<td><strong>Wednesday, April 11</strong>&lt;sup&gt;th&lt;/sup&gt;</td>
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<tr>
<td>Session 11</td>
<td>Asset Management</td>
<td>8:30am–11:45am</td>
<td>3.0 PDHs 5ABC</td>
<td></td>
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<tr>
<td>Session 12</td>
<td>Project Delivery</td>
<td>8:30am–11:45am</td>
<td>3.0 PDHs 4ABC</td>
<td></td>
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<tr>
<td>Session 13</td>
<td>Local II</td>
<td>8:30am–11:45am</td>
<td>3.0 PDHs 3ABC</td>
<td></td>
</tr>
<tr>
<td>Tour B</td>
<td>Stormwater and Green Infrastructure</td>
<td>12:00pm–4:30pm</td>
<td>4.5 GCHs Off Site</td>
<td></td>
</tr>
</tbody>
</table>
Exhibition Schedule

Monday, April 9  
10:00 am – 6:15 pm ..........Exhibit Hall Open
10:00 am – 10:45 am .......... Networking Break
10:30 am – 11:50 am .......... Mobile Session I
11:45 am – 1:30 pm ................. Luncheon
3:00 pm – 3:45 pm ................. Networking Break
4:45 pm – 6:15 pm ..........Networking Reception

Tuesday, April 10  
10:00 am – 3:45 pm ..........Exhibit Hall Open
10:00 am – 10:45 am .......... Networking Break
12:45 pm – 1:45 pm .......... Mobile Session II
11:45 am – 1:30 pm ................. Luncheon
3:00 pm – 3:45 pm ................. Networking Break

Children under 18 entering the Exhibition must be accompanied by a parent or guardian at all times. The parent or guardian must obtain a child badge at registration, and assumes all risk and responsibility for the child’s safety.

Due to the proprietary nature of the displays, photography of displays and materials is forbidden without exhibitors’ express permission.

SEWER AND WATER ART GALLERY (SWAG)

Booth 325

A special offering for the WEF Collection Systems 2018 conference, this year’s exhibit floor will host the Sewer and Water Art Gallery (SWAG), familiar already to those who have participated in VWEA’s annual conference in years’ past.

The SWAG is a museum of things that sewer collections industry professionals have encountered in the field that were found to be interesting, confusing, or downright crazy!

Attendees are encouraged to walk through the SWAG exhibit during networking and luncheon breaks on Monday and Tuesday.
When municipal owners need to know about collection system flows and sewer levels, they choose ADS for robust, accurate and affordable measurement, the kind of hydraulic analysis necessary to support project and financial objectives.
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liquid additive prevents MIC in concrete sanitary sewers, while
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Aqseptence Group, Inc. .......................................................... Booth 304
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Phone: 336-601-0449
4217 N Old US Hwy 31
Rochester, IN 46975
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1100 Hercules Ave, Ste 320
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685 Stockton Dr
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    Bentley is a global leader dedicated to providing engineers,
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operators with comprehensive software solutions for advancing
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Civica Infrastructure Inc. ........................................................ Booth 413
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Phone: 905-417-9792
330 Rodinea Rd
Vaughan, ON L6A 4P5
Canada
Civica Infrastructure specializes in expanding and verifying residual sewer capacity. DataCurrent is a comprehensive, SaaS based application designed to help identify, quantify and address the challenges of Inflow & Infiltration (I-I).

Compliance EnviroSystems LLC ........................................... Booth 303
www.ces-sses.com
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1401 Seabord Dr
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9025 Centre Pointe Dr, Ste 400
West Chester, OH 45069
Contech Engineered Solutions LLC provides site solutions for the civil engineering industry. Contech’s portfolio includes bridges, drainage, erosion control, retaining wall, sanitary, stormwater and wastewater treatment products.

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www.cretexseals.com
Phone: 262-542-8153
N16 W23390 Stoneridge Dr, Ste A
Waukesha, WI 53188
Manufacturer of mechanical internal and external manhole frame-chimney seals and other products used to prevent Inflow & Infiltration, including PRO-RING™, a lightweight grade adjustment system used for manholes and underground utility structures.
CUES .................................................................................................................. Booth 105
www.cuesinc.com
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3600 Rio Vista Ave
Orlando, FL 32805
CUES is the world's leading manufacturer of closed circuit television video (CCTV) inspection, rehabilitation, pipe profiling equipment and pipeline inspection/asset management software for sanitary and storm sewers, industrial process lines, and water lines.

DatalinQR ........................................................................................................... Booth 120
www.datalinqr.com
Phone: 800-836-1011
2528 Thrush Rd
Charlottesville, VA 22901

DHI Water & Environment, Inc. ................................................................. Booth 205
www.dhigroup.com
Phone: 323-828-2030
141 Union Blvd, Ste 250
Lakewood, CO 80228
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21221 Mullin Ave
Warren, MI 48089
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**Electro Scan Inc.** ................................................................. Booth 201
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1745 Markston Rd
Sacramento, CA 95825
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2773 Balltown Rd
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111-B3 Canfield Ave
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210 Sixth Ave
Pittsburgh, PA 15222
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3950 Montee Masson
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iMPREG International Gmbh .................................................. Booth 103
www.impreg.com
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PO Box 835
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<table>
<thead>
<tr>
<th>Name</th>
<th>Company</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eddie Abisaab</td>
<td>HRSD, Speaker, Session 13</td>
<td></td>
</tr>
<tr>
<td>John Aldrich</td>
<td>CDM Smith, Speaker, Session 07</td>
<td></td>
</tr>
<tr>
<td>Doug Ashworth</td>
<td>Freese and Nichols, Inc., Speaker, Session 03</td>
<td></td>
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<tr>
<td>David Baranowski</td>
<td>Carollo Engineers, Inc., Speaker, Session 03</td>
<td></td>
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<tr>
<td>Clayton Barnard</td>
<td>Freese and Nichols Inc, Speaker, Session 08</td>
<td></td>
</tr>
<tr>
<td>Chris Belk</td>
<td>Hazen and Sawyer, Speaker, Session 12</td>
<td></td>
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<tr>
<td>Scott Belz</td>
<td>AECOM, Speaker, Session 03</td>
<td></td>
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<tr>
<td>Paul Bixel</td>
<td>City of Olathe KS, Speaker, Session 07</td>
<td></td>
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<tr>
<td>Ted Bluver</td>
<td>Greeley and Hansen, LLC, Speaker, Session 06</td>
<td></td>
</tr>
<tr>
<td>Robert Bocarro</td>
<td>City of Atlanta Department of Watershed Management, Speaker, Session 10</td>
<td></td>
</tr>
<tr>
<td>Charles Bott</td>
<td>HRSD, Speaker, Session 04</td>
<td></td>
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<tr>
<td>Xavier Buser</td>
<td>Hazen and Sawyer, Speaker, Session 08</td>
<td></td>
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<tr>
<td>Yovanni Catano</td>
<td>Stantec, Speaker, Session 07</td>
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<tr>
<td>Jennie Celik</td>
<td>HDR, Speaker, Session 08</td>
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<tr>
<td>Carl Chan</td>
<td>Stantec, Moderator, Session 11, 06</td>
<td></td>
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<tr>
<td>Prabhushankar Chandrasekeran</td>
<td>Greeley and Hansen LLC, Speaker, Session 02</td>
<td></td>
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<tr>
<td>Bo Copeland</td>
<td>Hazen and Sawyer, Speaker, Session 11</td>
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<tr>
<td>Scott Craig</td>
<td>CDM Smith, Speaker, Session 11</td>
<td></td>
</tr>
<tr>
<td>Stephane D'Aoust</td>
<td>Stantec Consulting Ltd., Speaker, Session 12</td>
<td></td>
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<tr>
<td>Javier Dennis</td>
<td>City of Los Angeles, Bureau of Sanitation, Speaker, Session 05</td>
<td></td>
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<tr>
<td>Chris Easter</td>
<td>HDR, Speaker, Session 01</td>
<td></td>
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<tr>
<td>Joshua Farmer</td>
<td>Hazen and Sawyer, Speaker, Session 02</td>
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<tr>
<td>Andrew Filippi</td>
<td>Arcadis, Speaker, Session 11</td>
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<tr>
<td>Hazem Gheith</td>
<td>Arcadis, Speaker, Session 07</td>
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<td>William Gibson</td>
<td>AECOM, Speaker, Session 09</td>
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<tr>
<td>Jeffrey Griffiths</td>
<td>Hydromax USA, Moderator, Session 11</td>
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<tr>
<td>Ben Groeneweg</td>
<td>City Utilities - City of Fort Wayne, Speaker, Session 11</td>
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<tr>
<td>Ahmad Habibian</td>
<td>CDM Smith, Speaker, Session 03</td>
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PRESENTER AND MODERATOR DIRECTORY

Gary Hart, HRSD, Moderator, Session 13, 04

Stuart Haw, Amec Foster Wheeler, Speaker, Session 12

Greg Heath, AECOM, Moderator, Session 05, 09

Scott Helfrick, IDEX Corp, Moderator, Session 03

Joe Herman, Stantec, Speaker, Session 05

Regina Higgins, Grundfos Water Utility, Speaker, Session 10

Jessica Hou, Gannett Fleming, Moderator, Session 01, 08, Speaker, Session 13

Kai Iaukea, Stantec, Speaker, Session 07

Gregory Kacvinsky, OHM Advisors, Speaker, Session 09

Jason Kerns, HDR, Speaker, Session 13

Samrin Ahmed Kusum, North Carolina State University, Speaker, Session 05

Drew Lankford, Virginia Beach Public Works, Speaker, Session 04

Marc Lehmann, CDM Smith, Speaker, Session 02

Luis Leon, HDR, Moderator, Session 10

Jian Li, Stantec Consulting Ltd., Speaker, Session 09

Kyle Logue, Brown and Caldwell, Moderator, Session 09

Paul Longo, Dewberry, Speaker, Session 04

Michael Lorenzo, Bartlett & West, Speaker, Session 07

Kelly Loyd, Black & Veatch, Speaker, Session 07

Jim Mallorey, Metro Wastewater Reclamation District, Speaker, Session 05

Prasad Manthena, Greeley and Hansen LLC, Speaker, Session 11

Sierra McCreary, Black & Veatch, Speaker, Session 08

Jason McIlwee, City of Charlottesville Department of Utilities, Speaker, Session 12

Kate Mignone, AECOM, Speaker, Session 06

Christene Mitchell, HRSD, Speaker, Session 13

Kraig Moodie, FloWav, Inc, Moderator, Session 07

Gary Moore, Washington University in St Louis, Moderator, Session 03
Scott Morrow, Hazen and Sawyer, Moderator, Session 13, 04

David Mullen, Wade Trim, Speaker, Session 11

Dan Murray, Cincinnati OH, Moderator, Session 10

Carla Muscarella, Woolpert, Inc., Speaker, Session 03

Joe Nagy, Citizens Energy Group, Speaker, Session 02

Rusty Nezat, Nezat Training and Consulting, Inc., Speaker, Session 10

Katherine Nixon, City of Virginia Beach, Moderator, Session 01

Alexander Palmatier, HDR Inc, Speaker, Session 10

Kimberly Peterson, HRSD, Speaker, Session 13

Frank Qiao, Hazen and Sawyer, Speaker, Session 03

Robert Radspinner, HRSD, Speaker, Session 04

Mathew Roder, Greeley and Hansen, Speaker, Session 02

John Royse, Fairfax County, VA, Speaker, Session 08

Brendan Schillo, Fairfax County, VA, Speaker, Session 12

Natasha Schmidt, Fairfax County, VA, Speaker, Session 04

Geoffrey Schulmeister, ISL Engineering & Land Services LTD, Speaker, Session 05

Dave Servidio, Mott MacDonald, Moderator, Session 06, 02

James Shelton, Arcadis, Speaker, Session 09, 13

Tarlton Smith, Freese & Nichols, Speaker, Session 06

Ken Snow, Town of Gilbert, Speaker, Session 12

Richard Stahr, Brown and Caldwell, Speaker, Session 13

Dianne Sumego, Black & Veatch, Moderator, Session 02, 05

Carlos Toro-Escobar, Brown and Caldwell, Moderator, Session 12

Taylor Turner, Arcadis, Speaker, Session 06

Baxter Vieux, Vieux & Associates Inc, Speaker, Session 06

Erik Waligorski, Carollo Engineers, Speaker, Session 02

Carolyn Weber, Fairfax County WDCD, Speaker, Session 04

Brent Werlein, City of Virginia Beach, Speaker, Session 04

Christina Willson, Horner & Shifrin, Moderator, Session 12, 07

Christopher Wilson, Brown and Caldwell, Moderator, Session 08
Paul Wilson, Brown and Caldwell, Speaker, Session 13

Philip Wolstenholme, Brown and Caldwell, Speaker, Session 01
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July 29 - 31, 2018
Portland, Oregon
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WEFTEC 2018
September 29 - October 3, 2018
New Orleans, Louisiana
www.weftec.org
## CONFERENCE SCHEDULE AT-A-GLANCE

### SUNDAY, APRIL 8

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>7:30 AM – 5:00 PM</td>
<td>Registration</td>
</tr>
<tr>
<td>8:30 AM – 5:00 PM</td>
<td>Workshop A</td>
</tr>
<tr>
<td>8:30 AM – 5:00 PM</td>
<td>Workshop B</td>
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### MONDAY, APRIL 9

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>7:30 AM – 5:00 PM</td>
<td>Registration</td>
</tr>
<tr>
<td>8:30 AM – 10:00 AM</td>
<td>Opening General Session</td>
</tr>
<tr>
<td>10:00 AM – 10:45 AM</td>
<td>Networking Break</td>
</tr>
<tr>
<td>10:00 AM – 6:15 PM</td>
<td>Exhibit Hall Open</td>
</tr>
<tr>
<td>10:45 AM – 11:50 AM</td>
<td>Mobile Session 1</td>
</tr>
<tr>
<td>10:45 AM – 11:45 AM</td>
<td>Technical Sessions 1</td>
</tr>
<tr>
<td>11:45 AM – 1:30 PM</td>
<td>Luncheon in Exhibit Hall</td>
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<tr>
<td>1:30 PM – 4:45 PM</td>
<td>Technical Sessions 2, 3, 4</td>
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<tr>
<td>3:00 PM – 3:45 PM</td>
<td>Networking Break</td>
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<tr>
<td>4:45 PM – 6:15 PM</td>
<td>Networking Reception</td>
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### TUESDAY, APRIL 10

<table>
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<th>Time</th>
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<tbody>
<tr>
<td>8:00 AM – 5:00 PM</td>
<td>Registration</td>
</tr>
<tr>
<td>8:30 AM – 11:45 AM</td>
<td>Technical Sessions 5, 6, 7</td>
</tr>
<tr>
<td>8:30 AM – 12:00 PM</td>
<td>Tour A</td>
</tr>
<tr>
<td>10:00 AM – 10:45 AM</td>
<td>Networking Break</td>
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<tr>
<td>10:00 AM – 3:45 PM</td>
<td>Exhibit Hall Open</td>
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<tr>
<td>11:45 AM – 1:30 PM</td>
<td>Luncheon in Exhibit Hall</td>
</tr>
<tr>
<td>12:45 PM – 1:45 PM</td>
<td>Mobile Session 2</td>
</tr>
<tr>
<td>1:30 PM – 3:00 PM</td>
<td>Technical Session 8, 9, 10</td>
</tr>
<tr>
<td>3:00 PM – 3:45 PM</td>
<td>Networking Break</td>
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### WEDNESDAY, APRIL 11

<table>
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<th>Time</th>
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<tbody>
<tr>
<td>8:00 AM – 11:45 AM</td>
<td>Registration</td>
</tr>
<tr>
<td>8:30 AM – 11:45 AM</td>
<td>Technical Sessions 11, 12, 13</td>
</tr>
<tr>
<td>12:00 PM – 4:30 PM</td>
<td>Tour B</td>
</tr>
</tbody>
</table>
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