This conference is held by the Water Environment Federation in cooperation with the Indiana Water Environment Association and The Water Research Foundation.
Order the Latest Wastewater Collection System Operator’s Guide to Certification

WASTEWATER COLLECTION SYSTEM OPERATOR CERTIFICATION STUDYBOOK

Second Edition
Updated & Expanded

James J. Courchaine
SECOND EDITION

www.wef.org/ShopWEF
WEF
Collection Systems Conference 2019
Race to Indy – 25 Years of Wet Weather Control

June 4-7, 2019
Indiana Convention Center
Indianapolis, Indiana, USA
Dear Conference Participant,

The Water Environment Federation’s Collection System Committee, in cooperation with the Indiana Water Environment Association (IWEA) and The Water Research Foundation is pleased to bring you the 2019 Collection Systems Conference: Race to Indy – 25 Years of Wet Weather Control. This comprehensive program highlights challenges and innovative solutions and technologies that are utilized across the nation to proactively maintain and improve the efficiency of collection system infrastructure. Throughout the conference, local projects in Indianapolis and the surrounding communities will also be highlighted to show work completed in the last 25 years since Indianapolis last hosted the conference.

As hosts of the conference, we want to welcome you to the “Circle City” Indianapolis. At the Collection System 2019 “Race to Indy” you will have the experience to visit this fabulous city located in the center of the great State of Indiana. You will hear unique perspectives on collection system topics all while enjoying a great environment to network and discuss the latest hot topics with your peers. Summer will almost be here on June 4-7 as we welcome conference attendees from around the country.

**When you arrive:** The greatest spectacle in racing, the 103rd running of the Indianapolis 500 occurred on May 26th so to continue the excitement, take a trip to the track and museum or play a round of golf at the Brickyard. There is a lot to enjoy downtown within walking distance from the hotel, including the NCAA Hall of Champions where our social event will be June 4th. The Eiteljorg Museum of American Indians and Western Art, the Indianapolis Zoo, and Botanical Gardens are all great local attractions. The Children’s Museum is nationally known for their indoor and outdoor experiences. Lucas Oil Stadium, home of the Colts, and Bankers Life Fieldhouse, home of the Pacers, are also remarkable venues. There are many great eatery establishments and breweries, but an inside note “watch out for the hot cocktail sauce at St. Elmo’s Steak House”. The canal walk located just northeast of the hotel is a great area to walk, jog or even rent pedal boats. Come early and/or stay late. Indianapolis has lots to offer for all family members. If you like horse racing and casinos it is a short 20 miles to Indiana Grand located in Shelbyville.

**Pre-Conference Workshops:** Two Workshops are being offered on Tuesday that will enhance your educational experience with a focus on evaluating and mitigating inflow and infiltration in collection systems – *Best Sewer Rehabilitation Practices for Mitigating I/I: Integrated Approaches, Innovative Technologies and Interactive Solutions*, and *Infiltration and Inflow Modeling for Collection System Utilities*. Choose the one that will increase your agency’s effectiveness when you return to the office.

**Opening General Session:** The Opening General Session will include a welcome from the Mayor and Citizens Energy Group and will highlight the famous Indianapolis Motor Speedway. Join your friends and colleagues and share the experience to kick-off the three-day conference of diverse technical sessions, mobile session, tours, and networking.
Technical Sessions, Mobile Sessions, and Exhibition: The technical program was developed to provide presentations that cover a wide range of topics, including Tunnels, Trenchless Technology, Combined and Sanitary Sewer Overflows, System Analysis, project Delivery, Condition Assessment, Asset Management and Inflow and Infiltration. In addition, two sessions will also highlight local projects in Indianapolis and the surrounding communities. Two mobile sessions allow attendees to interact directly with exhibitors to gain hands-on knowledge about existing products and services, along with highlighting emerging topics and technologies that are new to the marketplace. Throughout the conference, attendees can gain first-hand knowledge by visiting the many exhibitors who will be joining us this year.

Facility Tours: We encourage you to take part in one or both of our local tours. The first goes to the Belmont Advanced Wastewater Treatment Plant and Juan Soloman Park Lift Station. The second is a site visit to the DigIndy Deep Rock Tunnel where attendees descend 240 feet via personnel cage to the bottom of the tunnel.

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 Indianapolis.

Sincerely,

Christy Willson
Horner & Shifrin, Inc
Specialty Conference Committee Chair

Bradley Fix
Shelbyville Water Resource Recovery Facility
Local Planning Group Chair
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collection Systems Conference 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>Technical Discussion &amp; Committee Meeting</td>
<td>3</td>
</tr>
<tr>
<td>Reception and Meal Functions</td>
<td>4</td>
</tr>
<tr>
<td>Mobile App</td>
<td>5</td>
</tr>
<tr>
<td>Conference Safety and Security</td>
<td>5</td>
</tr>
<tr>
<td>Continuing Education Tracking</td>
<td>5</td>
</tr>
<tr>
<td>Continuing Education</td>
<td>6</td>
</tr>
<tr>
<td>Online Proceedings</td>
<td>8</td>
</tr>
<tr>
<td>Technical Publication</td>
<td>8</td>
</tr>
<tr>
<td>Sponsorship Information</td>
<td>9</td>
</tr>
<tr>
<td>WEF Policies &amp; Positions</td>
<td>10</td>
</tr>
<tr>
<td>WEF Social Media Policy</td>
<td>10</td>
</tr>
<tr>
<td>Pre-Conference Workshops</td>
<td>11</td>
</tr>
<tr>
<td>Facility Tours</td>
<td>14</td>
</tr>
<tr>
<td>Opening General Session</td>
<td>15</td>
</tr>
<tr>
<td>Technical Program</td>
<td>16</td>
</tr>
<tr>
<td>Presentations-at-a-Glance</td>
<td>31</td>
</tr>
<tr>
<td>Sessions-at-a-Glance</td>
<td>37</td>
</tr>
<tr>
<td>The Exhibition</td>
<td>38</td>
</tr>
<tr>
<td>Exhibitor Directory</td>
<td>39</td>
</tr>
<tr>
<td>Exhibition Floor Plan</td>
<td>57</td>
</tr>
<tr>
<td>Presenter and Moderator Directory</td>
<td>58</td>
</tr>
<tr>
<td>Conference Schedule-at-a-Glance</td>
<td>61</td>
</tr>
<tr>
<td>Green Standards and Sustainability at WEF CS 2019</td>
<td>62</td>
</tr>
<tr>
<td>Upcoming WEF Education and Training Events</td>
<td>64</td>
</tr>
</tbody>
</table>
COLLECTION SYSTEMS SPECIALTY CONFERENCE COMMITTEE & LOCAL PLANNING GROUP

Tony Akles
Strand Associates

Derek Davidson
F.A. Wilhelm
Construction

Scott Aurit
HDR

Teddy Deahl
Bowen Engineering

Tim Back
Back Municipal Consulting

Kylee Dycus
Indiana WEA

Joe Bartos
Wessler Engineering

Ethan Edwards
Cowan Group

Phil Brenner
Brenner Solutions

Jay Gibson
CHA

Eric Carleton
National Precast Concrete Association

Walter Graff
Water Research Foundation

Eric Haenlein
Layne Inliner

Olivia Hawbaker
Citizens Energy Group

Greg Heath
AECOM

Scott Helfrick
ADS Environmental Services

Jim Hewitt
City of Akron

Keith Hicks
Gripp Incorporated

Luis Leon
HDR

Carl Chan
Stantec

Jeffery Griffiths
Hydromax USA

Diane
Grossenheider
HDR

Jane McLamarrah
Stantec
<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
<th>Position</th>
<th>Company/Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gary Moore</td>
<td>Washington University</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dan Murray</td>
<td>US EPA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joe Nagy</td>
<td>Citizens Energy Group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jeremy Nitka</td>
<td>Arcadis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cheryl Paulin</td>
<td>ADS Environmental Services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Karen Saavedra</td>
<td>American Structurepoint</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cherylynn Schilling</td>
<td>Powers Engineering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dave Servidio</td>
<td>Mott MacDonald</td>
<td></td>
<td>Dianne Sumego</td>
</tr>
<tr>
<td>Jim Shelton</td>
<td>ARCADIS</td>
<td></td>
<td>Chad Thompson</td>
</tr>
<tr>
<td>TJ Short</td>
<td>City of Ft. Wayne</td>
<td></td>
<td>Srini Vallabhaneni</td>
</tr>
<tr>
<td>Matt Spidel</td>
<td>Butler, Fairman, Seifert</td>
<td></td>
<td>Kevin Waldron</td>
</tr>
<tr>
<td>Jimmy Stewart</td>
<td>Pure Technologies</td>
<td></td>
<td>Emily Wehmeyer</td>
</tr>
<tr>
<td>Karyn Stickel</td>
<td>Hubbell, Roth &amp; Clark</td>
<td></td>
<td>Jennifer Welsch</td>
</tr>
<tr>
<td>Joe Strauch</td>
<td>Gannett Flemming</td>
<td></td>
<td>Tony Wood</td>
</tr>
<tr>
<td>Dianne Sumego</td>
<td></td>
<td></td>
<td>City of Osgood</td>
</tr>
</tbody>
</table>
All events are held in the Indiana Convention Center.

The Registration Desk is located in Lobby D and will be open at the following times:

**Hours:**
- Tuesday, June 4 7:30 AM – 5:00 PM
- Wednesday, June 5 7:30 AM – 5:00 PM
- Thursday, June 6 8:00 AM – 5:00 PM
- Friday, June 7 8:00 AM – 12:00 PM

**PRESENTER AND MODERATOR INFORMATION**

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

Presenters and alternates participating Wednesday, Thursday and Friday should attend their assigned briefing. Please attend only once unless speaking on multiple days. Please add them to your calendar via the new App. The Speaker Briefing and room schedule is as follows:

- **Wednesday, June 5 — Room: 105/106**
  - 7:30 AM – 8:15 AM
  - *Sessions 1 through 4*

- **Thursday, June 6 — Room: 105/106**
  - 7:30 AM – 8:15 AM
  - *Sessions 5 through 13*

**TECHNICAL DISCUSSION & COMMITTEE MEETING**

Collection Systems Technical Discussion & Committee Meeting
Room 103/104
Thursday, June 6
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**
Exhibit Hall, Hall D
Come grab a beer while they last! Join us in the exhibit area to mingle with your fellow attendees while you view the exhibits, renew acquaintances, and make new contacts. Light hors d’oeuvres and refreshments will be served. Beer will be available first come, first served with a cash bar to follow. Don’t miss out!

**Wednesday, June 5**
4:45 PM – 6:15 PM

*Sponsored by ARCADIS*

**Luncheons**
Exhibit Hall, Hall D
Lunch will be provided for all full conference, daily registrants, exhibitors, and students. Please advise staff as soon as possible if you have any special dietary requirements. The luncheons will be held in the Exhibit Hall in Hall D.

**Wednesday, June 5**
11:45 AM – 1:30 PM

**Thursday, June 6**
11:45 AM – 1:30 PM

**Networking Breaks**
The Networking Breaks will be held:

**Tuesday, June 4**
Meeting Room Foyer Area
10:00 AM – 10:30 AM and 3:00 PM – 3:30 PM

**Wednesday, June 5**
Exhibit Hall, Hall D
10:00 AM – 10:45 AM and 3:00 PM – 3:45 PM

**Thursday, June 6**
Exhibit Hall, Hall D
10:00 AM – 10:45 AM and 3:00 PM – 3:45 PM

**Friday, June 7**
Meeting Room Foyer Area
10:00 AM – 10:15 AM
MOBILE APP

This year, we have a NEW Mobile App for #Collections19

WEF is pleased to offer the WEF Events Connect Mobile App which gives you access to all current and future WEF events, including Collection Systems.

Please uninstall the old app, and it will no longer work and search for and install our new “WEF Events Connect” App.

View full program details and the exhibitor list, then start building your #Collections19 agenda.

Download “WEF Events Connect” now from the Google Play OR Apple App Store. Use the App on other web-enabled devices can access the app via the web at https://bit.ly/2EdQCUt.

For the first time, we will be going paperless for surveys. All session feedback will be done via the App. Please complete in-app feedback tool on individual presentations, sessions, workshops, and more!

CONFERENCE SAFETY AND SECURITY

Indiana Convention Center Emergency Response Procedures

Should an emergency arise, all attendees shall be informed by public announcement messages and facility personnel of the proper actions to take.

Should attendees witness an emergency situation, i.e. visible smoke, someone in need of medical attention, or the need for security attendees should dial 3350 on a red phone (Emergency Phones Are Located Approximately Every 250 feet). In the event they cannot locate a red phone, please dial 317-262-3350.

CONTINUING EDUCATION TRACKING

NEW – You can track your activity for workshops, technical sessions and mobile sessions that you have scanned in and out of at the Collection Systems Conference 2019.

Ensure you scan in an out of every activity to earn continuing education credits and track them live at this website: https://ceu.experientevent.com/WEF195

You can also find this link on www.wef.org/CollectionSystems

If you fail to scan in or out of a session and need assistance fixing this, please email CE@wef.org.
The Collection Systems Conference™ 2019 - Continuing Education files available online immediately after event!

**Track your scans live here:** [https://ceu.experientevent.com/WEF195](https://ceu.experientevent.com/WEF195)

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 Continuing Education 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 an attendee fails to scan in/out of a session(s) they must email detailed information regarding the unscanned session(s)/times to CE@wef.org.

**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.

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.
CONTINUING EDUCATION

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. Several states typically accept WEF PDH and CEU credits without issue. For example: California (CWEA), Florida 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:

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: 1.7 CEU Credits = 17.0 PDH depending on individual state regulations.

*CEU & PDH credits are available for Workshops to Professional Engineers licensed in the state of New York (NYSED).

For more information regarding WEF’s Continuing Education Program, please visit www.wef.org/CollectionSystems
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 Collection Systems 2019 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 – CPCS1903

TECHNICAL PUBLICATION

Wastewater Collection System Operator Certification Studybook (2nd Edition)
Member: $50.50
Non-member: $76.18

The importance and need for properly trained and certified wastewater collection system operators is increasingly being recognized. This recognition is reflected in the many voluntary and mandatory certification requirements for wastewater collection system professionals. These certification programs require that operators pass written examinations that typically cover a wide-range of management and operations and maintenance topics.

*Price inclusive of 20% discount and 7% Indiana state sales tax*
We would like to thank the following sponsoring companies for their contributions to the conference and program.

**InfoSense, Inc**
www.infosense.com
Gold
Booth 301

**HDR**
www.hdrinc.com
Bronze Elite

**ARCADIS**
www.arcadis.com
Networking Reception

**Doetsch Environmental Services**
www.doetschenv.com
Tote Bag
Booth 225

**Stantec**
www.stantec.com
Opening General Session
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 Lobby D of the Indiana 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.
# PRE-CONFERENCE WORKSHOPS

**Workshop A:** Best Sewer Rehabilitation Practices for Mitigating I/I: Integrated Approaches, Innovative Technologies and Interactive Solutions  

**Tuesday, June 4**  
**8:30 AM – 5:00 PM**  
*(Separate registration fees apply)*

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 AM</td>
<td>Welcome &amp; Workshop Introduction</td>
</tr>
<tr>
<td></td>
<td>Tim Sumner, CMT</td>
</tr>
<tr>
<td>8:45 AM</td>
<td>Back to Basics: An Overview of Sewer Rehabilitation Technologies</td>
</tr>
<tr>
<td></td>
<td>Ted DeBoda, Baltimore County, MD</td>
</tr>
<tr>
<td>9:15 AM</td>
<td>Interactive Session #1: What Practices Do You Use and What Are the Drivers for Your I/I Reduction Program?</td>
</tr>
<tr>
<td></td>
<td>Phil Hubbard, HRSD</td>
</tr>
<tr>
<td>10:00 AM</td>
<td>Networking Break in Meeting Room Foyer Area</td>
</tr>
<tr>
<td>10:30 AM</td>
<td>Case Study #1: Sewer Rehabilitation Results 30 Years Later in Fayetteville, AR</td>
</tr>
<tr>
<td></td>
<td>David Jurgens, City of Chesapeake, VA</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>Case Study #2: Sewer Rehabilitation Practices at Washington Suburban Sanitary Commission</td>
</tr>
<tr>
<td></td>
<td>Omar Muhammad, Washington Suburban Sanitary Commission</td>
</tr>
<tr>
<td>11:30 AM</td>
<td>Case Study #4: Utilizing New Technologies to Reduce I/I</td>
</tr>
<tr>
<td></td>
<td>Firat Sever, QuakeWrap</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>Break for Lunch in Meeting Room Foyer Area</td>
</tr>
<tr>
<td>1:30 PM</td>
<td>Interactive Session #2: Small Group Exercise – Selecting Effective I/I Reduction Methodologies for Sub-basin #1.</td>
</tr>
<tr>
<td></td>
<td>Britt Babcock, Avanti; Srini Vallabhaneni, Stantec</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>Networking Break in Meeting Room Foyer Area</td>
</tr>
<tr>
<td>3:30 PM</td>
<td>Advances in Rehabilitation Technology #1: Assessment of Life-Cycle Performance of Trenchless Technologies Used for Rehabilitation of Pipelines</td>
</tr>
<tr>
<td></td>
<td>John Matthews, Trenchless Technology Center at Louisiana Tech</td>
</tr>
<tr>
<td>4:00 PM</td>
<td>Advances in Rehabilitation Technology #2: Structural Capabilities of No-Dig Manhole Rehabilitation</td>
</tr>
<tr>
<td></td>
<td>Walter Graf, The Water Research Foundation</td>
</tr>
<tr>
<td>4:30 PM</td>
<td>Interactive Session #3: Panel Discussion - Ask the Experts/Speakers</td>
</tr>
<tr>
<td></td>
<td>Tim Sumner, CMT; Phil Hubbard, HRSD</td>
</tr>
<tr>
<td>5:00 PM</td>
<td>Workshop Adjourns</td>
</tr>
</tbody>
</table>
Workshop B:  Infiltration and Inflow Modeling for Collection System Utilities

Tuesday, June 4
8:30 AM – 5:00 PM
(Separate registration fees apply)

8:30 AM  Welcome & Workshop Introduction
Matthias Wittenberg, CDM Smith

8:35 AM  Elements to Successful Monitoring Programs
Kevin Enfinger, ADS Environmental Services

9:00 AM  Breakout Session #1 – Monitoring Plan Development
Kevin Enfinger, ADS Environmental Services; Table Facilitators

9:40 AM  How Much Did It Rain? - Understanding Your System Response
Baxter Vieux, Vieux, Inc.

10:00 AM  Networking Break in Meeting Room Foyer Area

10:30 AM  Rainfall and Flow Data Quality Control at NEORSD - A Mid-West Utility Perspective
William Fussner, NEORSD

10:55 AM  Breakout Session #2 – Monitoring Data QC
William Fussner, NEORSD; Table Facilitators

11:20 AM  Hydrologic Modeling Basics for Collections Systems
Matthias Wittenberg, CDM Smith; Carlos Toro, Brown and Caldwell

11:45 AM  Break for Lunch in Meeting Room Foyer Area

1:30 PM  Breakout Session #3 - RDII Modeling with RTK
Matthias Wittenberg, CDM Smith; Table Facilitators

2:20 PM  Progression of King County’s I/I Program - From Monitoring and Modeling to Capital Planning
Homero Flores, King County

2:40 PM  Wet Weather Collection System Modeling Made Big – The L.A. Story
Javier Dennis, City of Los Angeles Sanitation

3:00 PM  Networking Break in Meeting Room Foyer Area

3:30 PM  Breakout Session #4 - RDII Modeling with HSPF
Carlos Toro, Brown and Caldwell; Table Facilitators

4:20 PM  How RDII Modeling Effectively Focused Rehabilitation and Replacement Projects - A City of Virginia Beach Case Study
Stephen Motley, Virginia Beach Public Utilities

Workshop B Agenda continued on next page
Workshop B Agenda continued from previous page

4:40 PM  Breakout Session Results Comparison and Panel Discussion

4:55 PM  Closing Remarks
          Carlos Toro, Brown and Caldwell

5:00 PM  Workshop Adjourns
Facility Tour A: Belmont AWTP and Juan Soloman Park Lift Station
Thursday, June 6
1:00 PM – 4:00 PM
Meet at the Registration Desk by 12:45 PM
(Separate registration fees apply)

This tour will include a site visit to one of Indianapolis’ most interesting lift stations, with a capacity of XX MGD, constructed under Juan Soloman Park in an Indianapolis neighborhood! Following the lift station tour, attendees will move to the Belmont Advanced Wastewater Treatment Plant (AWTP), one of two treatment plants owned and operated by Citizens Energy Group. Belmont AWTP was expanded to 300 MGD as part of the Combined Sewer Overflow Consent Decree and included improvements like eliminating primary effluent discharge and adding wet weather storage basins, new clarifiers, and UV disinfection. The tour will include a walkthrough of the plant, highlighting recent process improvements.

Facility Tour B: DigIndy Deep Rock Tunnel
Friday, June 7
8:30 AM – 11:30 AM
Meet at the Registration Desk by 8:15 AM
(Separate registration fees apply)

This tour will include a site visit to one finished drop shaft location, which serves to drop consolidated combined sewers approximately 240 feet to the deep rock tunnel elevation. The site includes a screen and gate structure to condition flow, two deep shafts, and an equipment building for control. Located in one of Indy’s parks, this site will highlight challenges of working with businesses, residents, and park users. Following the drop shaft site, attendees will be transported to the working shaft location for the DigIndy deep rock tunnel project and have the opportunity to descend via personnel cage the 240’ to the bottom of the tunnel for a truly groundbreaking experience.
**OPENING GENERAL SESSION**

Opening General Session  
Wednesday, June 5  
8:30 AM – 10:00 AM  
Room 103/104  
*Sponsored by Stantec*

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 AM</td>
<td><strong>WEF Collection Systems Conference Chair Welcome</strong></td>
</tr>
<tr>
<td></td>
<td>Christy Willson, Horner &amp; Shifrin, Inc., CS Specialty</td>
</tr>
<tr>
<td></td>
<td>Conference Committee Chair</td>
</tr>
<tr>
<td></td>
<td>Bradley E. Fix, City of Shelbyville, Local Planning Group Chair</td>
</tr>
<tr>
<td>8:35 AM</td>
<td><strong>WEF Welcome</strong></td>
</tr>
<tr>
<td></td>
<td>Ifetayo Venner, WEF Board of Trustees</td>
</tr>
<tr>
<td>8:45 AM</td>
<td><strong>City of Indianapolis Welcome</strong></td>
</tr>
<tr>
<td></td>
<td>Honorable Mayor Joseph Hogsett</td>
</tr>
<tr>
<td>9:00 AM</td>
<td><strong>Citizens Energy Group Welcome</strong></td>
</tr>
<tr>
<td></td>
<td>Mark Jacob, CEG</td>
</tr>
<tr>
<td>9:25 AM</td>
<td><strong>Race to Indy Keynote</strong></td>
</tr>
<tr>
<td></td>
<td>Jarrod Krisiloff, Indianapolis Motor Speedway</td>
</tr>
<tr>
<td>9:55 AM</td>
<td><strong>WEF Collection Systems 2020 Destination</strong></td>
</tr>
<tr>
<td></td>
<td>Christy Willson, Horner &amp; Shifrin, Inc., CS Specialty</td>
</tr>
<tr>
<td></td>
<td>Conference Committee Chair</td>
</tr>
<tr>
<td>10:00 AM</td>
<td><strong>Session Adjourns for Networking Break in Exhibit Hall</strong></td>
</tr>
</tbody>
</table>
Mobile Session I
Wednesday, June 5
10:30 AM – 11:50 AM
Exhibit Hall

Facilitators: Jim Shelton, ARCADIS; Jimmy Stewart, Xylem Inc.; Jeffery Griffiths, Hydromax USA; Carl Chan, Stantec; Tim Back, Back Municipal Consulting; Matt Spidel, Butler, Fairman, Seifert; Christy Willson, Horner & Shifrin, Inc.; Diane Grossenheider, HDR; Scott Helfrick, ADS Environmental Services; Cheryl Paulin, ADS Environmental Services; Teddy Deahl, Bowen Engineering

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 301 How Acoustic Inspection Helps Utilities Develop a Proactive Collections Maintenance Program
Alex Churchill, InfoSense Inc

Booth 319 Starting Upstream: Utilizing the Collection System Bioreactor to Enhance WWTP Performance
Ian Watson, USP Technologies

Booth 212 Non-Contact LaserFlow Area Velocity Flow Technology
Rick L Dey, Teledyne Isco

Kevin Marsh, FlowWorks, Inc

Booth 107 Wastewater Pumps with Integrated Intelligence - The Next Pump Industry Breakthrough
Tyler Elkins, Xylem, Inc
Session 01: Tunnels
Wednesday, June 5
10:45 AM – 11:45 AM
Room 103/104

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

10:45 AM  The City of Ottawa Combined Sewage Storage Tunnel: Managing Risks from Design Through Construction
Shawn Ireland, Colin Goodwin, Adrien Comeau, Stantec; Steven Courtland, City of Ottawa

11:15 AM  The City of Columbus Lower Olentangy Tunnel: Selecting an Alignment to Extend the OARS Tunnel
Robert Herr, City of Columbus; Nathan Dickman, Jeffrey Coffey, DLZ Corp

11:45 AM  Session Adjourns for Lunch in Exhibit Hall

Alternate Application of Real-Time Weather Forecast in Collection System Operation
Tiantian Xiang, Hazem Gheith, Arcadis; John Newsome, City of Columbus
Session 02: Trenchless  
Wednesday, June 5  
1:30 PM – 4:45 PM  
Room 103/104

Moderators: Dianne Sumego, DMS Water Solutions, LLC; Jeffery Griffiths, Hydromax USA

1:30 PM  The Columbus LIS Microtunnel - Providing Wastewater Capacity to the Rapidly Developing Rickenbacker Area  
Jeremy Cawley, City of Columbus DOSD; Irwan Halim, Steven Thompson, AECOM; Michael Nuhfer, Aldea Services

2:00 PM  Employing Combined Technologies to Save Combined Brick Sewers: Trenchless Rehabilitation in Omaha, Nebraska  
Brian Culich, AP/M Permaform

2:30 PM  Kingsbury Run Culvert Repair Project - How a Challenging Urban Bypass Sewer Tunnel Became a United States Record Holder for Double-Curved Microtunneling  
Amanda Foote, Sven Wiberg, AECOM; Anthony Margevicius, Steve Janosko, Doug Lopata, Brian Daugherty, Northeast Ohio Regional Sewer District

3:00 PM  Networking Break in Exhibit Hall

3:45 PM  Private I/I Reduction - Chapel Drive Pump Station No. 2 Service Area Rehabilitation  
Tad Powell, Hazen and Sawyer

4:15 PM  Long-Term Solution to an Age-Old Problem: Maintaining Aging Manholes in Laredo, TX  
Angel Leon, City of Laredo; Van Young, AP/M Permaform

4:45 PM  Session Adjourns for Networking Reception in Exhibit Hall
Session 03: Combined Sewer Overflows/Sanitary Sewer Overflows
Wednesday, June 5
1:30 PM – 4:45 PM
Room 107/108

Moderators: Walter Graf, Water Research Foundation; Dave Servidio, Mott MacDonald

1:30 PM  Innovative Hydraulic Design to Manage Large Supercritical Flow Diversion for CSO Control
James Talian, City of Lynchburg; Nikolaos Apsilidis, Greeley and Hansen; Troy Lyons, IIHR- Hydrosience & Engineering; Tony Loeser, IIHR - University of Iowa

2:00 PM  A Suite of Integrated Tools and Processes for Efficiently Planning Sewer System Improvements
Kevin Vander Tuig, Derek Wride, Luat Le, Craig Schroeder, Wade Trim; Lita Laven, Northeast Ohio Regional Sewer District

2:30 PM  True Integrated Planning - Using Clean Water Act Investments to Transform a Cincinnati Community
Michael Ellerbrock, Strand Associates, Inc.

3:00 PM  Networking Break in Exhibit Hall

3:45 PM  How Bangor, Maine Will Expand a 20-Year Old Storage Facility Threefold Along a Vibrant Waterfront
Kate Mignone, AECOM; John Theriault, Andrew Rudzinski, City of Bangor; Greg Heath, Steven Freedman, AECOM

4:15 PM  Preventing Future SSOs through Flow Management Plan and Installation of Flow Equalization Tanks
Jun Meng, Greeley and Hansen; Scott Schiller, Rivanna Water and Sewer Authority

4:45 PM  Session Adjourns for Networking Reception in Exhibit Hall

Alternate  Smart Sewers Serve Up Triple-Play: Preventing Spills, Fines and Intruders in Clayton County
Jeffrey Jones, Clayton County Water Authority; Glen Hill, Greg Quist, Smartcover Systems
Session 04: Potpourri  
Wednesday, June 5  
1:30 PM – 4:45 PM  
Room 109/110  

Moderators: Jennifer Welsch, Metro Saint Louis Sewer District; Christy Willson, Horner & Shifrin Inc.

1:30 PM  
**Asset Management System for the Allegheny County Sanitary Authority (ALCOSAN)**  
David Bingham, AECOM; Jan Oliver, Joseph Sparbanie, Allegheny County Sanitary Authority; George Sarapa, Lauren Terpak, AECOM

2:00 PM  
**Rock Creek Public Sewer District Private Lateral Inspection Program**  
Donald Daniel, Eric Knoll, Rock Creek Public Sewer District

2:30 PM  
**Right Sizing Your Capital Improvement Program: Utilizing Flow Monitoring Data to Determine the Need for Contingency Projects**  
Andrew Kaufman, Richard Kauffman, Metropolitan Sewer District of St. Louis

3:00 PM  
**Networking Break in Exhibit Hall**

3:45 PM  
**Flow Monitoring Data Quality Control and Quality Assurance**  
Christine Heinrich-Josties, Regidia Voong, Lenise Marrero, Ali Poosti, City of Los Angeles Bureau of Sanitation

4:15 PM  
**Lafayette Renew’s UOTF CSO LTCP Implementation**  
Tim Healy, Greeley & Hansen; Bradley Talley, City of Lafayette, Lafayette Renew; Teddy Deahl, Bowen

4:45 PM  
**Session Adjourns for Networking Reception in Exhibit Hall**

Alternate  
**Considerations for Design, Construction and Operation of Force Mains**  
Ahmad Habibian, Christopher Michalos, CDM Smith
Session 05: System Analysis
Thursday, June 6
8:30 AM – 11:45 AM
Room 103/104

Moderators: Greg Heath, AECOM; Jimmy Stewart, Pure Technologies

8:30 AM  Get More Out of Your Real Time Control Facility
Robert Kneip, MSDGC; Reese Johnson; Shirish Agarwal, Don Wendorff, Jacobs

9:00 AM  How HRSD is Operating Their Collection System Like a Stock Exchange
Maria Krug Comuniello, Xylem; Robert Radspinner, HRSD

9:30 AM  Supporting Regulatory Compliance Strategies through Water Quality Modeling
Christopher Ranck, Arcadis; Olivia Hawbaker, Derek Sutton, Citizens Energy Group

10:00 AM  Networking Break in Exhibit Hall

10:45 AM  Death by 1,000 Cuts - Identification of Collection System Rehabilitation Priorities through Modeling, Mass Balance, and Field Investigation
Tim Loper, Elisa Garvey, Carollo Engineers

11:15 AM  Building Smarter, Healthier Communities Through Wastewater Opioid Monitoring
Donald Smith, Town of Cary; Newsha Ghaeli, Biobot Analytics

11:45 AM  Session Adjourns for Lunch in Exhibit Hall

Alternate  LASAN’s Wet Weather Planning: One Year at a Time
Christine Heinrich-Josties, Regidia Voong, Lenise Marrero, Ali Poosti, City of Los Angeles, Bureau of Sanitation
Session 06: Delivering Products
Thursday, June 6
8:30 AM – 11:45 AM
Room 107/108

Moderators: Christy Willson, Horner & Shifrin Inc., Dan Murray, EPA

8:30 AM  Innovative Flow Equalization, SS-200 Flow EQ Improvements, Northwestern Water & Sewer District
Theodore Bennett, Jones & Henry Engineers, Ltd.

9:00 AM  Getting the Most out of Your Storage Basin: Optimization Strategies for Planning, Design, and Construction
Bryan Rogne, Thomas Noerenberg, Brown and Caldwell

9:30 AM  Keeping History Alive: A Phased Plan for Revitalizing an Aged Combined Sewer Interceptor in Conjunction with the Ongoing Redevelopment of the Richmond, Virginia Riverfront
Quinton Nottingham, City of Richmond Virginia DPU: Brandon Cooper, Greeley and Hansen; Susan Hamilton, City of Richmond Virginia DPU; George Guhse, Greeley and Hansen

10:00 AM  Networking Break in Exhibit Hall

10:45 AM  90-foot-Deep Wastewater Pump Station Increases Wastewater System Reliability
Tim Taylor, Carollo Engineers

11:15 AM  Design Tools for Upgrading Underground Infrastructure in a Congested Urban Environment
Alan Stadler, Cathy Findley, Sam Glovick, Wade Trim; Alison Schreiber, Northeast Ohio Regional Sewer District

11:45 AM  Session Adjourns for Lunch in Exhibit Hall
Session 07: Condition Assessment
Thursday, June 6
8:30 AM – 11:45 AM
Room 109/110

Moderators: Cheryl Paulin, ADS Environmental Services; Dianne Sumego, DMS Water Solutions, LLC

8:30 AM Video Brings a New Vision to Water Pipeline Assessments
Stephen Jeffus, RJN Group Inc

9:00 AM Creek Crossing Risk Assessment - A Dual Condition Assessment of Sanitary Infrastructure and Urban Streams for Prioritizing Stabilization Projects to Prevent Sewer Failures and SSOs
Susan Hamilton, City of Richmond Virginia DPU; Brandon Cooper, Ben Custalow, Greeley and Hansen

9:30 AM Before Upgrading Your Sewer, Upgrade Your Sewer Inspection
Christopher Wohlleb, Mott MacDonald

10:00 AM Networking Break in Exhibit Hall

10:45 AM Using Sewer Slopes and Other Attributes to Identify Areas of Potential Microbial-Induced Corrosion in a Sanitary Sewerage System
Sally Duffy, Karyn Stickel, Christopher Ross, Hubbell, Roth & Clark, Inc; Brian Coburn, Oakland County WRC

11:15 AM Concrete Pipe Trunk Sewer Condition Assessment and Rehabilitation
Steven Meyer, Bowen, Collins & Associates; Sean O'Rourke, Hazen and Sawyer

11:15 AM Session Adjourns for Lunch in Exhibit Hall

Alternate Condition and Hydraulics Assessments Troubleshoot High Flow Levels on the Carderock/Scotts Run Sewer
Jennifer Howells, Paul Batman, Arcadis; Thomas Grala, Fairfax County; John Paul Travis, Arcadis
Mobile Session II: Emerging Topics and Technologies
Thursday, June 6
12:30 PM – 1:30 PM
Exhibit Hall

Facilitators: Jimmy Stewart, Xylem Inc.; Jim Shelton, ARCADIS; Diane Grossenheider, HDR; Scott Helfrick, ADS Environmental Services; Cheryl Paulin, ADS Environmental Services; Keith Hicks, GRIPP; Teddy Deahl, Bowen Engineering; Christy Willson, Horner & Shifrin, Inc.; Jeffery Griffiths, Hydromax USA; Carl Chan, Stantec; Matt Spidel, Butler, Fairman, Seifert

The four 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 12:30 PM, 12:50 PM, and 1:05 PM in each of the four booths.

12:25 PM Mobile Session Introduction at entrance to exhibit hall
12:30 PM 4 Simultaneous Presentation A
12:50 PM 4 Simultaneous Presentation B
1:05 PM 4 Simultaneous Presentation C

Booth 219 A New Generation of Monitors Drives Informed, Actionable Decision Impacting Operations, Prioritizing CIP
Eric Lott, ADS, LLC

Booth 107 Get Smart: Real Time Decision Support Systems Significantly Reduce LTCP Expenditures
Jennifer Steffens, Xylem, Inc

Booth 302 The Future of Sewer Assessment
Veronica Alvarez, RapidView IBAK North America

Booth 317 Advanced Robotic Inspection: A Better View Inside Your Pipes
Chris White, RedZone Robotics
Session 08: Forcemain
Thursday, June 6
1:30 PM – 3:00 PM
Room 103/104

Moderators: Dan Murray, EPA; Jennifer Welsch, Metro Saint Louis Sewer District

1:30 PM   City of Regina Third Sewage Force Main - Construction of a 60-inch (1,500 mm) PVC Force Main
Alex Munoz, Michael Georgalas, Jason Gaudet, Stantec Consulting Services Inc.

2:00 PM   Force Main Assessment Program Development and Inspection: A Case Study in Baltimore, MD
Amy Bley, RJN Group, Inc.; Thomas Kiefer

2:30 PM   Force Main Criticality Assessment and Prioritization as a Prerequisite to Performing Condition Assessment
William Sukenik, Kent Veech, Woolpert; Amanda Kinnick, Miami-Dade Water and Sewer Department

3:00 PM   Session Adjourns for Networking Break in Exhibit Hall
Session 09: Local I  
Thursday, June 6  
1:30 PM – 3:00 PM  
Room 107/108

**Moderators:** Srini Vallabhaneni, Stantec; Karyn Stickel, Hubbell, Roth & Clark, Inc

1:30 PM  
Modeling of the Three Rivers Protection and Overflow Reduction Tunnel  
Matthew Pierce, Black & Veatch; Wendy Reust, TJ Short, Kristen Buell, City of Fort Wayne

2:00 PM  
Citizens Energy Group’s Septic Tank Elimination Program: STEP-in Forward to Cost-Efficiently Eliminate Septic Tanks  
Joe Nagy, Jessica Bastin, Citizens Energy Group

2:30 PM  
Making Informed Decisions: Using GIS with InfoMaster to form an Underground Asset Management Plan  
Derek Sutton, Bill Adams, Christina Bowers, Rebecca Schaefer, Citizens Energy Group

3:00 PM  
Session Adjourns for Networking Break in Exhibit Hall

Alternate  
Souping-Up Indiana’s Future Engineers through Citizens Energy Group’s Partnership for Excellence in Research & Learning Program  
Joe Nagy, Rebecca Schaefer, Citizens Energy Group
Session 10: Operation & Maintenance
Thursday, June 6
1:30 PM – 3:00 PM
Room 109/110

Moderators: Jimmy Stewart, Pure Technologies; Walter Graf, Water Research Foundation

1:30 PM  The Evolution of CMOM: Historical and Future Perspectives
Jane McLamarrah, Stantec Consulting Services

2:00 PM  Non-Destructive Investigation Options for Hydrogen Sulfide Corrosion in Collection Systems - Uxbridge, MA Investigation and Rehabilitation Case Study
Anastasia Rudenko, Marc Drainville, GHD; Benn Sherman; James Legg, Town of Uxbridge

2:30 PM  Golf Course Sewer Cleaning Solution
Kim Nezat, Nezat Training and Consulting, Inc.; Rusty Nezat, Jigawon, Inc.

3:00 PM  Session Adjourns for Networking Break in Exhibit Hall
Session 11: Asset Management
Friday, June 7
8:30 AM – 11:45 AM
Room 103/104

Moderators: Karyn Stickel, Hubbell, Roth & Clark, Inc; Greg Heath, AECOM

8:30 AM Utility Utilizes Decision Matrix built on Triple Bottom Line Elements to Select Highest-Scoring Alternative for Sanitary Sewer Improvements
William Gibson, AECOM; Timothy Marsh, Jeffrey Scarano, HRSD

9:00 AM Developing a Focused CIP to Optimize Resources using Pipeline Renewal Models
David Baranowski, Felicia James, Eric Harold, Carollo Engineers, Inc.

9:30 AM Asset Management and Sustainability for the North Outfall Trunk Sewer
Emilio Lopez, Alfredo Zaldivar, Regidia Voong, Ali Poosti, City of Los Angeles - Department of Public Works

10:00 AM Networking Break in Meeting Room Foyer Area

10:15 AM Asset Management Regulations Are Coming, Are You Ready?
Kevin Slaven, ARCADIS

10:45 AM Performing a Desktop Analysis to Justify Funding a Sustainable Sewer Asset Management Program
Timothy Sumner, Crawford, Murphy and Tilly Inc

11:15 AM Faster, Smarter, Cheaper, Safer: Too Good to Be True?
Manhole Inspection and Rehabilitation in Chandler, Arizona
Robert Buss, Carollo Engineers

11:45 AM Conference Adjourns
Session 12: Inflow and Infiltration  
Friday, June 7  
8:30 AM – 11:45 AM  
Room 107/108

**Moderators:** Carl Chan, Stantec; Cheryl Paulin, ADS Environmental Services

8:30 AM  
Inflow and Infiltration Reduction Success Utilizing a Public-Private Partnership (P3) Framework  
Matthew Malone, Edward Graham, Civica Infrastructure Inc.; Katy Modaressi, Daniel Bertolo, York Region

9:00 AM  
Inflow and Infiltration Reduction - In It for The Long Haul  
Catherine Morley, RJN Group; Paul Burris, City of Elmhurst; Vinnie Bergl, RJN Group

9:30 AM  
Improving Water Quality in San Francisco Bay through I/I Reduction  
Christopher Dinsmore, Eileen White, EBMUD; Eric Fontenot, DHI

10:00 AM  
Networking Break in Meeting Room Foyer Area

10:15 AM  
I/I Strategy - a Cultural Change  
Farshad Salehzadeh, Region of Peel

10:45 AM  
We Do This for the Kids and Fishes: Implementing Comprehensive Public and Private Rehabilitation to Eliminate SSOs near Schools  
Tammy Cleys, Carollo Engineers; David Collins, David Collins Engineering; Ian Besaw, Henry Young, City of Portland

11:15 AM  
Kansas City Missouri Private I/I Program  
Sara Goebel, Cliff Cate, Burns and McDonnell

11:45 AM  
Conference Adjourns

Alternate  
A Practical Approach for Addressing Deficiencies in EPA’s 2014 I/I Estimation Method  
George Kurz, Sewer Capacity Management; Robert O'Dette, State of Tennessee
Session 13: Local II
Friday, June 7
8:30 AM – 11:45 AM
Room 109/110

Moderators: Jane McLamarrah, Stantec; Jeremy Nitka, Arcadis

8:30 AM  South Bend, Indiana's Approach for Wet Weather Planning and CSO Control: Reevaluating a $$$ LTCP
Karen Saavedra, American Structurepoint; Kieran Fahey, City of South Bend; Joe Johnson, Stantec; Jordan McCormack, American Structurepoint

9:00 AM  Why Winning the Race to Reduce Sewer Overflows Means Embracing Weather Radar and Rain Gauge Measurements
Baxter Vieux, Vieux & Associates, Inc.; Christopher Ranck, Arcadis; Derek Sutton, Citizens Energy Group

9:30 AM  From Break to Beautiful: Clarksville’s Effluent Discharge Relocation from the Ohio River to Mill Creek
Brittany Montgomery, Town of Clarksville

10:00 AM  Networking Break in Meeting Room Foyer Area

10:15 AM  Downtown Muncie Sewer Separation Using GSC Project Delivery
Peter Wamsley, Beam Longest and Neff LLC; Teddy Deahl, Bowen

10:45 AM  Utilizing Neural Networks, Real Time Data, and Forecasting to Improve Wet Weather Operations in Evansville, IN
Patrick Henthorn, Xylem; Harry Lawson, EWSU

11:15 AM  Design, Full-Scale Operation, and Lessons Learned of the First Installed Pile Cloth-Media Disk Filters for Combined Tertiary & Wet Weather Treatment
Katherine Merkle, Donohue & Associates

11:45 AM  Conference Adjourns

Alternate  The Change is Continuing: A Better Combined Sewer Model Realizes Capital Savings
Christopher Ranck, Arcadis; Derek Sutton, Citizens Energy Group; Hazem Gheith, Arcadis; Stephen Rowe, Citizens Energy Group

Alternate  Overcoming Design Challenges of a Deep Pump Station
Zach Schortgen, City of Fort Wayne; Matthew Pierce, Black & Veatch; Chris Ravenscroft, City of Fort Wayne; Michael Cain, Black & Veatch
We encourage attendees to participate in presentations from among all sessions. To better plan your learning, see below and on the following pages a list of presentations offered during each time block.

Don’t forget to give us feedback for each session via the new Mobile App.

### Wednesday, June 5 Morning

<table>
<thead>
<tr>
<th>Room</th>
<th>Room 103/104</th>
<th>Exhibit Hall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session</td>
<td>Session 01: Tunnels</td>
<td>10:30 - 11:50 AM: Mobile Session I</td>
</tr>
<tr>
<td>10:45 AM</td>
<td>The City of Ottawa Combined Sewage Storage Tunnel: Managing Risks from Design Through Construction</td>
<td>-How Acoustic Inspection Helps Utilities Develop a Proactive Collections Maintenance Program;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Starting Upstream: Utilizing the Collection System Bioreactor to Enhance WWTP Performance;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Non-Contact LaserFlow Area Velocity Flow Technology;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Wastewater Pumps with Integrated Intelligence - The Next Pump Industry Breakthrough</td>
</tr>
<tr>
<td>11:15 AM</td>
<td>The City of Columbus Lower Olentangy Tunnel: Selecting an Alignment to Extend the OARS Tunnel</td>
<td></td>
</tr>
<tr>
<td>ALT</td>
<td>Application of Real-Time Weather Forecast in Collection System Operation</td>
<td></td>
</tr>
</tbody>
</table>


### PRESENTATIONS AT-A-GLANCE

**Wednesday, June 5 Afternoon**

<table>
<thead>
<tr>
<th>Room</th>
<th>Room 103/104</th>
<th>Room 107/108</th>
<th>Room 109/110</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Session 02:</strong></td>
<td><strong>Session 03:</strong></td>
<td><strong>Session 04:</strong></td>
<td></td>
</tr>
<tr>
<td>Trenchless</td>
<td>Combined Sewer Overflows/Sanitary Sewer Overflows</td>
<td>Potpourri</td>
<td></td>
</tr>
<tr>
<td><strong>1:30 PM</strong></td>
<td>The Columbus LIS Microtunnel - Providing Wastewater Capacity to the Rapidly Developing Rickenbacker Area</td>
<td>Innovative Hydraulic Design to Manage Large Supercritical Flow Diversion for CSO Control</td>
<td>Asset Management System for the Allegheny County Sanitary Authority (ALCOSAN)</td>
</tr>
<tr>
<td><strong>2:00 PM</strong></td>
<td>Employing Combined Technologies to Save Combined Brick Sewers: Trenchless Rehabilitation in Omaha, Nebraska</td>
<td>A Suite of Integrated Tools and Processes for Efficiently Planning Sewer System Improvements</td>
<td>Rock Creek Public Sewer District Private Lateral Inspection Program</td>
</tr>
<tr>
<td><strong>3:45 PM</strong></td>
<td>Private I/I Reduction - Chapel Drive Pump Station No. 2 Service Area Rehabilitation</td>
<td>How Bangor, Maine Will Expand a 20-Year Old Storage Facility Threefold Along a Vibrant Waterfront</td>
<td>Flow Monitoring Data Quality Control and Quality Assurance</td>
</tr>
<tr>
<td><strong>4:15 PM</strong></td>
<td>Long-Term Solution to an Age-Old Problem: Maintaining Aging Manholes in Laredo, TX</td>
<td>Preventing Future SSOs through Flow Management Plan and Installation of Flow Equalization Tanks</td>
<td>Lafayette Renew's UOTF CSO LTCP Implementation</td>
</tr>
<tr>
<td><strong>ALT</strong></td>
<td>Smart Sewers Serve Up Triple-Play: Preventing Spills, Fines and Intruders in Clayton County</td>
<td>Considerations for Design, Construction and Operation of Force Mains</td>
<td></td>
</tr>
</tbody>
</table>
### Presents at a Glance

**Thursday, June 6 Morning**

<table>
<thead>
<tr>
<th>Room</th>
<th>Room 103/104</th>
<th>Room 107/108</th>
<th>Room 109/110</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Session 05: System Analysis</strong></td>
<td><strong>Session 06: Delivering Products</strong></td>
<td><strong>Session 07: Condition Assessment</strong></td>
<td></td>
</tr>
<tr>
<td>8:30 AM</td>
<td>Get More Out of Your Real Time Control Facility</td>
<td>Innovative Flow Equalization, SS-200 Flow EQ Improvements, Northwestern Water &amp; Sewer District</td>
<td>Video Brings a New Vision to Water Pipeline Assessments</td>
</tr>
<tr>
<td><strong>9:00 AM</strong></td>
<td>How HRSD is Operating Their Collection System Like a Stock Exchange</td>
<td>Getting the Most out of Your Storage Basin: Optimization Strategies for Planning, Design, and Construction</td>
<td>Creek Crossing Risk Assessment - A Dual Condition Assessment of Sanitary Infrastructure and Urban Streams for Prioritizing Stabilization Projects to Prevent Sewer Failures and SSOs</td>
</tr>
<tr>
<td><strong>9:30 AM</strong></td>
<td>Supporting Regulatory Compliance Strategies through Water Quality Modeling</td>
<td>Keeping History Alive: A Phased Plan for Revitalizing an Aged Combined Sewer Interceptor in Conjunction with the Ongoing Redevelopment of the Richmond, Virginia Riverfront</td>
<td>Before Upgrading Your Sewer, Upgrade Your Sewer Inspection</td>
</tr>
<tr>
<td><strong>10:45 AM</strong></td>
<td>Death by 1,000 Cuts - Identification of Collection System Rehabilitation Priorities through Modeling, Mass Balance, and Field Investigation</td>
<td>90 foot Deep Wastewater Pump Station Increases Wastewater System Reliability</td>
<td>Using Sewer Slopes and Other Attributes to Identify Areas of Potential Microbial-Induced Corrosion in a Sanitary Sewerage System</td>
</tr>
<tr>
<td><strong>11:15 AM</strong></td>
<td>Building Smarter, Healthier Communities Through Wastewater Opioid Monitoring</td>
<td>Design Tools for Upgrading Underground Infrastructure in a Congested Urban Environment</td>
<td>Concrete Pipe Trunk Sewer Condition Assessment and Rehabilitation</td>
</tr>
<tr>
<td><strong>ALT</strong></td>
<td>LASAN's Wet Weather Planning: One Year at a Time</td>
<td></td>
<td>Condition and Hydraulics Assessments Troubleshoot High Flow Levels on the Carderock/Scotts Run Sewer</td>
</tr>
<tr>
<td>Time</td>
<td>Mobile Session II: Emerging Topics and Technologies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:30 - 1:30 PM</td>
<td>A New Generation of Monitors Drives Informed, Actionable Decision Impacting Operations, Prioritizing CIP</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Get Smart: Real Time Decision Support Systems Significantly Reduce LTCP Expenditures</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Future of Sewer Assessment</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Advanced Robotic Inspection: A Better View Inside Your Pipes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Thursday, June 6 Afternoon

<table>
<thead>
<tr>
<th>Room</th>
<th>Room 103/104</th>
<th>Room 107/108</th>
<th>Room 109/110</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session</td>
<td>Session 08: Forcemain</td>
<td>Session 09: Local I</td>
<td>Session 10: Operation &amp; Maintenance</td>
</tr>
<tr>
<td>1:30 PM</td>
<td>City of Regina Third Sewage Force Main - Construction of a 60-inch (1,500 mm) PVC Force Main</td>
<td>Modeling of the Three Rivers Protection and Overflow Reduction Tunnel</td>
<td>The Evolution of CMOM: Historical and Future Perspectives</td>
</tr>
<tr>
<td>2:00 PM</td>
<td>Force Main Assessment Program Development and Inspection: A Case Study in Baltimore, MD</td>
<td>Citizens Energy Group’s Septic Tank Elimination Program: STEP-in Forward to Cost-Efficiently Eliminate Septic Tanks</td>
<td>Non-Destructive Investigation Options for Hydrogen Sulfide Corrosion in Collection Systems - Uxbridge, MA Investigation and Rehabilitation Case Study</td>
</tr>
<tr>
<td>2:30 PM</td>
<td>Force Main Criticality Assessment and Prioritization as a Prerequisite to Performing Condition Assessment</td>
<td>Making Informed Decisions: Using GIS with InfoMaster to form an Underground Asset Management Plan</td>
<td>Golf Course Sewer Cleaning Solution</td>
</tr>
<tr>
<td>ALT</td>
<td>Souping-Up Indiana’s Future Engineers through Citizens Energy Group’s Partnership for Excellence in Research &amp; Learning Program</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Sessions Overview:

- **1:30 PM**
  - **Session 08: Forcemain**
    - City of Regina Third Sewage Force Main - Construction of a 60-inch (1,500 mm) PVC Force Main
  - **Session 09: Local I**
    - Modeling of the Three Rivers Protection and Overflow Reduction Tunnel
  - **Session 10: Operation & Maintenance**
    - The Evolution of CMOM: Historical and Future Perspectives

- **2:00 PM**
  - **Session 08: Forcemain**
    - Force Main Assessment Program Development and Inspection: A Case Study in Baltimore, MD
  - **Session 09: Local I**
    - Citizens Energy Group’s Septic Tank Elimination Program: STEP-in Forward to Cost-Efficiently Eliminate Septic Tanks
  - **Session 10: Operation & Maintenance**
    - Non-Destructive Investigation Options for Hydrogen Sulfide Corrosion in Collection Systems - Uxbridge, MA Investigation and Rehabilitation Case Study

- **2:30 PM**
  - **Session 08: Forcemain**
    - Force Main Criticality Assessment and Prioritization as a Prerequisite to Performing Condition Assessment
  - **Session 09: Local I**
    - Making Informed Decisions: Using GIS with InfoMaster to form an Underground Asset Management Plan
  - **Session 10: Operation & Maintenance**
    - Golf Course Sewer Cleaning Solution

- **ALT**
  - Souping-Up Indiana’s Future Engineers through Citizens Energy Group’s Partnership for Excellence in Research & Learning Program
<table>
<thead>
<tr>
<th>Time</th>
<th>Session 11: Asset Management</th>
<th>Session 12: Inflow and Infiltration</th>
<th>Session 13: Local II</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 AM</td>
<td>Utility Utilizes Decision Matrix built on Triple Bottom Line Elements to Select Highest-Scoring Alternative for Sanitary Sewer Improvements</td>
<td>Inflow and Infiltration Reduction Success Utilizing a Public-Private Partnership (P3) Framework</td>
<td>South Bend, Indiana's Approach for Wet Weather Planning and CSO Control: Reevaluating a $$$ LTCP</td>
</tr>
<tr>
<td>9:00 AM</td>
<td>Developing a Focused CIP to Optimize Resources using Pipeline Renewal Models</td>
<td>Inflow and Infiltration Reduction - In It for The Long Haul</td>
<td>Why Winning the Race to Reduce Sewer Overflows Means Embracing Weather Radar and Rain Gauge Measurements</td>
</tr>
<tr>
<td>9:30 AM</td>
<td>Asset Management and Sustainability for the North Outfall Trunk Sewer</td>
<td>Improving Water Quality in San Francisco Bay through I/I Reduction</td>
<td>From Break to Beautiful: Clarksville’s Effluent Discharge Relocation from the Ohio River to Mill Creek</td>
</tr>
<tr>
<td>10:45 AM</td>
<td>Performing a Desktop Analysis to Justify Funding a Sustainable Sewer Asset Management Program</td>
<td>We Do This for the Kids and Fishes: Implementing Comprehensive Public and Private Rehabilitation to Eliminate SSOs near Schools</td>
<td>Utilizing Neural Networks, Real Time Data, and Forecasting to Improve Wet Weather Operations in Evansville, IN</td>
</tr>
<tr>
<td>ALT</td>
<td>Overcoming Design Challenges of a Deep Pump Station</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session Number</td>
<td>Session Title</td>
<td>Time</td>
<td>CE Credit Total/Type</td>
</tr>
<tr>
<td>----------------</td>
<td>---------------</td>
<td>------</td>
<td>----------------------</td>
</tr>
<tr>
<td><strong>Tuesday, June 4</strong>&lt;sup&gt;th&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Workshop A</td>
<td>Best Sewer Rehabilitation Practices for Mitigating I/I</td>
<td>8:30am-5:00pm</td>
<td>0.6 CEUs</td>
</tr>
<tr>
<td>Workshop B</td>
<td>Infiltration and Inflow Modeling for Collection System Utilities</td>
<td>8:30am-5:00pm</td>
<td>0.6 CEUs</td>
</tr>
<tr>
<td><strong>Wednesday, June 5</strong>&lt;sup&gt;th&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OGS</td>
<td>Opening General Session</td>
<td>8:30am-10:00pm</td>
<td>1.5 GCHs</td>
</tr>
<tr>
<td>Mobile Session I</td>
<td>Mobile Session - Technical</td>
<td>10:30am-11:50am</td>
<td>1.25 GCHs</td>
</tr>
<tr>
<td>Session 1</td>
<td>Tunnels</td>
<td>10:45am–11:45am</td>
<td>1.0 PDHs</td>
</tr>
<tr>
<td>Session 2</td>
<td>Trenchless</td>
<td>1:30pm–4:45pm</td>
<td>2.5 PDHs</td>
</tr>
<tr>
<td>Session 3</td>
<td>Combined Sewer Overflows/Sanitary Sewer Overflows</td>
<td>1:30pm–4:45pm</td>
<td>2.5 PDHs</td>
</tr>
<tr>
<td>Session 4</td>
<td>Potpourri</td>
<td>1:30pm–4:45pm</td>
<td>2.5 PDHs</td>
</tr>
<tr>
<td><strong>Thursday, June 6</strong>&lt;sup&gt;th&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 5</td>
<td>System Analysis</td>
<td>8:30am–11:45am</td>
<td>2.5 PDHs</td>
</tr>
<tr>
<td>Session 6</td>
<td>Delivering Products</td>
<td>8:30am–11:45am</td>
<td>2.5 PDHs</td>
</tr>
<tr>
<td>Session 7</td>
<td>Condition Assessment</td>
<td>8:30am–11:45am</td>
<td>2.5 PDHs</td>
</tr>
<tr>
<td>Mobile Session II</td>
<td>Mobile Session – Emerging Topics &amp; Technologies</td>
<td>12:30pm-1:30pm</td>
<td>1.0 GCHs</td>
</tr>
<tr>
<td>Tour 1</td>
<td>Belmont AWTP and Juan Soloman Park Lift Station</td>
<td>1:00pm–4:00pm</td>
<td>3.0 GCHs</td>
</tr>
<tr>
<td>Session 8</td>
<td>Forcemain</td>
<td>1:30pm–3:00pm</td>
<td>1.5 PDHs</td>
</tr>
<tr>
<td>Session 9</td>
<td>Local I</td>
<td>1:30pm–3:00pm</td>
<td>1.5 PDHs</td>
</tr>
<tr>
<td>Session 10</td>
<td>Operation &amp; Maintenance</td>
<td>1:30pm–3:00pm</td>
<td>1.5 PDHs</td>
</tr>
<tr>
<td><strong>Friday, June 7</strong>&lt;sup&gt;th&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 11</td>
<td>Asset Management</td>
<td>8:30am–11:45am</td>
<td>3.0 PDHs</td>
</tr>
<tr>
<td>Session 12</td>
<td>Inflow and Infiltration</td>
<td>8:30am–11:45am</td>
<td>3.0 PDHs</td>
</tr>
<tr>
<td>Session 13</td>
<td>Local II</td>
<td>8:30am–11:45am</td>
<td>3.0 PDHs</td>
</tr>
<tr>
<td>Tour 2</td>
<td>DigIndy Deep Rock Tunnel</td>
<td>8:30am–11:30am</td>
<td>2.0 GCHs</td>
</tr>
</tbody>
</table>
### Exhibition Schedule

**Wednesday, June 5**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00 AM – 6:15 PM</td>
<td>Exhibit Hall Open</td>
</tr>
<tr>
<td>10:00 AM – 10:45 AM</td>
<td>Networking Break</td>
</tr>
<tr>
<td>10:30 AM – 11:50 AM</td>
<td>Mobile Session I</td>
</tr>
<tr>
<td>11:45 AM – 1:30 PM</td>
<td>Networking Luncheon</td>
</tr>
<tr>
<td>3:00 PM – 3:45 PM</td>
<td>Networking Break</td>
</tr>
<tr>
<td>4:45 PM – 6:15 PM</td>
<td>Networking Reception</td>
</tr>
</tbody>
</table>

**Thursday, June 6**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00 AM – 3:45 PM</td>
<td>Exhibit Hall Open</td>
</tr>
<tr>
<td>10:00 AM – 10:45 AM</td>
<td>Networking Break</td>
</tr>
<tr>
<td>11:45 AM – 1:30 PM</td>
<td>Networking Luncheon</td>
</tr>
<tr>
<td>12:30 PM – 1:30 PM</td>
<td>Mobile Session II – Emerging Topics and Technologies</td>
</tr>
<tr>
<td>3:00 PM – 3:45 PM</td>
<td>Networking Break</td>
</tr>
</tbody>
</table>

*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.*
As of 5/20/2019

502 Equipment / Visual Imaging Resources................................. Booth 110
www.visualimagingresources.com/502-equipment  
Phone: 502-536-9125  
PO Box 7304  
Louisville, KY 40257  
Distributor of premium, new and used municipal and industrial equipment based in Louisville, Kentucky.

ADS Environmental Services................................................... Booth 219
www.adsenv.com  
Phone: 708-341-9701  
340 The Bridge St, Ste 204  
Huntsville, AL 35806  
Visit ADS to learn about TRUSTED SOLUTIONS for critical wastewater problems, including SSOs, optimized sewer cleaning, CSOs, inflow and infiltration, hydraulic modeling, accurate sewer billing, and sewer capacity management.

Advanced BioCatalytics Corp.................................................... Booth 112
www.abiocat.com  
Phone: 949-442-0880 x18  
18010 Skypark Cir, Ste 130  
Irvine, CA 92614  
Advanced BioCatalytics focuses the discovery of its Protein Surfactant Complex™ based chemistry for chemical and biological treatment of wastewater for FOG, biofilm, odor and H2S while maintaining ecofriendly and safe chemistry.

Advanced Drainage Systems, Inc ..................................... Booth 327
www.ads-pipe.com  
Phone: 317-417-0385  
288 Lafayette St  
London, OH 43140  
AP/M Permaform/ConShield Technologies .......................... Booth 330
www.permaform.net
Phone: 800-662-6465
6250 NW Beaver Dr, Ste 1
Johnston, IA 50131
   AP/M Permaform® CentriPipe® and Permacast® systems enable trenchless repair of failing manholes and pipes. CONmicSHIELD® liquid additive prevents MIC in concrete sanitary sewers, while Crystal-X® liquid additive provides waterproofing for concrete.

Aqseptence Group, Inc. .................................................. Booth 215
www.aqseptence.com
Phone: 813-855-6297
3180 Curlew Rd, Unit 207
Oldsmar, FL 34677
   AIRVAC –Aqseptence Group, Inc. manufactures vacuum valves, valve pits and station equipment. We assist with the design, construction and operation of complete systems with 600+ systems worldwide.

Avanti International .................................................. Booth 118
www.avantigrout.com
Phone: 800-877-2570
822 Bay Star Blvd
Webster, TX 77598
   Avanti International is the only full-service producer and most experienced supplier of high-quality chemical and cement grouts. Our products provide contractors, municipalities, and geotechnical engineers with cost-effective technology to stop leaks, stabilize soils, and control groundwater permanently.

BLD Services, LLC .................................................. Booth 308
www.bldllc.net
Phone: 770-317-1600
2424 Tyler St
Kenner, LA 70062
   BLD offers a range of services to include all forms of heavy and civil engineering construction for large projects, while also providing a diverse range of specialty services including trenchless rehabilitation of pipes and manholes.
Civica Infrastructure, Inc ............................................................... Booth 315
www.civi.ca
Phone: 905-417-9792
3-330 Rodinea Rd, Unit 3
Vaughan, ON L6A 4P5
Canada
Civica provides field-tested-and-proven, innovative data
management tools and expertly managed services which are
designed to address all aspects of wastewater resource
management.

CSL Services, Inc ................................................................. Booth 325
https://cslservices.com
Phone: 609-332-6493
7905 Browning Rd, Ste 316
Merchantville, NJ 08109
CSL Services is an engineering field services company that
specializes in wastewater collection systems flow monitoring and
condition assessment. We offer our services primarily to municipal
utilities and engineering firms.

Compliance EnviroSystems, LLC ............................................. Booth 213
www.ces-sses.com
Phone: 800-675-9409
1401 Seabord Dr
Baton Rouge, LA 70810
Compliance EnviroSystems, LLC was incorporated in 1994 as a
full service professional sewer evaluation firm. Our core mission is
to provide a complete range of sanitary and storm sewer system
evaluation services.

Contech Engineered Solutions ............................................... Booth 202
www.ContechES.com
Phone: 800-338-1122
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.
Cretex Specialty Products................................................................. Booth 101
www.cretexseals.com
Phone: 800-345-3764
N25 W23790 Commerce Cir, Ste E
Waukesha, WI 53188
Leading manufacturer of mechanical internal and external manhole
frame-chimney seals, including PRO-RING™, a lightweight grade
adjustment system used for manholes, catch basins and
underground utility structures.

DHI Water & Environment, Inc ...................................................... Booth 208
www.dhigroup.com
Phone: 323-828-2030
141 Union Blvd, Ste 250
Lakewood, CO 80228
DHI’s solutions combine state-of-the-art technology (MIKE
Powered by DHI software) and time-tested methodologies to
ensure that our clients’ specific requirements and challenges are
met.

Do2e Waste Water Treatment, LLC ............................................... Booth 331
https://do2e.com
Phone: 251-937-8200
36220 State Hwy 59
Stapleton, AL 36578
DO2E specializes in advanced FOG control, aeration, odor/H2S
control, wastewater pretreatment, algae control, on site sludge
digestion, lagoon aeration, collection systems/lift station solutions,
and chemical alternatives.

Doetsch Environmental Services, Inc............................................... Booth 225
www.doetschenv.com
Phone: 586-755-2090
21221 Mullin Ave
Warren, MI 48089
We are a full service environmental company specializing in large
diameter sewer cleaning and sewer inspection.
Duke's Root Control, Inc ......................................................... Booth 305
www.dukes.com
Phone: 315-472-4781
1020 Hiawatha Blvd W
Syracuse, NY 13204
Duke’s Root Control, Inc. has sewer root control down to a science. We prevent sanitary sewer overflows (SSOs) before they cause major havoc to systems and communities.

Environment One Corporation.............................................. Booth 221
www.eone.com
Phone: 518-344-9802
2773 Balltown Rd
Niskayuna, NY 12309
Are you dealing with failing septic tanks? Is I&I from your existing sewer system eating up budgets? ALL-TERRAIN SEWER low pressure systems from E/One are significantly more affordable than conventional gravity sewers and safer than septic systems.

Envirosight............................................................................. Booth 206
www.pipelinert.com
Phone: 412-216-8701
111-B3 Canfield Ave
Randolph, NJ 07869
Specializing in underground pipe and confined space inspection, Envirosight is a full-service manufacturer of manhole cameras, zoom survey cameras, robotic crawlers, push cameras, video nozzles, asset management software, and inspection vehicles.

Evoqua Water Technologies, LLC ............................................ Booth 309
www.evoqua.com
Phone: 506-452-7307
370 Wilsey Rd
Fredericton, NB E3B 6E9
Canada
Technologies for primary and secondary clarification, biological treatment, ultrafiltration, tertiary filtration, anaerobic digestion, odor control, UV, and disinfection. Brands: Envirex®, MEMCOR®, Wallace & Tiernan®, Neptune Benson®, Jet Tech, DAVCO™, RJ Environmental.
FloWav, Inc ........................................................................................................ Booth 303
www.flowav.com
Phone: 423-394-3735
1152 Mae St
Hummelstown, PA 17036
FloWav offers the highest quality flow monitoring and measurement products available to provide our customers with the most accurate data possible. We offer adaptable velocity sensors that have been lab and field tested for reliability and accuracy.

Flow-Tronic S.A. .................................................................................................... Booth 127
www.flow-tronic.com
Phone: 867-445-6432
Chemin des Tilleuls 32
Welkenraedt, B-4840 Belgium
FLOW-TRONIC is internationally recognized as the leading manufacturer of innovative and accurate Smart flow monitoring solutions for both open channel (wastewater and surface water) and full pipe (drinking and raw water).

FlowWorks .......................................................................................................... Booth 226
www.flowworks.com
Phone: 206-496-2574
101 4th Ave, #3200
Seattle, WA 98154
FlowWorks, the industry’s leading provider of cloud-based data management, is featuring our new Infinitii line of Machine Learning based solutions that automate I&I analysis and forecast combined sewer overflows.

Grande Water Management Systems ......................................................... Booth 232
www.grandeinc.com
Phone: 855-315-1115
3950 Montee Masson
Laval, QC H7B 1C4 Canada
Grande Water Management Systems specializes in stormwater management, wastewater management and CSO abatement. We provide engineered systems for tank and sewer flushing, overflow control, overflow screening and regulation.
Granite Inliner ................................................................................................. Booth 324
www.inliner.com
Phone: 502-585-1241
4520 N State Rd 37
Orleans, IN 47452
Granite Inliner is a leader in the pipeline rehabilitation industry specializing in water, steam, and UV cure CIPP.

Hach .................................................................................................................. Booth 231
www.hach.com
Phone: 800-368-2723
5600 Lindbergh Dr
Loveland, CO 80550
Hach provides innovations to support our customers. We give customers confidence in their water analysis by delivering expert answers, outstanding support, and reliable, easy-to-use solutions. Flow meter innovation, reliability, and accuracy are the hallmark of our products.

Hobas Pipe USA ............................................................................................... Booth 109
www.hobaspipe.com
Phone: 800-856-7473
1413 E Richey Rd
Houston, TX 77073
Centrifugally cast, fiber-reinforced, polymer mortar HOBAS pipe is inherently corrosion resistant. Key applications are sanitary and storm sewers, other corrosive environments and potable water. Pipe diameters range from 18 to 126 inches.

Huber .................................................................................................................. Booth 332
www.huber-technology.com
Phone: 704-990-2053
9735 Northcross Center Ct, Ste A
Huntersville, NC 28078
HUBER Technology, an expert in liquid/solid separation technologies, with a line of screening, grit and sludge handling processes. Serving municipal and industrial wastewater treatment markets with precision fabricated stainless steel equipment.
Hydromax USA ......................................................................................... Booth 320
www.hydromaxusa.com
Phone: 757-353-1521
2501 S Kentucky Ave
Evansville, IN 47714
Hydromax USA is a professional services firm that transforms infrastructure data into actionable business intelligence for those maintaining the country’s natural gas distribution, water distribution and wastewater collection utilities.

IER Environmental Services, Inc. .................................................... Booth 100
wwwGENER-ox.com
Phone: 509-885-3992
PO Box 18978
Spokane, WA 99228
IER Environmental Services is a supplier of (a) specialized wastewater treatment equipment designed for liquid/solids separation; (b) specialty chemical products; and (c) innovative chemical-free odor control technologies.

InfoSense, Inc ............................................................................................ Booth 301
www.infosense.com
Phone: 803-230-9134
8116 S Tryon St, Ste B3-203
Charlotte, NC 28273
Stop cleaning clean pipe and focus collections resources with the Sewer Line Rapid Assessment Tool, or SL-RAT. Use acoustic technology to quickly screen sewer pipes for blockages. Assess 10-20,000ft per day. Low cost, no flow contact, GPS enabled.

Innovyze .................................................................................................. Booth 121
www.innovyze.com
Phone: 626-568-6868
605 E Huntington Dr, Ste 205
Monrovia, CA 91016
World leader in hydraulic and water quality water, sewer, storm water, wet infrastructure rehabilitation prioritization, SCADA integration, and real-time analyses.
IPEX USA, LLC ......................................................................................... Booth 131
www.ipexna.com
Phone: 812-470-0306
1425 N Service Rd E, Unit 3
Oakville, ON L6H 1A7
Canada
   IPEX provides unsurpassed product engineering expertise to meet
   the demanding requirements of today's complex municipal
   pressure and gravity applications.

ITpipes ..................................................................................................... Booth 233
www.itpipes.com
Phone: 970-209-7374
4921 Alexander Blvd NE, Ste B
Albuquerque, NM 87107
   Turn your pipe inspections into actionable intelligence! OEM
   hardware, inspection type, and compliance system neutral-ITpipes
   field collection tools, streamlined data mgt and powerful reporting
   w/dynamic mapping take you from proactive to predictive!

Kanaflex Corp USA ............................................................................ Booth 122
www.landiainc.com
Phone: 224-545-2012
800 Woodlands Pkwy
Vernon Hills, IL 60061
   Kanaflex manufactures steel reinforced polyethylene pipe (SRPE)
   serving the storm, sanitary, and drainage markets in North
   America. US facilities and headquarters are located in Vernon
   Hills, IL. Available in 12-72" diameters.

Landia, Inc ............................................................................................ Booth 311
www.landiainc.com
Phone: 919-466-0603
111 Triangle Trade Dr
Cary, NC 27513
   Landia offers custom-engineered solutions for pumping and mixing
   of sludge and sewage. Visit Landia's booth and learn more about
   the manufacturer of the world's first chopper pump, and experience
   Landia's award-winning customer service.
LF Manufacturing ................................................................. Booth 120
www.lfm-frp.com
Phone: 800-237-5791
5528 E Hwy 290
Giddings, TX 78942
Established in 1974, LF Manufacturing is the leading manufacturer of fiberglass-reinforced manholes and wetwells. Manholes and wetwells are available in diameters up to 16-ft and depths in excess of 50-ft.

LMK Technologies ................................................................. Booth 119
www.lmktechnologies.com
Phone: 815-433-1275
1779 Chessie Ln
Ottawa, IL 61350
LMK Technologies has been a leader in trenchless Cured-In-Place-Pipe lining since 1993. LMK is recognized by many municipalities and engineering firms as the innovative leader for the trenchless renewal of sewer laterals, mainlines and manholes.

Logiball, Inc ................................................................. Booth 218
www.logiball.com/en
Phone: 800-246-5988
440 Papin St
Quebec, QC G1P 3T9
Canada
Equipment for the maintenance and trenchless rehabilitation of sewers. Complete line of inflatable pipe plugs and sleeve installers for cipp sectional liners and mechanical locking sleeves.

Lucity, Inc ................................................................. Booth 323
www.lucity.com
Phone: 800-492-2468
10561 Barkley, Ste 100
Overland Park, KS 66212
Lucity, Inc., a CentralSquare company, develops and supports LucityAM, a comprehensive, flexible and scalable enterprise asset and maintenance management solution for public works and utility departments.
Milliken Infrastructure Solutions, LLC .............................. Booth 314
https://infrastructure.milliken.com
Phone: 855-655-6750
920 Milliken Rd
Spartanburg, SC 29303
Milliken Infrastructure helps strengthen, repair, protect and rehabilitate existing assets – from pipes underground to buildings in the sky. See how our proven materials and systems can help solve your toughest infrastructure challenges.

MTA Messtechnik GmbH .................................................... Booth 125
www.mta-messtechnik.at
Phone: 43 4212 71491
Handelsstrasse 14-16
St Veit An Der Glan, KAE 9300
Austria
Leader in technology for specialized problems in the water and wastewater industry: reviewing and rating of water supply and wastewater disposal networks, evaluation of systems, and profile measurement for operating companies of wastewater disposal systems and waste dumps.

Nezat Training and Consulting, Inc .................................... Booth 333
www.nezat.com
Phone: 281-788-5221
24991 Hayden Rd
Splendora, TX 77372
Supplies training and consultation services to contractors and municipalities involved in sewer cleaning, inspection, and rehabilitation processes.

OBIC, LLC .......................................................................... Booth 318
www.obicproducts.com
Phone: 419-408-5079
01116 County Rd 17
Bryan, OH 43506
OBIC, LLC manufactures and installs proprietary polymer lining systems for wastewater structures, potable water structures, and for corrugated and concrete drainage culverts.
Orenco Systems, Inc................................................................. Booth 103
www.orenco.com
Phone: 800-348-9843
814 Airway Ave
Sutherlin, OR 97479
Orenco Systems, Inc. has researched, designed, and manufactured innovative onsite and decentralized wastewater collection and treatment technologies.

Pipemedic By Quakewrap ......................................................... Booth 116
https://pipemedic.com
Phone: 866-782-5397
6840 S Tucson Blvd
Tucson, AZ 85756
We offer turnkey solutions for repair of large diameter Prestressed Concrete Cylinder Pipes (PCCP) with carbon Fiber Reinforced Polymer (FRP) products which include sealed engineering drawings, materials, and installation by certified contractors.

Process Wastewater Technologies, Inc.............................. Booth 214
www.pwtech.us
Phone: 410-238-7977
9004 Yellow Brick Rd, Ste D
Rosedale, MD 21237
Provider of the world’s leading range of screening technologies for CSO/SSO treatment, unique biological wastewater treatment processes, and the Volute Dewatering Press sludge dewatering system.

R&R Visual, Inc......................................................................... Booth 227
www.seepipe.com
Phone: 800-776-5653
1828 W Olson Rd
Rochester, IN 46975
R&R Visual provides pipeline inspection services including video, sonar, laser, lateral launching and 360(deg) scanning.

RapidView IBAK North America ........................................... Booth 302
www.rapidview.com
Phone: 800-656-4225
1828 W Olson Rd
Rochester, IN 46975
Provides high quality pipeline inspection and rehabilitation equipment including the revolutionary new PANORAMO 360° pipeline and manhole scanning systems.
RedZone Robotics, Inc ................................................................. Booth 317
www.redzone.com
Phone: 412-476-8980 x292
91 43rd St
Pittsburgh, PA 15201
As a leader and innovator in advanced pipeline assessment, RedZone Robotics pioneered inspection for wastewater collection systems. Using proprietary data acquisition robotics and industry leading ICOM software, RedZone helps owners and engineers get all of the information they need and make it useful.

RELINER / Duran, Inc ................................................................. Booth 312
www.reliner.com
Phone: 800-508-6001
9 Matthews Dr, Unit A1/A2
East Haddam, CT 06423
RELINER® / Duran Inc. manufactures simple, cost effective, durable products for use in the wastewater and construction industries. Our product lines include Inside Drop Bowls, Stainless Steel Pipe Supports and Modular Manhole Invert Channels.

REXA ................................................................. Booth 230
www.rexa.com
Phone: 617-694-9797
4 Manley St
West Bridgewater, MA 02379
Our industrial grade linear and rotary actuators are ideal for any application requiring precise positioning, stiff control, and high reliability with minimal maintenance.

Rhomar Industries, Inc. ................................................................. Booth 115
www.rhomar.com
Phone: 800-688-6221
2107 E Rockhurst
Springfield, MO 65802
Dedicated to the innovation of environmentally responsible maintenance solutions and creative solutions for the frustrating problems that plague operation and maintenance departments.
RJN Group, Inc ................................................................. Booth 224  
www.rjn.com  
Phone: 954-415-3742  
200 W Front St  
Wheaton, IL 60187  
  
RJN Group is a professional engineering consulting firm focused on improving underground municipal sewer, stormwater, and water infrastructure.

Robinson Pipe Cleaning Co ................................................. Booth 124  
https://robinsonpipe.com  
Phone: 412-921-2100  
2656 Idlewood Rd  
Pittsburgh, PA 15205  
  
Offers full length digital CCTV inspection, sewer cleaning, sonar inspection, chemical grouting, lateral TV inspection, lateral grouting, manhole rehabilitation, sectional CIPP liner repairs, laser ring pipe profiling, chemical root treatment.

Sewer History Exhibit .......................................................... Booth 126  
www.sewerhistory.org  
Phone: 410-442-7473  
2470 Longstone Ln, Ste M  
Marriottsville, MD 21104  
  
NASSCO’s Sewer History Exhibit has artifacts related to sewage conveyance systems dating back to about 3500 BCE through the 1930s. It demonstrates the evolution of the assessment, maintenance and rehabilitation of underground infrastructure.

Smartcover Systems............................................................ Booth 300  
www.smartcoversystems.com  
Phone: 760-291-1980  
2067 Wineridge Pl, Ste E  
Escondido, CA 92029  
  
SmartCover Systems provides a real-time wireless communication solution that monitors sewer system flows to uncover and alert agency staff to potential overflows and provide real-time condition assessment of pipelines to identify problems.
Sunbelt Rentals ............................................................................. Booth 133
www.sunbeltrentals.com
Phone: 678-725-2553
2341 Deerfield Dr
Fort Mill, SC 29715
Sunbelt Rentals Pump and Power Services offers a wide selection of pumps, including diesel and electric models from 4” to 24”. Our dedicated engineers and industry experts will work with you to find the right equipment rental solutions for your job.

Teledyne ISCO ............................................................................ Booth 212
www.teledyneisco.com
Phone: 800-228-4373
4700 Superior St
Lincoln, NE 68504
Teledyne Isco builds reliable in-plant and field-portable instruments for water quality and pollution monitoring. Products include automatic samplers, open-channel flowmeters, data communication packages, and analysis software.

Trimble Water ............................................................................. Booth 207
www.trimblewater.com
Phone: 888-835-6437
830 Canning Pkwy
Victor, NY 14564
Trimble Water with the Telog product brand provides integrated solutions and tools for smart water monitoring and management enabling utility automation that results in increased productivity, regulatory compliance and improved customer service/response.

Trumbull MFG ............................................................................ Booth 220
www.trumbull-mfg.com
Phone: 724-699-8776
3850 Hendricks Rd
Youngstown, OH 44515
Trumbull MFG, located in Ohio, manufactures polymer manhole lids and frames which are lightweight, traffic load rated, non-corrosive, and radio transparent. We also manufacture tools for use in water and wastewater industries.
Uni-Bell PVC Pipe Association ........................................ Booth 307
www.PVCPA.org
Phone: 972-243-3902
2711 Lyndon B Johnson Fwy, #1000
Dallas, TX 75234
Uni-Bell PVC Pipe Association is the technical trade association for
the manufacturers of gasketed PVC pipe. Uni-Bell PVC Pipe
Association staff will be on hand to answer PVC pipe questions.

USP Technologies ............................................................ Booth 319
www.usptechnologies.com
Phone: 360-303-5782
1375 Peachtree St NE, Ste 300 N
Atlanta, GA 30309
USP Technologies offers full-service chemical-based solutions to
solve pain points for our municipal wastewater customers including
cost-effective odor and corrosion control technologies for lift
stations, force mains and gravity lines.

Utility Systems, Science & Software, Inc. ............................ Booth 113
www.uscubed.com
Phone: 714-542-1004
601 N Parkcenter Dr, Ste 209
Santa Ana, CA 92705
Utility Systems Science & Software (US3) is a leading Sewer Flow
Monitoring company in the USA, providing both temporary and
permanent sewer flow monitoring with a 95% uptime guaranteed.
Includes all Hach instrumentation, manpower and reporting.

Vaughan Company, Inc .................................................... Booth 201
www.chopperpumps.com
Phone: 360-249-4042
364 Monte Elma Rd
Montesano, WA 98563
Vaughan chopper pumps and Triton screw centrifugal pumps are
available in several configurations and sizes to suit most needs for
agricultural, municipal and industrial processing applications. Durability
and performance are critical in any application.
VEGA Americas, Inc................................................................. Booth 326
www.vega.com
Phone: 513-272-4030
4170 Rosslyn Dr
Cincinnati, OH 45209
VEGA is a global manufacturer of sensors for measuring level, point level, pressure as well as devices and software for integrating them into process control systems.

Vieux & Associates, Inc............................................................ Booth 200
www.vieuxinc.com
Phone: 405-325-1818
301 DL Boren Blvd, Ste 3050
Norman, OK 73072
Vieux & Associates, Inc. leads the industry in rain gauge adjusted radar rainfall services, rain gauge network evaluation, radar-based design storm development for municipal sewer districts and regional water management authorities.

WinCan, LLC ................................................................................. Booth 209
www.wincan.com
Phone: 412-335-8271
300 Cedar Ridge Dr, Ste 308
Pittsburgh, PA 15205
WinCan is the industry’s most preferred sewer inspection software, with more than 8,500 licenses worldwide. WinCan works with all brands of sewer inspection technology—including crawlers, zoom cameras and push cameras.

WSG & Solutions, Inc ................................................................. Booth 306
www.wsgandsolutions.com
Phone: 610-316-1443
160 Commerce Dr, Ste 100
Montgomeryville, PA 18936
WSG & Solutions is the market leader in the supply of municipal and industrial wastewater and CSO products for screening, grit removal, and tank flushing applications. We are the exclusive North American CSO distributor of the CSO Group and Biogest.
Xylem, Inc........................................................................................................ Booth 107  
www.xylem.com  
Phone: 314-238-7383  
8920 State Route 108, Ste D  
Columbia, MD 21045  
Xylem is a leading global water technology company committed to "solving water" by creating innovative and smart technology solutions to meet the world's water and wastewater needs.

ZCL | Xerxes........................................................................................................ Booth 114  
www.zcl.com  
Phone: 952-887-1890  
7901 Xerxes Ave S  
Minneapolis, MN 55431  
Xerxes Corporation is a manufacturer of underground and aboveground fiberglass storage tanks for water and wastewater applications including onsite, potable/non-potable, landfill leachate and chemicals, oil/water separators, grease interceptors and wet wells.
<table>
<thead>
<tr>
<th>Presenter/Moderator</th>
<th>Session(s)</th>
<th>Company/Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shirish Agarwal</td>
<td>Session 05</td>
<td>Jacobs</td>
</tr>
<tr>
<td>Nikolaos Apsilidis</td>
<td>Speaker Session 03</td>
<td>Greeley and Hansen</td>
</tr>
<tr>
<td>Britt Babcock</td>
<td>Speaker WKSP A</td>
<td>Avanti International</td>
</tr>
<tr>
<td>Paul Batman</td>
<td>Alternate Session 07</td>
<td>Arcadis</td>
</tr>
<tr>
<td>Theodore Bennett</td>
<td>Speaker Session 06</td>
<td>Jones &amp; Henry Engineers, Ltd.</td>
</tr>
<tr>
<td>David Bingham</td>
<td>Speaker Session 04</td>
<td>AECOM</td>
</tr>
<tr>
<td>Amy Bley</td>
<td>Speaker Session 08</td>
<td>RJN Group, Inc.</td>
</tr>
<tr>
<td>Robert Buss</td>
<td>Speaker Session 11</td>
<td>Carollo Engineers, Inc.</td>
</tr>
<tr>
<td>Jeremy Cawley</td>
<td>Speaker Session 02</td>
<td>City of Columbus DOSD</td>
</tr>
<tr>
<td>Carl Chan</td>
<td>Moderator Session 01</td>
<td>Stantec</td>
</tr>
<tr>
<td>Tammy Cleys</td>
<td>Speaker Session 12</td>
<td>Carollo Engineers, Inc.</td>
</tr>
<tr>
<td>Jeffrey Coffey</td>
<td>Speaker Session 01</td>
<td>DLZ Corp</td>
</tr>
<tr>
<td>Brandon Cooper</td>
<td>Speaker Session 06</td>
<td>Greeley and Hansen</td>
</tr>
<tr>
<td>Brian Culich</td>
<td>Speaker Session 02</td>
<td>AP/M Permaform</td>
</tr>
<tr>
<td>Donald Daniel</td>
<td>Speaker Session 04</td>
<td>Rock Creek Public Sewer Dist</td>
</tr>
<tr>
<td>Teddy Deahl</td>
<td>Speaker Session 04</td>
<td>Bowen</td>
</tr>
<tr>
<td>Ted Deboda</td>
<td>Speaker Session 04</td>
<td>Baltimore County</td>
</tr>
<tr>
<td>Javier Dennis</td>
<td>Speaker Session 01</td>
<td>LA Sanitation</td>
</tr>
<tr>
<td>Nathan Dickman</td>
<td>Speaker Session 01</td>
<td>DLZ</td>
</tr>
<tr>
<td>Christopher Dinsmore</td>
<td>Speaker Session 12</td>
<td>EBMUD</td>
</tr>
<tr>
<td>Michael Ellerbrock</td>
<td>Speaker Session 03</td>
<td>Strand Associates, Inc.</td>
</tr>
<tr>
<td>Kevin Enfinger</td>
<td>Speaker Session 04</td>
<td>ADS Environmental Services</td>
</tr>
<tr>
<td>Catherine Findley</td>
<td>Speaker Session 06</td>
<td>Wade Trim</td>
</tr>
<tr>
<td>Javier Homero Flores</td>
<td>Speaker WKSP B</td>
<td>Cervantes King County Dept Of Nat'l Res &amp; Parks</td>
</tr>
<tr>
<td>Amanda Foote</td>
<td>Speaker Session 02</td>
<td>AECOM</td>
</tr>
<tr>
<td>William Fussner</td>
<td>Speaker Session 02</td>
<td>Northeast Ohio Regional Sewer District</td>
</tr>
<tr>
<td>Michael Georgalas</td>
<td>Speaker Session 08</td>
<td>Stantec Consulting Services Inc.</td>
</tr>
<tr>
<td>Sara Goebel Burns</td>
<td>Speaker Session 12</td>
<td>and McDonnell</td>
</tr>
<tr>
<td>Walter Graf</td>
<td>Moderator Session 02</td>
<td>The Water Research Foundation</td>
</tr>
<tr>
<td>Ahmad Habibian</td>
<td>Speaker Session 04</td>
<td>CDM Smith</td>
</tr>
<tr>
<td>Susan Hamilton</td>
<td>Alternate Session 04</td>
<td>City of Richmond Virginia DPU</td>
</tr>
<tr>
<td>Eric Harold</td>
<td>Speaker Session 05</td>
<td>Carollo Engineers</td>
</tr>
<tr>
<td>Olivia Hawbaker</td>
<td>Speaker Session 07</td>
<td>Citizens Energy Group</td>
</tr>
<tr>
<td>Jeffery Griffiths</td>
<td>Moderator Session 02</td>
<td>Hydromax USA</td>
</tr>
<tr>
<td>Christine Heinrich-Josties</td>
<td>Alternate Session 05</td>
<td>City of Los Angeles, Bureau of Sanitation Speaker</td>
</tr>
<tr>
<td>Patrick Henthorn</td>
<td>Speaker Session 13</td>
<td>Xylem</td>
</tr>
<tr>
<td>Phillip Hubbard</td>
<td>Speaker WKSP A</td>
<td>HRSD</td>
</tr>
<tr>
<td>Shawn Ireland</td>
<td>Speaker Session 01</td>
<td>Stantec</td>
</tr>
<tr>
<td>PRESENTER AND MODERATOR DIRECTORY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stephen Jeffus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RJN Group Inc</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speaker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jeff Jones</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCWA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternate Session 03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>David Jurgens</td>
<td></td>
<td></td>
</tr>
<tr>
<td>City of Fayetteville</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speaker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WKSP A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Andrew Kaufman</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metropolitan Sewer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>District of St. Louis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speaker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maria Krug</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comuniello Xylem</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speaker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Angel Leon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>City of Laredo</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speaker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kyle Logue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brown and Caldwell</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speaker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WKSP B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tim Loper</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carollo Engineers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speaker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Matthew Malone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Civica Infrastructure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inc Speaker Session 12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>John Matthews</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Louisiana Tech</td>
<td></td>
<td></td>
</tr>
<tr>
<td>University Speaker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WKSP A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jane McLamarrah</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stantec Consulting Services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speaker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 10, Moderator Session 13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jun Meng</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Greeley and Hansen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speaker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Katherine Merkle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Donohue &amp; Associates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speaker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steven Meyer Bowen, Collins &amp; Associates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speaker Session 07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kate Mignone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AECOM Speaker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Priyanka Mohandoss</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speaker WKSP B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brittany Montgomery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Town of Clarksville</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speaker Session 13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catherine Morley RJN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group Inc Speaker Session 12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stephen Motley</td>
<td></td>
<td></td>
</tr>
<tr>
<td>City Of Virginia Beach Dept</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public Utilities Speaker WKSP B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Omar Muhammad</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WSSC Speaker WKSP A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dan Murray</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Protection Agency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderator Session 06, 08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joe Nagy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Citizens Energy Group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternate Session 09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rusty Nezat Jigawon, Inc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speaker Session 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jeremy Nitka</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arcadis Moderator Session 13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quinton Nottingham</td>
<td></td>
<td></td>
</tr>
<tr>
<td>City of Richmond</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Virginia DPU Speaker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Robert O'Dette</td>
<td></td>
<td></td>
</tr>
<tr>
<td>State of Tennessee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternate Session 12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sean O'Rourke</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hazen and Sawyer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speaker Session 07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cheryl Paulin ADS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Services Moderator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 07, 12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Matthew Pierce</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black &amp; Veatch Speaker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 09, Alternate Session 13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tad Powell</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hazen and Sawyer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speaker Session 02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christopher Ranck</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arcadis Alternate Session 13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A Retana Brown and Caldwell</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speaker WKSP B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wendy Reust</td>
<td></td>
<td></td>
</tr>
<tr>
<td>City of Fort Wayne</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speaker Session 09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bryan Rogne</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brown and Caldwell</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speaker Session 06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stephen Rowe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Citizens Energy Group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternate Session 13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anastasia Rudenko</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GHD Speaker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Karen Saavedra</td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Structurepoint Speaker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farshad Salehzadeh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Region of Peel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speaker Session 12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jeffrey Scarano</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HRSD Speaker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zach Schortgen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>City of Fort Wayne</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternate Session 13</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Alison Schreiber
Northeast Ohio Regional Sewer District
Speaker Session 06

Dave Servidio Mott MacDonald Moderator
Session 01, 03

Firat Sever
QuakeWrap, Inc.
Speaker WKSP A

Kevin Slaven
ARCADIS Speaker
Session 11

Donald Smith Town of Cary
Speaker Session 05

Jimmy Stewart Pure Technologies
Moderator Session 05, 10

Karyn Stickel Hubbell, Roth & Clark, Inc
Speaker Session 07, 09, 11

Pradeep Sudini CDM Smith
Speaker WKSP B

William Sukenik
Woolpert Speaker
Session 08

Dianne Sumego DMS Water Solutions, LLC
Moderator Session 02, 07

Timothy Sumner Crawford, Murphy and Tilly Inc Coordinator
WKSP A, Speaker
Session 11

Derek Sutton Citizens Energy Group Speaker
Session 09

Tim Taylor Carollo Engineers Speaker
Session 06

Carlos Toro-Escobar Brown and Caldwell
Speaker WKSP B

Srirn Vallabhaneni Stantec Speaker
WKSP A, Moderator Session 09

Kevin Vander Tuig Wade Trim Speaker
Session 03

Kent Veech Woolpert Speaker Session 08

Baxter Vieux Vieux & Associates, Inc. / AE Monitoring Speaker
WKSP B, Speaker Session 13

Peter Wamsley Beam Longest and Neff LLC
Speaker Session 13

Jennifer Welsch
Metro Saint Louis Sewer District
Moderator Session 04, 08

Christy Willson
Hornor & Shifrin Inc. Moderator Session 04, 06

Matthias Wittenberg CDM Smith Coordinator WKSP B

Christopher Wohlleb Mott Macdonald Speaker Session 07

Tiantian Xiang Arcadis Alternate Session 01

Alfredo Zaldivar City of Los Angeles - Department of Public Works Speaker
Session 11
## CONFERENCE SCHEDULE AT-A-GLANCE

### Tuesday, June 4

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</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 – 12:00 PM</td>
<td>Workshop B</td>
</tr>
</tbody>
</table>

### Wednesday, June 5

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<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 – 6:15 PM</td>
<td>Exhibition Open</td>
</tr>
<tr>
<td>10:30 AM – 11:50 AM</td>
<td>Mobile Session I</td>
</tr>
<tr>
<td>10:45 AM – 11:45 AM</td>
<td>Technical Session 1</td>
</tr>
<tr>
<td>11:45 AM – 1:30 PM</td>
<td>Networking Lunch</td>
</tr>
<tr>
<td>1:30 PM – 4:45 PM</td>
<td>Technical Sessions 2, 3, 4</td>
</tr>
<tr>
<td>4:45 PM – 6:15 PM</td>
<td>Networking Reception</td>
</tr>
</tbody>
</table>

### Thursday, June 6

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<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>10:00 AM – 3:45 PM</td>
<td>Exhibition Open</td>
</tr>
<tr>
<td>11:45 AM – 1:30 PM</td>
<td>Networking Lunch</td>
</tr>
<tr>
<td>12:30 PM – 1:30 PM</td>
<td>Mobile Session: Emerging Topics and Technologies</td>
</tr>
<tr>
<td>1:00 PM – 4:00 PM</td>
<td>Facility Tour A: Belmont AWTP and Juan Soloman Park Lift Station</td>
</tr>
<tr>
<td>1:30 PM – 3:00 PM</td>
<td>Technical Sessions 8, 9, 10</td>
</tr>
</tbody>
</table>

### Friday, June 7

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 AM – 12:00 PM</td>
<td>Registration</td>
</tr>
<tr>
<td>8:30 AM – 11:30 AM</td>
<td>Facility Tour B: DigIndy Deep Rock Tunnel</td>
</tr>
<tr>
<td>8:30 AM – 11:45 AM</td>
<td>Technical Sessions 11, 12, 13</td>
</tr>
</tbody>
</table>
Indianapolis Marriott Downtown

Marriott International aspires to be the global leader that demonstrates how responsible hospitality management can be a positive force for the environment and create economic opportunities around the world, and in the communities where we work and live!

Marriott Hotels and Resorts replaced light bulbs with energy-efficient bulbs, installed low-flow showerheads and toilets, introduced a water/energy saving linen program, involves its global workforce in eco-volunteerism and operates the most ENERGY STAR® certified properties in the industry, as part of Marriott’s portfolio of brands.

Meetings and Events at Marriott use 100% recycled note pads, pens made from recycled materials, eco-friendly water service, and meeting room recycling where available. Organic Flowers are available upon request. Leftover food is donated to Second Helpings, an organization who uses it to create 4,000 hot, nutritious meals each day to feed people in need in Central Indiana.

Indianapolis Marriott Downtown has an amenity reuse program, water saving shower heads and toilets in all guest rooms, motion sensor and timed light switches in service landings and storage rooms, sensors and water conserving faucets in all public restrooms, optional linen reuse program for multiple night guests, recycling program for paper, cardboard, newspapers and ink cartridges, and fluorescent lighting throughout meeting areas. The HVAC system is scheduled to turn on and off in meeting rooms based on event agendas. Starbucks uses recyclable cups from post-consumer paper.

Learn about Marriott’s green programs at https://serve360.marriott.com/sustain/. Contact us to make your next meeting green.

Indiana Convention Center

FOOD SERVICE

Strategic partnerships have been developed with local farmers to purchase seasonal fresh fruits, vegetables, meats and poultry. Second Helpings, a food rescue program, reclains food after a food function and takes it to their kitchens. Local residents, under the supervision of training chefs, participate in a job-training program, learning to prepare food donated to homeless shelters and missions.

An entire line of biodegradable disposable service ware products is available upon request, giving meetings a green alternative to standard china and silverware. Green Seal Certified cleaning products are used throughout the facility.
RECYCLING

The Indiana Convention Center & Lucus Oil Stadium recycles approximately 60 tons of aluminum cans, plastic bottles, glass and cardboard annually – from Colts games to expos and mega meetings. In addition, the facilities have a program for wholesalers to recycle pallets, paper and cooking oils. Batteries, light bulbs and computers are recycled to local organizations. A Cardboard baler compacts cardboard, making it easier to pick-up. A food waste pulper recycles dishwasher and condenses waste before going into the landfill.

ENERGY EFFICIENCY

It is standard operating procedure to reduce lighting and HVAC during move in and move out in the exhibit hall and in unoccupied areas of the building. Escalators are also scheduled according to in house groups.

High-efficiency exterior curtainwall glass throughout the Convention Center helps keep energy use low. Motion sensor lights controls are installed in restrooms. Building design allows us to use natural light daylight in most of lobby areas and exterior lighting is on low level on non-event days. Meeting rooms and lobby areas utilize compact fluorescent lamps and exhibit halls provide more efficient lower wattage lamps with the same light output.

WATER

In an effort to save water, the center provides water stations rather than individual bottles for attendees. Sink faucets are sensory guided to use less water. In the public areas of the facility, the toilets have low valves with automatic flush. Also, for clean-up, all parking lots are swept – not sprayed – saving this valuable resource. Stormwater water infiltration basins separate storm water from oils and grease traveling to nearby waterways.

WALKABLE

With over 7,100 hotel rooms, 200 restaurants and 50 attractions within walking distance of the center, attendees can walk while convening. Indy's walkability keeps transportation costs down. New bike racks have also been installed to promote alternative forms of transportation.
UPCOMING WEF EDUCATION AND TRAINING EVENTS

Nutrient Removal and Recovery Symposium 2019
    July 23-25, 2019
    Minneapolis, Minnesota
    www.wef.org/Nutrients

WEF/AWWA Transformative Issues Symposium 2019
    August 7-9, 2019
    Washington, D.C.
    www.wef.org/TISWorkforce

WEFTEC 2019
    September 21 – 25, 2019
    Chicago, Illinois
    www.weftec.org

WEF/AWWA The Utility Management Conference 2020
    Call for Abstracts Open Now
    February 25-28, 2020
    Anaheim, California
    www.wef.org/UtilityManagement

Odors and Air Pollutants Conference 2020
    March 15-18, 2020
    Cincinnati, Ohio
    www.wef.org/OdorsAir

Residuals and Biosolids Conference 2020
    Late March/Early April 2020
    Minneapolis, Minnesota
    www.wef.org/ResidualsBiosolids

Stormwater & Green Infrastructure Symposium 2020
    Late March/Early April 2020
    Minneapolis, Minnesota
    www.wef.org/StormwaterGI

Collection Systems Conference 2020
    Early June 2020
    El Paso, Texas
    More Info Coming Soon
    www.wef.org/CollectionSystems
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.