



# **Collection Systems Conference 2020**

## **Technical Program**

(Updated March 16, 2020)

**June 2 – 5, 2020**

**El Paso Convention Center**

**El Paso, Texas**

*This conference is being held by the Water Environment Federation (WEF) in cooperation with the Water Environment Association of Texas (WEAT) and the Water Research Foundation (WRF).*

## **Pre-conference Workshops**

*(Additional fees apply)*

### **Workshop A: Wet Weather Storage Solutions: From CIP Planning and Capacity Management to Construction, Operations and Maintenance**

**Tuesday, June 2**

**8:30 AM – 5:00 PM**

This workshop will focus on the conceptualization and implementation of wet weather storage projects for collection systems including tanks, pipelines and tunnels. Emphasis will be placed on data analysis needed to site and properly size a wet weather storage facility. Comparisons will be made between wet weather storage and traditional conveyance and treatment alternatives, in a collection system, big or small. The workshop will also include hands-on exercises to give all attendees an opportunity to explore the benefits of wet weather storage solutions or refine their understanding of such facilities. Lastly, we will address planning and design considerations, including the fundamentals of storage tank and storage tunnel construction, operation, and maintenance using real project case studies.

*Carlos Toro-Escobar, Andy Lukas, Bryan Rogne, Brown and Caldwell; Chris Stephan, HRSD; Bently Chan, Henrico County Public Utilities; Roger Cronin; Christine Heinrich-Josties, Bureau of Sanitation; Kyle Leining, DN Tanks; Rosa Castro-Krawiec, JCK Underground, Inc.*

### **Workshop B: Advancements in Flow Monitoring and Data Analytics in Supporting Effective Management of Wastewater Collection Systems**

**Tuesday, June 2**

**8:30 AM – 5:00 PM**

This workshop is intended to offer participants an opportunity to learn about or expand their knowledge of advancements in flow monitoring and data analytics for effective wastewater collections systems. Workshop participants will gain a deeper understanding of prevailing practices; and technological advancements and innovation in flow metering equipment and data acquisition /management/analytics to support two key aspects of the collection systems management functions: 1) capital improvement programs to address I/I reduction, overflow control and capacity/condition assurance; and 2) operation and maintenance to achieve operational optimization and in-time maintenance targets. In essence, the proposed workshop will help participants gain/enhance their knowledge on prevailing industry practices as well as the futuristic trends.

*Srini Vallabhaneni, Stantec; Hatem El-Sayegh; Richard Kauffman, The Metropolitan St. Louis Sewer District; Phillip Hubbard, HRSD; Fazle Rabbi, Houston Water; Kevin Enfinger, ADS Environmental Services; Rick Dey, Teledyne, Isco; James Caruso, Hach Company*

**Facility Tours**  
**(Additional fees apply)**

**Tour 1: Lift Stations and Hickerson Water Reclamation Facility**  
**Thursday, June 4**  
**8:00 AM – 11:30 AM**

Built in 1994, the large Frontera Lift Station collects and pumps the majority of the flow for the Westside of El Paso. It uses super oxygenation for odor control. Upstream three miles is the Coates Lift Station, which was built in 1991 and uses magnesium hydroxide for odor control.

In operation since 1987, the Hickerson Water Reclamation Facility receives wastewater from residential, commercial and industrial sources on the west side of El Paso and treats up to 17.5 MGD per day. The plant is an extended aeration activated sludge treatment plant that uses both electric and gas-powered aeration blowers in the treatment process and UV radiation as a means of disinfection of treated wastewater. The plant produces reclaimed water for parks, schools and a country club golf course.

University of Texas at El Paso's Engineering Department will have a portable laboratory onsite at the treatment plant to mimic the advanced water purification process, taking treated wastewater to drinking water standards.

**Tour 2: Kay Bailey Hutchison Desalination Plant and TechH2O Learning Center**  
**Friday, June 5**  
**8:00 AM – 11:30 AM**

El Paso is home to the world's largest inland desalination plant, which opened in 2007 and is frequented by visitors from all over the globe. El Paso has vast brackish groundwater resources that were previously unusable. The Desalination Plant filters out the salts using reverse osmosis to produce up to 27.5 MGD of fresh water daily. About 83% of the water is recovered while the remainder is produced as a concentrate, which is disposed through deep-well injection.

Next door to the Plant is the TechH2O Learning Center, a museum-quality education center that hosts thousands of students every year for field trips and events.

**Opening General Session**  
**Wednesday, June 3**  
**8:30 AM – 10:00 AM**

More information coming soon!

**Session 01: Utilities of the Future**

**Wednesday, June 3**

**10:45 AM - 11:45 AM**

**10:45 AM      How McKinney Texas Is Using Acoustic Inspection to Improve Cleaning Efficiency in a High-Growth Utility Environment**

Gary West, City of McKinney; Walt Woodard, Infosense, Inc.

**11:15 AM      Leveraging Real Time Decision Support Systems (RT-DSS) to Benefit Treatment, Maximize Storage, and Support Wet Weather Operations**

Richard Loeffler, Nick Mills, Xylem, Inc.; William Halsted, Oro Loma Sanitary District; Bryant McDonnell, Emnet LLC

**11:45 AM      Session Adjourns for Networking Luncheon**

**Alternate      The Use of Innovative AI Programs and Advanced Live-Flow Inspection Technologies to Assess and Prioritize Rehabilitation for Pressurized Conveyance Infrastructure**

Mark Wade, BlueWater Solutions Group, Inc.

**Session 02: Pump Stations/Odors**

**Wednesday, June 3**

**1:30 PM - 4:45 PM**

- 1:30 PM**      **Adapting Collection System Infrastructure to Changing Flood Vulnerabilities - Southeastern Massachusetts Case Studies**  
Anastasia Rudenko, Marc Drainville, GHD
- 2:00 PM**      **City of San Mateo Dale Avenue Pump Station Transient Analysis**  
Michael Georgalas, Stantec Consulting Services Inc.
- 2:30 PM**      **It Sticks And It Stinks!**  
David Trejo, Derek Schwanke, RJN Group; Elizabeth Boddicker, Upper Trinity Regional Water District
- 3:00 PM**      **Networking Break**
- 3:45 PM**      **Super Oxygenation for Collection System Odor Control**  
Scott Cowden, Michael Ansell, Jacobs; Thomas Cieslik, David Ornelas, El Paso Water; Aide Zamarron; Mark Smith, Jacobs
- 4:15 PM**      **Sewer Smell Never Bothered Anyone, Or?**  
Anders Wistrom, Centriair
- 4:45 PM**      **Session Adjourns for Networking Reception**
- Alternate**      **Consequences of Under-Estimating Friction Losses in Wastewater Forcemains**  
Christopher Michalos, CDM Smith
- Alternate**      **Liquid Phase Collection System Sulfide Control: Early Field Results using a New Low-Hazard Iron Product (SulFeLox™)**  
Ian Watson, US Technologies; John Walton; Zachary Scott, Trojan Technologies; Simon Almeida, USP Technologies

**Session 03: Planning**  
**Wednesday, June 3**  
**1:30 PM - 4:45 PM**

- 1:30 PM**      **WWTP Operations Impacts Collection System**  
Kelly Loyd, Black & Veatch; Amanda Burns
- 2:00 PM**      **Actionable Flow Monitoring Platform**  
Mostafa Elag, Hazem Gheith, Arcadis
- 2:30 PM**      **A Force Main Replacement Project is Leveraged to Provide Multiple Benefits through Integrated Wet Weather Planning, City of Topeka, Kansas**  
Michael Lorenzo, Bartlett & West; Michelle Neiswender, City of Topeka Utilities; Greg Meyer, Bartlett & West
- 3:00 PM**      **Networking Break**
- 3:45 PM**      **Regional Characteristics of Design Storms in Texas and Beyond**  
Baxter Vieux, Vieux & Associates, Inc. / AE Monitoring; Ben Wostoupal
- 4:15 PM**      **Planning a \$1.8 Billion Wet Weather Management Improvement Program with Two Regional and Fourteen Locality Hydraulic Models**  
Matthias Wittenberg, CDM Smith; Phillip Hubbard, HRSD; Robert Martz, City of Virginia Beach; Charles Moore, CDM Smith
- 4:45 PM**      **Session Adjourns for Networking Reception**

**Session 04: Texas Topics I**

**Wednesday, June 3**

**1:30 PM - 4:45 PM**

**1:30 PM      Case Studies in Real-time Sewer Monitoring: Three Cities Demonstrate ROI of Data-driven Solutions, Safeguarding the Environment, Economy and Public Health**

Annette Duron, San Antonio Water System; Lloyd Juarez, City Of San Marcos; Robert Stanley, City of Arlington; Josh Grimes, SmartCover

**2:00 PM      The effect of "The internet of things " IoT on Wastewater Treatment & Operations and Utility Management**

Shannon Dunne, Vince Turner, City Of Houston

**2:30 PM      Arid Climate Wastewater Service Area Diversion vs Low Recharge Groundwater Aquifer Usage**

Steve Ainsa, AECOM; Gilbert Trejo, El Paso Water

**3:00 PM      Networking Break**

**3:45 PM      One-a-Day Sewer Basin Capacity Evaluation through an Automated Process using Esri GIS, EPA SWMM, and PowerBI – Houston’s Innovative Approach**

Fazle Rabbi, Houston Water; Pratistha Pradhan, City of Houston; Kabindra Shrestha, Gunda Corporation

**4:15 PM      When Two Become One: Design and Planning Solutions for Trunk Sewer Consolidation**

Jared Barber, Kendall Ryan, Freese and Nichols; Michelle Segovia, City of Alvin

**4:45 PM      Session Adjourns for Networking Reception**

**Alternate      Don't Be Afraid; Air Valve Maintenance on Forcemains Can and Must Be Done**

Michael Ambroziak, Construction Product Marketing; Chris MacDonald, CPM

**Alternate      Trenchless Methods - The Project That Wore Many Hats**

Kalin Ojert, Arcadis; Harrison Steed; Hugh Kim, City of Houston - Public Works



**Session 05: Inflow and Infiltration**

**Thursday, June 4**

**8:30 AM - 10:00 AM**

- 8:30 AM**      **The Seduction of Depth-only Measurement for I/I Work**  
Patrick Stevens, ADS Environmental Services; Derek Sutton, Citizens Energy Group
- 9:00 AM**      **How Much Rainwater Are You Treating? Solutions and Budgeting for Effective I&I Reduction for a TCEQ SSO Initiative from Conroe's Perspective**  
Kendall Ryan, Ishita Rahman, Freese and Nichols, Inc.; Rafael Carrasquillo, City of Conroe
- 9:30 AM**      **How Effective is RDII Mitigation Technology?**  
Qiuli Lu, Hazem Gheith, Arcadis
- 10:00 AM**      **Session Adjourns for Networking Break**

**Session 06: Modeling**  
**Thursday, June 4**  
**8:30 AM - 10:00 AM**

- 8:30 AM**      **Unique Approaches to Using Hydraulic Models to Assist System Capacity Management and Sewer Assessment and Rehabilitation for DeKalb County**  
Darren Eastall, Chunxian Li, DeKalb County; Haiyi (Helen) Lu, Jacobs; Nancy Schultz, CH2M
- 9:00 AM**      **Understanding and Mitigating Hydrogen Sulfide Impacts through Collection System Modeling**  
Kelsey Kenel, HDR; Chris Easter; Louis Engels; Coralynn Revis, HDR; Jes Vollertsen, Aalborg University
- 9:30 AM**      **Predicting Septicity and Composition of Wastewater in Dubai's Deep Sewer Tunnels**  
Ersin Kasirga, GHD; Ahamed Ifthikar, Parsons
- 10:00 AM**      **Session Adjourns for Networking Break**
- Alternate**      **Enhanced Modeling Approach to Improve Coastal City Resilience**  
Hazem Gheith, Khaled Abdo, Qiuli Lu, Arcadis

**Session 07: Operation & Maintenance**

**Thursday, June 4**

**8:30 AM - 10:00 AM**

**8:30 AM      The New 'P' in Your Collection System Maintenance Program – Predictive Cleaning**

Alexander Palmatier, Jacob Mueller, HDR; Matthew Whitman, Winston-Salem Forsyth County Utilities

**9:00 AM      Control What You Can, Accept What You Can't: How CMOM Can Reduce the Impact of SSOs**

Daniel Porter, Brown and Caldwell; Michael Erkkila; Gary Fedak, Lake County Dept. of Utilities, OH; Steve Donovan, Brown and Caldwell

**9:30 AM      Systematic PM Sewer Cleaning Program**

Harikrishnan Panthayi, Tacie McCall, City of Atlanta

**10:00 AM     Session Adjourns for Networking Break**

**Session 08: Sanitary Sewer Overflows**

**Thursday, June 4**

**10:45 AM - 11:45 AM**

- 10:45 AM**      **Optimizing Tunnel Shaft Design for Performance and Constructability: The Singapore Experience**  
Christopher Ranck, Arcadis; John Richardson; Heather Smith, Randy Lagumbay, Arcadis; Michael Schumas, Ed. Zublin AG; Ho Hong Whatt, Chua Wei Rong, Darryl Tan, Singapore PUB
- 11:15 AM**      **Getting the most out of your limited CIP dollars – Wet weather storage solution to reduce CIP spending while improving performance**  
Carlos Toro-Escobar, Brown and Caldwell; Ashley Yeh, Berkeley County Water and Sanitation; A. Retana, Brown and Caldwell
- 11:45 AM**      **Session Adjourns for Networking Luncheon**
- Alternate**      **Achieving Consent Order Compliance: Comprehensive Mini-Basin Planning and Rehabilitation to Eliminate Sanitary Sewer Overflows and Reduce Hydraulic Overloads**  
Joel Kostelac, Josiah Bair, GHD Inc.

**Session 09: Asset Management**

**Thursday, June 4**

**1:30 PM - 4:45 PM**

- 1:30 PM**      **Coachella Valley Water District: A Festival of Asset Management**  
James Reitmeier, Clinton McAdams, Black & Veatch; Bethany McDonald, HDR Inc; James Strayer, Black & Veatch; Daniel Charlton, Coachella Valley Water District
- 2:00 PM**      **Plymouth Township, MI – Developing a Comprehensive Asset Management Plan**  
Charles Card, GHD; J Muckleroy, Stearns & Wheeler; Patrick Fellrath, Charter Township of Plymouth
- 2:30 PM**      **Is there an “Easy Button” for Making Asset Management Planning Decisions? Using Operational Data to Inform System Renewal Planning Processes**  
David Saunders, Alexander Palmatier, HDR
- 3:00 PM**      **Networking Break**
- 3:45 PM**      **Integrating Performance-Based Failure Modes into a Risk-Based Asset Renewal Program for a Large Wastewater Collection System**  
Daniel Olson, Garver; Gregory Lushbaugh; Aaron Schindewolf, Christopher Meeks, San Jacinto River Authority
- 4:15 PM**      **Developing a Sewer Rehabilitation Plan Using InfoMaster - A Tiered Criticality Approach to Risk Analysis**  
Pubudu Ranasinghe, Gert Walt, Ella Garcia, DC Water
- 4:45 PM**      **Session Adjourns**
- Alternate**      **Management of a 50 Year Old Collection System to Extend the Service Life, Reduce I & I and Reduce Backups and Overflows**  
Michael Wynne, Hanover Sewerage Authority
- Alternate**      **Holistic Approach to Collection System Assessment and CIP Prioritization**  
Chris Collier, City of Cocoa; Kunal Nayee, Carollo Engineers

**Session 10: Panel Discussion on Data**

**Thursday, June 4**

**1:30 PM - 4:45 PM**

This session will consist of four 20-minute presentations before the break, followed by a panel discussion after the break.

- 1:30 PM**      **Data Management Tool Facilitates Long Term Flow Reduction Program**  
Catherine Morley, RJN Group Inc; Michael Litwin, City of Elmhurst; Jon Stelle,  
City of Elmhurst
- From Feast to Famine – Adapting Your Asset Management Plan based on  
Data Availability**  
Ellen McDonald, Reza Malek, Plummer
- Powerful Asset Data Analytics to Support Utility Decision Making**  
Celine Hyer, Christopher Heltzel, Arcadis
- Wellington Water’s Application of Artificial Intelligence for Wastewater  
Infrastructure Planning**  
Andrew Faulkner, Joel Wilson, WCS Engineering; Steve Hutchison, Wellington  
Water; Abby Jensen, Beca
- 3:00 PM**      **Networking Break**
- 3:45 PM**      **Panel Discussion**
- 4:45 PM**      **Session Adjourns**

**Session 11: Project Delivery**

**Thursday, June 4**

**1:30 PM - 4:45 PM**

- 1:30 PM**      **NCSD Watkins Pump Station, Twenty-Four Inch Emergency Force Main Repair**  
Chadwick Abrams, Nicholas Bussinah, North Charleston Sewer District
- 2:00 PM**      **Successful Procedure: Wastewater Bypass in the Heart of Dallas**  
Cullen Carlson, Erin Flanagan, Freese & Nichols Inc; Regina Stencel, Dallas Water Utilities
- 2:30 PM**      **Alternative Assessment and Project Delivery: Challenges and Opportunities with the Rehabilitation of a Multi- Jurisdictional Interceptor**  
Getachew Melsew, DC Water; Robert Bell, O'Brien & Gere Engineers; Pubudu Ranasinghe, DC Water
- 3:00 PM**      **Networking Break**
- 3:45 PM**      **Physical Modeling to Optimize Wetwell Design – Raleigh’s East Neuse Regional Pump Station**  
Frederick Stroud, Carl Frizzell, CDM Smith; Perry Allen, City of Raleigh
- 4:15 PM**      **Lessons Learned and Best Practices for Value Engineering and Contractor Engagement while Delivering Capital Projects for a \$2.4 Billion CSO Program**  
Vincent Genco, HDR; Scott Aurit; Thomas Heinemann; Adam Wilmes, Jake Hansen, City of Omaha
- 4:45 PM**      **Session Adjourns**
- Alternate**      **Managing the Risks and Untangling the Web of Interstate Versus Interceptor**  
Evan Tromble, Garver; Randall McIntyre, Malcolm Pirnie

**Session 12: Potpourri**  
**Friday, June 5**  
**8:30 AM - 11:45 AM**

- 8:30 AM**      **Anyway They Want It, That's the Way You Need It: The Journey of Persuasive Presentations**  
Heather Wootton, Krysten Marshall, Garver
- 9:00 AM**      **A Utility of the Future Today - Dale City Wastewater Collection System**  
Yanjin Liu, Ronald Cook, Suzanne Chiavari, American Water
- 9:30 AM**      **You Got the Grant, Now What? Lessons Learned for Outreach in Large Colonias**  
Irazema Rojas, Carlos Briano, Christina Montoya-Halter, El Paso Water
- 10:00 AM**      **Networking Break**
- 10:15 AM**      **Report Card Time!- Developing a Functional Grading System for Lewisville, TX Sanitary and Water Distribution System**  
Becky Rogers, RJN Group; Tarig Ahmed, City of Lewisville; Daniel Jackson, RJN Group
- 10:45 AM**      **Small Holes, But Big Wins: Onondaga County's Save the Rain's Approach to System Optimization for Reducing CSOs**  
Zachary Monge, Jacobs; Frank Mento, Adam Woodburn, Onondaga County Department of Water Environment Protection
- 11:15 AM**      **City of New Orleans Green Infrastructure from Concept to Constructability**  
Jessica Watts, CDM Smith
- 11:45 AM**      **Conference Adjourns**
- Alternate**      **Juggling Multiple Funding Sources**  
Kimberly Labree, Parkhill, Smith & Cooper, Inc.



**Session 13: Inspection & Rehab**  
**Friday, June 5**  
**8:30 AM - 11:45 AM**

- 8:30 AM**      **Filling the Void: Insight on Grouting the Annular Space in Trenchless Installations and Lessons Learned from Case Studies**  
Joshua Farmer, Kyle Drumheller, Hazen and Sawyer
- 9:00 AM**      **Data Quality Evaluation Process for Sewer Pipeline Assessment and Certification Program (PACP) Inspection Data**  
Hossein Khaleghian, Yongwei Shan, Oklahoma State University
- 9:30 AM**      **From Visual Inspection to Fact-Based Data Smart Eyes on the Collection System**  
Jay Boyd, ADS Environmental; Jesus Escalona, City of San Diego
- 10:00 AM**      **Networking Break**
- 10:15 AM**      **Large Pipe Condition Assessment – How to Maximize the Benefit from Laser, LiDAR, and Manned Entry Inspection**  
Sean O'Rourke, Hazen and Sawyer
- 10:45 AM**      **Implementing an Effective Zoom Camera Program in Support of an EPA Consent Decree**  
Jeffrey Griffiths, Derek Holderman, Hydromax USA; John Minnett; James Reid
- 11:15 AM**      **Case Study: Fast-Tracked Inspection and CIP Lining Projects in Downtown Fort Lauderdale**  
Alexandra Kelly, Hazen and Sawyer; Krishan Kandial, City of Fort Lauderdale
- 11:45 AM**      **Conference Adjourns**
- Alternate**      **Using Automated Numerical and Computing Methods to Analyze Large Volumes of Sanitary Sewer Evaluation Survey Data**  
Michael Bisignani, Tyler Pitts, GHD; Josh Shoff, AQUA
- Alternate**      **CIPP Lining Lessons Learned on a 30-inch DIP Force Main**  
Matthew Johnson, CDM Smith

**Session 14: Texas Topics II**

**Friday, June 5**

**8:30 AM - 11:45 AM**

- 8:30 AM**      **Effective Utility Management through Collaboration – Learning from Houston Water and DC Water Initiative**  
Fazle Rabbi, Houston Water; Alireza Parhami; Shannon Dunne, City of Houston; Salil Kharkar, DC Water
- 9:00 AM**      **Creative Rehabilitation Offers Cost-Effective Solution for Critical Lift Station**  
Jordon Harris, Lockwood, Andrews, & Newnam, Inc.
- 9:30 AM**      **It ain't over till it's over! Using Post Construction CCTV for EPA Compliance and Long-Term Asset Management**  
Katherine Overstreet, CP&Y; Annette Duron, San Antonio Water System; Marisa Vergara, CP&Y Inc
- 10:00 AM**      **Networking Break**
- 10:15 AM**      **Critical El Paso Force Main with High Consequence of Failure undergoes Multifaceted Condition Assessment**  
George Schaaf, Xylem
- 10:45 AM**      **Unintended Consequences of Water Conservation in Wastewater Collection Systems**  
Christopher Nance, Michael Ramirez, Parkhill, Smith & Cooper
- 11:15 AM**      **Demonstrating Real-Time Collection System Monitoring for Enhanced Source Control**  
Eva Steinle-Darling, Carollo Engineers; Nancy Nye, El Paso Water
- 11:45 AM**      **Conference Adjourns**
- Alternate**      **The Good, The Bad, and The Ugly (Of Water Conservation and Corrosion Control)**  
Fernie Silva, Brown and Caldwell
- Alternate**      **Dynamic Duo: Integrating Capacity and Risk in a Prioritized Approach to CIP Planning**  
Ethan Shires, Cullen Carlson, Freese & Nichols Inc; Melvin Machayo, Dallas Water Utilities