WEF Collection Systems Conference
2022

Technical Program
(As of February 2, 2022)

April 19 – 22, 2022
Huntington Place (formerly TCF)
Detroit, Michigan

This conference is held by the Water Environment Federation in cooperation with the Michigan Water Environment Association.
Pre-conference Workshops
(Additional fees apply)

Workshop A: Asset Management – What’s in it for Me?
Tuesday, April 19, 2022
8:30 a.m. – 5:00 p.m.

Coordinator: Christene Mitchell, AECOM
Presenters: Patrick Fellrath, Charter Township of Plymouth; Charlie Card, Walter Graf, GHD; Srini Vallebhaneni, Scott Parker, Kansas City Water; Chris Garrett, Brown & Caldwell

This workshop is being designed as a tool to help utilities who are in the early stages of an asset management program. It will be a blend of presentations, table discussions and activities, and open sharing. We will start the workshop with speakers sharing success stories, and another speaker later in the workshop will give a presentation on how to communicate asset management and its benefits. The remaining time in the workshop will be what we are calling "Learn and Engage" segments, where facilitators will share general information on the topics and then provide direction to the audience on how to further discuss these topics with members of their table and have each table do an activity based on their discussion.

Workshop B: Using Design Thinking to Uncover Insights on Collection Systems
Tuesday, April 19, 2022
1:30 p.m. - 5:00 p.m.

Coordinator: Jenn Campbell, University of Virginia

The goal of this workshop is to introduce participants to design thinking and to apply design thinking to a problem that is relevant to participants, so they are able to practice what they learn. It is an approach that is often used to develop new products and services, solve complex problems, or address uncertainty. The skills and principles learned during this workshop will help participants to better engage with customers, understand what their customers want and need, brainstorm and prototype meaningful solutions, and select and validate solutions. This workshop will combine lessons about each of the components of design thinking with hands-on activities that participants will complete on teams of 4. These activities will allow participants to practice design thinking while considering a relevant collection systems topic.
Opening General Session
Wednesday, April 20, 2022
8:30 a.m. – 10:00 a.m.

More information about the opening session is coming soon.

Technology Spotlight I
Wednesday, April 20, 2022
10:30 a.m. – 11:50 a.m.
Exhibit Hall

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. 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  4 Simultaneous Presentation A
11:00 AM  4 Simultaneous Presentation B
11:25 AM  4 Simultaneous Presentation C

Why Clean Clean Pipes? How to use Acoustic Inspection to Enable a Condition-Based Collection System Maintenance Protocol
Diane Ryu, InfoSense

The Next Generation in Manhole and Vertical Chamber Assessment Technologies
Jeffrey Griffiths, RedZone Robotics

Selecting the Proper Flow Measurement Location and Sensor for your Collection System
Darrell Kuta, Teledyne

Mitigating Risks in Collection Systems Design Using Progressive Cavity Grinder Pumps
Keith McHale, Environment One Corporation
Session 01: Data Management
Wednesday, April 20, 2022
10:45 a.m. - 11:45 a.m.

10:45 a.m.  The Right Tools for Planning: How Pearland Applied Apps, Data Analytics, and Visualization Tools to Optimize Their Collection System
Kendall Ryan, Ishita Rahman, Bailey Keller, Freese and Nichols; Jameson Appel, City of Pearland

11:15 a.m.  What Factors Should I Consider Before Performing Inspection and/or Investigations of my Sewer System?
Dianne Sumego, dms water solutions

GLWA Conner Creek CSO Tour
Wednesday, April 20, 2022
1:00 p.m. – 3:00 p.m.  
(Additional fees apply)

GLWA will provide an overview of the regional authority's east side collection system, including Freud and Conners Pump Stations as they relate to the Conner Creek Retention Treatment Basin (RTB). We will provide an overview of the Conner Creek RTB facility design and operations. For confined space areas, we will include a virtual tour to show attendants the portions of the facility that are below grade and generally not visible from the surface. For non-confined space areas we will provide an on-site tour walk through of the Conner Creek Combined Sewer Overflow Control Facility. The walk through will include the headworks/screening area, chemical feed and storage areas, as well as a trip out across the top of the basin. Areas covered by virtual tour will include viewing the headworks area from below grade, the chemical feed mixers, the basin interior and viewing the basin effluent gates from below grade.
Session 02: Sanitary Sewer Overflows  
Wednesday, April 20, 2022  
1:30 p.m. - 4:45 p.m.

1:30 p.m. Reinventing an Old Technology; Protecting Michigan’s Surface Waters Through Maximizing Collection System Storage  
Brian Rubel, Tetra Tech; Vincent Astorino, Macomb County Department; Steven Rozycki, Macomb County Public Works Commissioner; Eric Geerlings, Tetra Tech

2:00 p.m. Two Sides of the World One Surprising Collection System Truth  
Stephen Graham, Yarra Valley Water; Mark Holstad, Brandon De Flon, Albuquerque Bernalillo County Water Utility Authority; Ryan Vijay, Yarra Valley Water

2:30 p.m. Collection System Wet Weather Storage for San Antonio Water System: Innovation with Simplicity  
Arifur Rahman, George Washington University; Jennifer Baldwin, Stephen Bianchetta, Jonathan Voreheis, Court Harris, Adam Nielsen, Dan O’Leary, Jacobs

3:00 p.m. Networking Break in Exhibit Hall

3:45 p.m. Surviving an EPA SSO Consent Decree and the Lessons Learned Regarding Extending Pipeline Service Life, and Reducing or Eliminating SSOs  
Kent Carlson, National Clay Pipe Institute

4:15 p.m. NetSTORM Precipitation Frequency Statistics: A Complementary Tool to NOAA’s Atlas 14 and a Data Processing Powerhouse  
Constantine Karos, Mitchell Heineman, CDM Smith; Jason Waterbury, Metropolitan District; Duane Martin, Town of West Hartford
Session 03: Potpourri
Wednesday, April 20, 2022
1:30 p.m. - 4:45 p.m.

1:30 p.m.  Overcoming Operations and Maintenance Challenges in Siphons
Veronica Alvarez, RedZone Robotics, Inc

2:00 p.m.  Don’t Forget Manhole Rehabilitation: Significant I&I Reduction Accomplished Through Asset Management Program Methods
Alex Beck, Johnson County Wastewater; Ryan Eisele

2:30 p.m.  Extreme Event Characterization and Detection Across Climatic Zones
Baxter Vieux, Jean Vieux, Vieux & Associates Inc; Kelsey McDonough

3:00 p.m.  Networking Break in Exhibit Hall

3:45 p.m.  California’s Revised Sanitary Sewer Regulations - Ready, Set, Go
Paul Causey, Causey Consulting

4:15 p.m.  Preventing Sewer Overflows by Conducting Onsite Fats, Oils, & Grease Inspections
Sam McLeod, Fats, Oils, & Grease Best Management Plan
Session 04: Trenchless Technology  
Wednesday, April 20, 2022  
1:30 p.m. - 4:45 p.m.

1:30 p.m.  The Proper Order of Operations to Achieve the Maximum Sealing Benefit from the Trenchless Rehabilitation of a Collection System  
Larry Kiest, LMK Pipe Renewal LLC

2:00 p.m.  Curving Concrete Pipe: What a Relief  
Kevin Wojciechowski, GPD Group; Cecilia Mazzei, City of Cleveland

2:30 p.m.  Innovative Approaches & Technologies in the DWSD CIPMO Program  
Matthew McCloskey, Pei Boayue, Anil Gosine, Detroit Water and Sewerage Department

3:00 p.m.  Networking Break in Exhibit Hall

3:45 p.m.  Pilot Tube Method of Guided Boring over Soil Stabilization in the Great Lakes Basin  
Steve Matheny, Logan Clay Products

4:15 p.m.  FRP for Structural Rehabilitation of Large Diameter Sewers  
Firat Sever, Mo Ehsani, Owen Yan, QuakeWrap, Inc.
Session 05: Planning  
Thursday, April 21, 2022  
8:30 a.m. - 10:00 a.m.

8:30 a.m. Richmond’s Story of Integrated Planning, Integrated Permitting, and CSO Compliance  
Andy Lukas, Brown and Caldwell; Matthew Pugh; Patrick Bradley; Grace LeRose, City of Richmond

9:00 a.m. Implementation of Intelligent Algorithms for Prioritization of Capital Improvements in Tulsa, OK  
David Garcia, WCS Engineering; Andrew Faulkner; James Brescol; Thomas Prag

9:30 a.m. 60 Communities, 270 Square Miles — Local Sewer System Evaluation Studies Provide a Roadmap for the Northeast Ohio Regional Sewer District and Member Communities to Improve Sewer Systems  
Kevin Vander Tuig, Wade Trim Group, Inc.; Lita Laven, Northeast Ohio Regional Sewer District; Derek Wride, Wade Trim Group, Inc.

Session 06: Green Infrastructure  
Thursday, April 21, 2022  
8:30 a.m. - 10:00 a.m.

8:30 a.m. Green Infrastructure Siting Using Robust Efficient Procedure  
Khaled Abdo, Hazem Gheith, Arcadis

9:00 a.m. Outcomes not Outputs, Optimizing Green and Gray Projects to Create the Best Collection System Outcome for Atlanta  
Nicholas Anderson, Stantec; Mikita Browning, City of Atlanta Department of Watershed Management; Patrick Flynn, Stantec

9:30 a.m. Onondaga County’s Resilient Combined Sewer System: The Implementation of Green and Gray Infrastructure to Reduce CSOs and Increase System Resiliency and Capacity  
Zachary Monge, Jacobs; Shannon Harty, Onondaga County WEP; Adam Woodburn
8:30 a.m.  Bridging the Gap: Bringing Data Transparency in a Citywide Wastewater System Condition Assessment Program for I/I Mitigation
Karen Rico; David Trejo

9:00 a.m.  Successful I&I Reduction using Design-Build - Developing and Implementing the River Valley Highlands Design-Build Sewer Rehabilitation Project
James Shelton, Arcadis; Denise Crews, City of Lancaster, Ohio

9:30 a.m.  Implementing Advanced Technologies and Asset Management to Help Prioritize and Rehabilitate Critical Pressurized Pipeline Infrastructure
Mark Wade, BlueWater Solutions Group
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**Sampling for Wastewater Based Epidemiology. Selection of type of sampler and sampling methodology based on purpose and location.**

Kaushal Trivedi, Teledyne

**Killing Two Birds With One Stone - The role of magnesium hydroxide in odor control**

John Van Wingerden, Inland Environmental Resources

**Eliminating FOG and Odor in the Collection System**

Jim Dartez, Reliant Water Technologies

**How a Pump Modification Bridged a Gap Between Costly FOG/Scum Problems in Lift Stations**

Arthur Savage, Landia, Inc.
Session 08: Pump Stations and Force Mains  
Thursday, April 21, 2022  
10:45 a.m. - 11:45 a.m.

10:45 a.m.  **MSDGC’s Pleasant Run Planning Challenge**  
*Dinesh Kumar Palaniswamy, Nick Jones, MSDGC; Deborah Schafer*

11:15 a.m.  **Not So Quiet On The Western Trunk — HRSD Sets The Standard For Connecting To Concrete Pressure Pipe**  
*William Gibson, AECOM; Phillip Hubbard, HRSD; Virginia Opp, AECOM*

Session 09: Seeing Collection Systems Through A DE&I Lens  
Thursday, April 21, 2022  
10:45 a.m. - 11:45 a.m.

10:45 a.m.  **A Case Study on Water Equity: the Alabama Black Belt**  
*Anniestacia Miskel, Arcadis*

11:15 a.m.  **Applying Diversity, Equity, and Inclusion to CMOM Projects**  
*Tanya Miro, Kimley-Horn*

South Huron Valley Utility Authority Treatment Plant and Collections System Tour  
Thursday, April 21, 2022  
1:30 p.m. – 3:30 p.m.  
(Additional fees apply)

The Treatment Plant provides secondary treatment for 7 communities with a service population of approximately 90,000. The plant features cost savings and innovative upgrades including fine-air diffusers, a new class “A” sludge production facility that is the first in Michigan, a plant water system that saves on potable water usage for pump cooling, stacked tray grit removal system, and submerged final effluent weirs. The plant also features efficient LED lighting throughout and a 6.6 Million Gallon Equalization Basin. The Trenton Arm Pump Station provides 33% of the plant’s daily flow and is a focal point during high flow events, especially during the pump upgrade period and the sewer relining project. A water well was installed at the pump station to save on potable water usage at the station and provide uninterrupted, reliable service even during water main breaks.
Session 10: Research and Innovation
Thursday, April 21, 2022
1:30 p.m. - 4:45 p.m.

1:30 p.m.   Rethinking Buffalo Sewer's CSO Long Term Control Plan
            Rosaleen Nogle, Buffalo Sewer Authority

2:00 p.m.   Transforming Design Tools into Predictive Operational Tools through Artificial Intelligence and Machine Learning (AI/ML)
            Christopher Ranck; Derek Sutton, Citizen’s Energy Group; Christina Bowers

2:30 p.m.   Networking Break in Exhibit Hall

3:30 p.m.   Lessons Learned from Fan Testing in Multiple Large Diameter Sewer Systems in Austin, Texas
            Mark Perkins, Aryana Davin, Harrison Duban, Perkins Engineering Consultants; Brian Huang, V&A Engineering; Soo Soon; Thomas Van Winkle, Austin Water; Kevin Koeller, Austin Water

4:00 p.m.   Wastewater Sampling Methods for Water Based Epidemiology
            Kaushal Trivedi, Teledyne ISCO
Session 11: Modeling
Thursday, April 21, 2022
1:30 p.m. - 4:30 p.m.

1:30 p.m. Using a Digital Twin to Control Sewer Overflows - Sweden
Ann Quenzer, DHI Water and Environment

2:00 p.m. Intercepting Maine’s Largest Combined Sewer Overflow Volumes with 1-D and 3-D Dynamic Hydraulic Modeling
Kevin Trainor, Woodard & Curran; Bradley Roland, City of Portland Public Works; Jason Kreil, Woodard & Curran; Gregory Heath

2:30 p.m. Networking Break in Exhibit Hall

3:30 p.m. System Identification Using Data-Driven Approaches for Simulating Hydrological-Hydraulic Responses in Collection Systems
Caleb Buahin, Xylem, Inc.; Abhiram Mullapudi; Adam Erispaha, Xylem, Inc.; Kendra Walter; Sara Troutman; Dax Blake, EMNet Inc; Patrick Henthorn

4:00 p.m. Forensic Modeling: How Building a Detailed Model Revealed Clues to Detroit’s Sewer System
Brian Dara, Erika Campbell, Detroit Water and Sewerage Department; Sharon Tsay, Dan Rosenberg, AECOM; Andres Gomez
Session 12: Design and Construction  
Thursday, April 21, 2022 1:30 p.m. - 4:30 p.m.

1:30 p.m.  The Venice Dual Force Main: Ensuring Resiliency through Redundancy in a Historically Large Scale Microtunneling Project  
Eduardo Perez, LA Sanitation; Gevork Mkrtchyan, Los Angeles Bureau of Engineering

2:00 p.m.  Planning, Design, and Construction of the Gravois Trunk Sanitary Storage Facility in St. Louis, Missouri  
John Weiland, Wade Trim, Inc.; Curt Kimmel, Burns & McDonnell; Steven Roberts, Metropolitan St. Louis Sewer District

2:30 p.m.  Networking Break in Exhibit Hall

3:30 p.m.  Detroit River Interceptor Flow Control Facilities Construction  
Biren Saparia, Mini Panicker, Great Lakes Water Authority; Fritz Klingler, FK Engineering

4:00 p.m.  Procurement of Missouri’s Longest Tunnel Project and the Largest Clean Water SRF Project in State History  
Richard Wischmann, Everett Litton, WSP USA, Inc.; Jerry Jung, Metropolitan St. Louis Sewer District
Session 13: Combined Sewer Overflows
Friday, April 22, 2022
8:30 a.m. - 11:15 a.m.

8:30 a.m. The Great Lakes Water Authority’s Integrated Collection System Management Program: High Tech to High Touch
John Norton, Sherri Gee, Daniel Gold, Great Lakes Water Authority; Andrea Busch; Branko Kerkez; Curt Wolf, University of Michigan; Dax Blake, EMNet Inc

9:00 a.m. Innovative Solutions for Combined Sewer Overflow Control in Muncie, Indiana
Robert Page, HNTB Corporation

9:30 a.m. Omaha’s Unique Approach to Updating their CSO Long Term Control Plan
Patricia Nelson, Thomas Heinemann, Jacobs; Adam Wilmes, City of Omaha Public Works

10:00 a.m. Networking Break

10:15 a.m. Post-Construction Assessment of the North Dorchester Bay Tunnel System
Gregory Heath, Daniel Braz, AECOM; Jeremy Hall, Massachusetts Water Resources Authority

10:45 a.m. Distributed Optical Measurements Enable Smart CSO Management
Paul Dickenson, Samuel Shelley, Louise Keogh, NURON LIMITED; Simon Tait, Kirill Horoshenkov, University of Sheffield
8:30 a.m.  **Don't Give Up When Things Get Tough to Perform Your Critical Force Main Inspections**  
*Celine Hyer*, Arcadis; *Harrison Steed*

9:00 a.m.  **Phased Development and Implementation of a Force Main Condition Assessment and Management Program**  
*Vincent Genco*, HDR; *Jennifer Morales*, City of Omaha, Nebraska; *Derek Gardels*, HDR

9:30 a.m.  **Stormwater Risk Assessment in Portland, OR**  
*Arnold Engelmann*, DHI Water and Environment; *Heidi Berg*, Bureau of Environmental Services

10:00 a.m.  **Networking Break**

10:15 a.m.  **Full Scale Trial of a Low-Hazard Buffered Iron Product (SulFeLox®) to Control Hydrogen Sulfide Odors at The City of Portland, OR.**  
*Lam Nguyen*, USP Technologies; *Brenda Sherwood*; *Khalil Kairouz*, Carollo Engineers

10:45 a.m.  **Building the Data Underpinnings for Effective Collection System Asset Management**  
*Michael Mulcare*, Mott Macdonald; *Charles Sweeney*
Session 15: Local  
Friday, April 22, 2022  
8:30 a.m. - 11:15 a.m.

8:30 a.m.  
Flood Control and Water Quality: Balancing Gray and Green Infrastructure in Detroit  
Gregory Kacvinsky; Palencia Mobley, Donald Carpenter, Lisa Wallick, Detroit Water and Sewerage Department; Patrick Droze, OHM Advisors

9:00 a.m.  
Innovative Inspection of Pump Station No. 1 Wet Well  
David White, Wade Trim; Dan Alford, Great Lakes Water Authority

9:30 a.m.  
Aging Interceptor Systems: A Comprehensive Asset Management Approach to Address SSOs  
Nancy Russell, OHM; Gregory Kacvinsky

10:00 a.m.  
Networking Break

10:15 a.m.  
60 Years of Progress in CSO Control in Michigan  
Sally Duffy, Hubbell Roth and Clark Inc; Dan Beauchamp, EGLE

10:45 a.m.  
Milk River CSO Facility Modernization  
Carol Hufnagel, Tetra Tech; Roger Kaliman, Tetra Tech
Alternate Presentations
*These presentations may be called into any of the previous sessions if space arises.*

Targeted Inspections Used to Assess Force Main Condition After Failure
Vanessa McPherson, Arcadis U.S., Inc.; Bryce Annino

Off the Curve - Using Hydraulic Modeling Software to Identify Problems in Pump Stations and Force Mains
Joseph Siwek, Fishbeck; Evans Bantios

Modeling a Complex Manifolded Pump Station Sewer System with Parallel Pressure Pipes and Variable Vacuum and Pressurized Conditions
William Cassidy; Pradeep Sudini; Dickie Fernandez, Orange County Sanitation District; Duchon Alex, Arcadis; Harmik Aghanian, Carollo Engineers; Xintong Qiu

Design and Construction Consideration When Working in an Urban Environment
William Landshof, Frank Lopeman, Arcadis

Adapting to Changing Rainfall in the SEMCOG Region
Rachael Barlock, Kelly Karll, Southeast Michigan Council of Governments

Taking WaPUG to a New Practical Dimension: Introducing an Innovative H/H Model Validation Tool
Hazem Gheith, Arcadis; John Barton