



# **WEF Collection Systems Conference 2022**

**Technical Program**  
(As of January 11, 2022)

**April 19 – 22, 2022**  
**TCF Convention Center**  
**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; Sriniv Vallabhaneni, 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.*

**Mobile Session I**  
**Wednesday, April 20, 2022**  
**10:30 a.m. – 11:50 a.m.**  
**Exhibit Hall**

*More information about this Mobile Session is coming soon.*

**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.     Memphis Meets the Challenge : A 120 inch Wastewater Trunk Line Gets Emergency Slip-lining Facelift**  
Wayne Hunter, Espey Consultants, Inc.; Justin Avent, Hal Humphrey, Gresham Smith & Partners
- 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



**Session 07: Inflow and Infiltration**

**Thursday, April 21, 2022**

**8:30 a.m. - 10:00 a.m.**

- 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.     Inflow & Infiltration Identified at the Source**  
Christopher Dinsmore, EBMUD; Tracy Heidersbach

**Mobile Session II**

**Thursday, April 22, 2022**

**10:30 a.m. – 11:50 a.m.**

**Exhibit Hall**

*More information about this Mobile Session is coming soon.*

**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: Diversity, Equity, and Inclusion**  
**Thursday, April 21, 2022**  
**10:45 a.m. - 11:45 a.m.**

*More information about this session is coming soon.*

**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

**Session 14: Asset Management**  
**Friday, April 22, 2022**  
**8:30 a.m. - 11:15 a.m.**

- 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

### **Innovative Approaches & Technologies in the DWSD CIPMO Program**

Matthew McCloskey, Pei Boayue, Anil Gosine, Detroit Water and Sewerage Department

### **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

### **Implementing Advanced Technologies and Asset Management to Help Prioritize and Rehabilitate Critical Pressurized Pipeline Infrastructure**

Mark Wade, CH2M