wefevents

COLLECTION SYSTEMS AND STORMWATER CONFERENCE

CONFERENCE TECHNICAL PROGRAM

*Subject to change. Updated as of 5/12/2026

Conference: July 8-11, 2026

Pre-conference Workshops: July 8, 2026

Oregon Convention Center

Portland, OR

https://www.wef.org/events--education/conferences/collectionsstormwater2026/

PRE-CONFERENCE WORKSHOPS

W01 Green Stormwater Infrastructure: From Programming to Performance

Wednesday, July 8th, 2026 8:30 AM – 12:00 PM

Room 252

*Registration | $119

Green stormwater infrastructure (GSI) succeeds, or stalls, based on decisions made long before a shovel hits the ground, and long after construction finishes. This workshop aims to cover topics from the full spectrum of the GSI lifecycle, moving from programming and planning in the morning, to design and construction considerations in the afternoon, with perspectives from MS4 program owners, engineers and designers, academic researchers, and regulators. Interactive segments will give attendees a chance to apply concepts within a Pacific Northwest watershed and leave with post-workshop proceedings capturing what was discussed. Whether you own a GSI program, design the infrastructure, build them, or regulate them, the audience will leave with a shaper view of how each piece fits together.

Workshop Chair Alex Miller, *HDR Inc.*

Workshop Vice Chair(s) Colette Easter, *Louisville & Jefferson County MSD*

W02 Smart Sewers Strategies for Utilities of All Sizes

Wednesday, July 8th, 2026 1:30 - 5:00PM

Room 253

*Registration | $119

Utilities and municipalities need to make value-based decisions that protect human health and the environment. When applied 'smartly', smart sewer approaches can deliver lower costs, improve system efficiency, reduce overflows, and enhance flood management. As an emerging strategy, however, there is a lack of industry-wide guidance to help utilities implement smart sewer approaches in their systems, especially as more applications of artificial intelligence and machine learning techniques emerge.

Workshop Chair Eric Harold, *Carollo*

Workshop Facilitator(s): Carol Hufnagel, *Tetra Tech*; Harry Zhang, *The Water Research Foundation*; Eric Packer, *HDR*

1:30 PM	Introduction to Smart Sewers and Workshop Objectives
1:45 PM	Interactive Polling and Discussion
2:00 PM	Case Study Presentation #1
2:30 PM	Interactive Polling and Discussion

3:00 PM Networking Break
3:30 PM Case Study Presentation #2
4:00 PM Case Study Presentation #3
4:30 PM Interactive Polling, Discussion, and Workshop Summary

W03 Optimizing Pump Stations & Force Mains: What Every Operator Needs to Know
Wednesday, July 8th, 2026 8:30 AM - 5:00PM
Room 254
*Registration | $219
This operator-focused workshop provides practical, field-ready guidance for managing wastewater pump stations and force mains safely, reliably, and efficiently. The workshop will offer insight into pump selection, operation and maintenance; effective force main design and alignment; and capturing and leveraging operational data to drive smarter lifecycle decisions. Participants will leave with practical strategies to minimize emergencies, extend asset life, improve reliability, and enhance day-to-day system performance.

Learning Objectives
• Interpret and apply pump curves to evaluate real-world pump performance.
• Operate pump stations for maximum energy efficiency while maintaining reliability.
• Recognize and mitigate common force main risks, including blockages, surging, corrosion, odor, and hydraulic losses.
• Leverage SCADA and operational data to diagnose issues and optimize performance.
• Understand how AI and analytics tools can support operator decision-making.

Workshop Chair: Mandy LeBlanc, *Carollo*

8:30 AM Pump Curves/Hydraulics 101
9:15 AM Pump Operation and Maintenance 101
10:00 AM Networking Break
10:30 AM AI & Pump Stations
11:15 AM Activity: Calculate Energy Usage for VFD vs Constant Speed
12:00 PM Lunch Break
1:30 PM Force Main Friction Losses/Velocity 101
2:15 PM Force Main Operation and Maintenance 101
3:00 PM Networking Break
3:30 PM AI & Force Mains
4:15 PM Activity: Calculate Pressure Along a Force Main

FACILITY TOURS

Carli Creek Water Quality Facility Tour

Thursday, July 9th, 2026 8:30 AM – 12:00 PM

*Registration | $60

The Carli Creek Enhancement Water Quality Facility is a regional, integrated habitat enhancement and stormwater treatment project on a 15-acre parcel of land adjacent to the lower reach of Carli Creek. Carli Creek is a tributary of the Clackamas River located south of the unincorporated community of Clackamas, Oregon. The river provides drinking water for approximately 360,000 people. The design features a new diversion pipeline to route untreated stormwater that previously discharged to Carli Creek to the project site; a series of step pools to dissipate energy; and a treatment facility that incorporates a vegetated detention cell and constructed wetland cells.

This facility treats stormwater through a combination of settling, filtration, and infiltration. The design also includes instream habitat improvements, a backwater wetland channel, and native planting and habitat structures throughout the site. Situated along the Clackamas River, wildlife in the area uses the site, including deer, coyote, birds, and threatened & endangered species of salmon and trout.
Participants on this tour will see the completed project, learn about the construction process, learn about the maintenance challenges we've faced, see signs of wildlife and view impacts of an unusually large flood event in December 2025.

Swan Island CSO Pump Station

Thursday, July 9th, 2026 1:30 – 5:00PM

*Registration | $60

PPE Requirements: Hard hats, high viz vests, and 'appropriate' closed toe shoes. Steel toe boots are not required.

City of Portland operates the 220-mgd Swan Island CSO Pump Station (SICSO) as part of the combined sewer overflow (CSO) program to manage CSO flows to the Columbia Boulevard Wastewater Treatment Plant (CBWTP). The SICSO serves as the terminus of two large CSO conveyance and storage tunnels deep beneath the City of Portland (in excess of 120 feet underground), designed to collect and store over 100 million gallons of combined sewage. The pump station consists of a 135-foot diameter circular cast-in-place, 150-foot deep below grade concrete structure, located adjacent to the Willamette River. This on-site tour will give you an (almost) hands on experience within Oregon's largest pump station.

TECHNICAL SESSIONS

Session 01: Designing for Storms That Haven't Happened Yet

Thursday, July 9th, 2026 10:30 AM - 12:00 PM

Room 252

Preparing for extreme events through advanced modeling and asset repurposing is the theme. Presentations cover using real historical storms (via NEXRAD data) for model validation and design, repurposing retired assets like the Port Gardner Storage Facility for wet-weather storage and CSO reduction, and decade-long modeling lessons from Joliet that inform capital decisions. Attendees will learn practical approaches to designing for non-stationary conditions.

10:30 AM **Existing Condition Verification and Design Impact Analysis**
John Pinckney, *Carollo Engineers, Inc.*
CoAuthor(s): Eric Harold, *Carollo Engineers*

11:00 AM **Maximizing Wet Weather Storage and Resilience Through Infrastructure Reuse: The Port Gardner Storage Facility**
Casey Gish, *Brown and Caldwell*
CoAuthor(s): Alexander Mockos

11:30 AM **Hindsight at 95%: Lessons from a Decade of Modeling in Joliet, IL**
David Edgren, *RJN Group*

Session 02: From Paper to Pavement - Making It Happen

Thursday, July 9th, 2026 10:30 AM - 12:00 PM

Room 253

Implementation successes in collection and stormwater infrastructure are shared. Topics include replacing an interceptor through a Colorado ski town with creative community coordination, thermal curing of CIPP with guidance on interpreting monitoring data, and large-scale storm sewer upgrades in Alexandria, Virginia using double box culverts and enhanced inlets. Attendees gain practical construction and delivery lessons.

10:30 AM **It's All Downhill From Here: Replacing an Interceptor Through a Colorado Ski Town**
Alexander Pooley, *HDR*

11:00 AM **Thermal Curing of CIPP: Required Construction Submittals, How to Interpret Data, and When to Raise a Flag**
Cindy Preuss, *CDM Smith*

11:30 AM **Four Mile Run Storm Sewer Upgrades - City of Alexandria, VA**

Michael DeVuono, *Arcadis U.S., Inc.*; Alexander Carlson, *Arcadis U.S., Inc*

Session 03: Maximizing Value - Asset Management Strategies for CS

Thursday, July 9th, 2026 10:30 AM - 12:00 PM

Room 254

This session demonstrates high-impact asset management strategies for combined sewer systems that deliver measurable resilience and compliance benefits. Case studies include data-driven modernization of large-scale CSO facilities with gate monitoring enhancements, Oregon City's targeted approach to private-side laterals for I/I reduction, and emergency interceptor repairs within federally regulated levees. Practical lessons in risk management, staging, and real-time situational awareness are shared.

10:30 AM **Modernizing Large-Scale CSO Facilities for Resilience and Compliance: A Data Driven Reliability Case Study of GLWA's Hubbell Southfield RTB.**
Shadrack Ampomah, *Great Lakes Water Authority (GLWA)*
CoAuthor(s): Kashmira Patel, *Great Lakes Water Authority (GLWA)*; Shadrack Ampomah, *Great Lakes Water Authority (GLWA)*; Rainesha Williams-Fox, *Great Lakes Water Authority (GLWA)*; Kashmira Patel, *Great Lakes Water Authority (GLWA)*

11:00 AM **Optimizing the Benefits of I/I Reduction: Oregon City's Approach to Private Side Laterals**
Dave Brokaw, *Wallis Engineering*

11:30 AM **Emergency Interceptor Repair Within a Levee**
Sean Bell, *HDR Inc*

Session 04: Clearing the Air - Odor in Collection Systems

Thursday, July 9th, 2026 10:30 AM - 12:00 PM

Room 255

This foundational session provides a comprehensive overview of odor generation, emissions, and community impacts in wastewater collection systems. Attendees will learn to identify key odor constituents (including sulfides and non-Hâ„S compounds), understand sulfide generation and corrosion mechanisms, analyze airflow dynamics in sewers, and recognize how odor perception influences control system design. Effective public outreach and complaint response strategies are also emphasized.

Lead Facilitator Inken Mello, *Black & Veatch Corporation (HQ)*

Assistant Facilitator(s) Diederik Apgar; Jonathan Gordon, *Parametrix*

10:30 AM **Conveyance System Sulfide Generation**

10:55 AM **Modeling Odor Impacts from Wastewater Conveyance Systems**

11:20 AM **Odors, Air Pollutants & Public Outreach**

11:45 AM **Interactive session: How to Respond and Communicate With The Public**

Session 05: Digitizing the Utility - The Future of Operations

Thursday, July 9th, 2026 1:30 - 3:00 PM

Room 252

This session showcases digital tools that are modernizing utility operations and asset management. Presentations cover Pittsburgh's evolution of small-diameter sewer rehabilitation through digital prioritization and risk assessment, reusable PLC function block libraries that reduce commissioning time and operator training, and innovative methods for identifying and quantifying inflow and infiltration. Attendees will discover how digitization drives capital savings, automation consistency, and overall system performance.

1:30 PM **Evolution of the Pittsburgh Water Small Diameter Sewer Rehabilitation Program through Digital Tools, Prioritization and Risk Assessment**
Mallory Griffin, *GHD Inc*
CoAuthor(s): Duygu Altintas, *Carnegie Mellon University Library*; Mallory Griffin, *GHD Inc*

2:00 PM **Reusable PLC Function Block Libraries: Reducing Commissioning Time and Operator Training Across Multi-Facility Water and Wastewater Operations**
Nirmal Kumar Balaraman, *Inframark LLC*

2:30 PM **Tracking Down the Ever-present Yet Elusive Inflow and Infiltration In Your Collection System**
George Elaro, *Badger Meter*
CoAuthor(s): Mark Robertson, *Emerald Coast Utilities Authority*

Session 06: Stormwater Planning in Action - Case Studies & Lessons Learned

Thursday, July 9th, 2026 1:30 - 3:00 PM

Room 253

Real-world stormwater planning case studies illustrate innovative, multi-objective solutions. Topics include adapting subsurface gravel wetland technologies for emerging contaminants and baseflow treatment, neighborhood-scale cloudburst management using gray-green infrastructure in NYC, and multi-benefit regional facilities that restore historic drainage patterns while managing risk. Attendees will gain transferable implementation insights.

EvModerator Rachel Jones, *Gwinnett County*

1:30 PM **Expanding The Stormwater Park Design Toolkit: Adapting Wastewater Treatment Wetland Technologies to Address Baseflow, Nutrients, and Emerging Contaminants and Provide Community Benefits**
Amy Carlson, *Jacobs*
CoAuthor(s): Dustin Atchison, *Jacobs Engineering*

2:00 PM **Designing for Cloudbursts: Neighborhood-Scale Solutions for Flooding in Brownsville, NYC**
Tony Li, *New York City Department of Environmental Protection*
CoAuthor(s): Roopesh Joshi, *NYCDEP*; David Stahl, *AKRF INC/AKRF Engineering PC*; Patrick Parault, *AKRF*; Elizabeth Hibbert, *New York City Department of Environmental Protection*

2:30 PM **Restoring Historic Drainage Patterns and Managing Risk with Multi-Objective Regional Stormwater Facilities**
Thomas Suesser, *Brown and Caldwell*
CoAuthor(s) Kaitlin Vacca

Session 07: Close Enough? Getting the Models to Behave

Thursday, July 9th, 2026 1:30 - 3:00 PM
Room 254
Model calibration, validation, and performance quantification are critically examined. Presentations cover a causal inference framework for measuring sewer rehabilitation impacts on dry-weather flow, machine-learning evolutionary algorithms for wet-weather calibration, and lessons from calibrating complex 800+ lift-station collection system models. Attendees will leave with implementable strategies for more accurate and defensible modeling.

1:30 PM **Quantifying the Effect of Sewer Rehabilitation on Dry Weather Flow: A Causal Inference Framework**
Corinne Wiesner-Friedman, *Jacobs Engineering*
CoAuthor(s): Andrew Potts, *Jacobs*; Leah Rominger, *CH2M*; Perrin Niemann

2:00 PM **Survival of the Fittest: Optimizing Wet Weather Calibration using a Machine Learning Evolutionary Algorithm**
Patrick Flynn, *Stantec Consulting Inc*
CoAuthor(s): Jeremy Salerno, *Stantec*

2:30 PM **An Olympic Approach to Calibrating Complex 800+ Lift Station Collection System Models**

Kristiana Dragash, *Carollo Engineers*
CoAuthor(s): Angelica Gregory, *Carollo Engineers*; Kirsten Burns, *Carollo Engineers*; Kevin Nguyen, *Carollo Engineers*; Karen Liang, *Carollo Engineers*

Session 08: Because the Rules Say So

Thursday, July 9th, 2026 1:30 - 3:00 PM
Room 255
Regulatory compliance and permitting challenges for wet-weather infrastructure are addressed. Topics include integrated planning at Portland International Airport to meet dual stormwater permits, using recent Supreme Court reasoning to resolve long-standing Clean Water Act issues, and interim inline storage solutions for consent decree compliance in small systems. Practical, forward-looking strategies for navigating evolving regulations are provided.

1:30 PM **Meeting Dual Permit Requirements through Integrated Planning and Regional Water Quality Management at the Portland International Airport**
Yang Li, *Geosyntec Consultants*
CoAuthor(s): Marc Leisenring

2:00 PM **Supreme Court Fixed End Result Limits, Can That Decision Help Fix These Other Wet Weather Issues?**
Patrick Bradley, *Michael Baker International*
CoAuthor(s): Meredith Brock, ; Patrick Bradley

2:30 PM **Regulatory Rescue: Interim Storage Solutions for Consent Decree Compliance**
Alia Johnson, *DeKalb County Government*
CoAuthor(s): Sydney Criminski, *AtkinsRÃ©alis*

Session 09: Measuring What Matters - GI Performance & Outcomes

Thursday, July 9th, 2026 3:30 - 5:00 PM
Room 252
This session focuses on the latest national requirements and trends in green stormwater infrastructure (GSI) performance monitoring. Topics include advancing monitoring and sampling programs, digital technologies that improve efficiency, and the role of annual quantified metrics and retrofit requirements in future MS4 compliance. Attendees will gain practical guidance for tracking outcomes and demonstrating GSI value.

LeadFacilitator Mark Van Auken, *Arcadis*

Speaker(s): Richard Haimann, *Sustura, Inc.*; Colette Easter, *Louisville & Jefferson County MSD*; Fernando Pasquel, *Arcadis U.S., Inc.*

3:30 PM **Introductions**
3:35 PM **Case Studies**
4:00 PM **Breakout Sessions**
4:40 PM **Summary/Panel Q&A Discussion**

Session 10: I Got 99 Problems and the Data is Most of Them (FM Data to Algos)

Thursday, July 9th, 2026 3:30 - 5:00 PM
Room 253

This hands-on interactive session explores the real-world journey of turning raw flow monitoring data into powerful machine learning applications for collection systems. Participants will tackle practical questions around data quality, processing, feature selection, model development, and implementation challenges commonly faced by utilities. Through guided exercises and collaborative problem-solving, attendees will gain actionable skills and confidence in applying data science techniques to extract meaningful insights and drive smarter operational decisions.

Session 11: Managing Stormwater Systems for Resilient Communities

Thursday, July 9th, 2026 3:30 - 5:00 PM
Room 254

Integrated, multi-benefit approaches to stormwater asset management are highlighted. Presentations introduce watershed-lens frameworks linking hydrology, hydraulics, and structural fragility for flood risk prioritization; placemaking as a tool to align asset and community needs; and comprehensive softscape condition assessment programs for green stormwater infrastructure. Practical examples show how to deliver resilience while enhancing community value.

3:30 PM **Protecting Infrastructure through a Watershed Lens: A Scalable Framework for Prioritizing System-wide Flood Risk and Resilience Investments by Linking Watershed Processes, Hydraulic Loading, and Structural Fragility**
Thomas Walsh, *Jacobs*
CoAuthor(s): Ayush Bhandari, *Jacobs*; Alan O'Connor, *AJOC Consulting Engineers*; Aimee Flannery, *Jacobs*

4:00 PM **Bridging Asset Needs and Community Needs: Placemaking as a Tool for Equitable Stormwater Asset Management**
Xiating Chen, *HDR Inc.*
CoAuthor(s): Matthew Anderson, *King County Department of Natural Resources and Parks*; Steve Hitch, *HDR, Inc*

4:30 PM **Developing and Implementing a Green Stormwater Infrastructure Softscape Condition Assessment Program with Seattle Public Utilities**
Jason Bernagros, *Jacobs*
CoAuthor(s): Drena Donofrio, *Seattle Public Utilities*; Robin Kirschbaum, *Robin Kirschbaum Inc*

Session 12: Watershed Approaches for Integrated Solutions

7/9/2026 3:30:00 PM - 5:00:00 PM
Room 255
Holistic watershed-scale solutions for climate-ready communities are explored. Presentations showcase collaborative digital tools and partnerships in Honolulu, data-driven prioritization frameworks integrating pollutant loading, climate projections, and equity in Puget Sound, and lessons from scaling green infrastructure retrofits in NYC urban parks. Emphasis is placed on partnerships, data infrastructure, and multi-benefit outcomes.

3:30 PM **Collaborative Innovation for Climate-Ready Communities**
Lauren Roth Venu, *Roth Ecological Design International*
CoAuthor(s): Erin Rothman, *StormSensor Inc.*; Doug Harper, *Malama Maunalua*; Juli Beth Hinds, *University of California San Diego*; Randall Wakumoto, *City and County of Honolulu Department of Facility and Maintenance*

4:00 PM **From Heatmaps to High-Impact Retrofits: A Data-Driven Framework for Climate-Resilient Green Stormwater Infrastructure in Puget Sound**
Nikki Redden, *Parametrix*
CoAuthor(s): John Phillips, *Parametrix*

4:30 PM **Scaling Green Infrastructure in Urban Parks: A Decade of Refining the Science of Stormwater Retrofits in NYC**
Jenny Sunday, *NYC Parks*
CoAuthor(s): M.Larson, *NYC Parks & Recreation*

Session 13: Green Infrastructure & Sewer Separation - Integrated Approaches

Friday, July 10th, 2026 8:30 - 10:00 AM
Room 252

Integrated green infrastructure and sewer separation projects that deliver multiple benefits are examined. Presentations cover NYC DEP's precast porous concrete panel installations, regional stormwater treatment and sewer separation in Everett leveraging grant funding, and creative solutions for managing wet-weather flows in separated but interconnected systems. Attendees will learn how to combine gray and green solutions for flood reduction, CSO control, and community resilience.

8:30 AM **NYC DEP Right of Way Green Infrastructure: Implementing Precast Porous Concrete Panels in the Gravesend Bay Neighborhood of Brooklyn, NY.**
Graciela Miguel, *NYC DEP*

9:00 AM **Regional Stormwater Treatment and Sewer Separation for Wet Weather Resilience**
Steve Hitch, *HDR, Inc.*
CoAuthor(s): Erik Emerson, *City of Everett*

9:30 AM **When Your Separated Sanitary System Includes Multiple Stormwater Connections**
Ian Besaw, *City of Portland Bureau of Environmental Service*
CoAuthor(s): Ruben Gonzalez, *City of Portland Bureau of Environmental Services*

Session 14: All Models Are Wrongâ€¦ Some Are Useful

Friday, July 10th, 2026 8:30 - 10:00 AM
Room 253
This session examines how improved modeling practices and risk frameworks lead to better rehabilitation and planning decisions. Presentations cover rethinking consequence-of-failure Ã— likelihood-of-failure for sewer prioritization, an area-weighted geometric mean approach to I/I screening, and the hidden hydrology of lost streams shaping modern stormwater challenges. Practical lessons help utilities make more defensible decisions.

8:30 AM **New Castle County's Evaluation of Risk: Rethinking COF Ã— LOF for Better Rehabilitation Decisions**
Courtney Kennedy, *Jacobs Engineering*
CoAuthor(s): Eric Laramore

9:00 AM **Rethinking R-Value Thresholds: An Area-Weighted Geometric Mean Framework for Sewer I&I Screening**
Hazem Gheith, *Arcadis, U.S., Inc.*
CoAuthor(s): Qiuli Lu; Amrit Bhusal, *Arcadis U.S., Inc*

9:30 AM **Hidden Hydrology: How Lost Streams Shape Stormwater Challenges**
McCallah Cooper, *AECOM Technical Services, Inc.*
CoAuthor(s): Tanner Adair, *AECOM*

Session 15: Battling Corrosion & Odor - Challenges and Innovations

Friday, July 10th, 2026 8:30 - 10:00 AM
Room 254
This session presents data-driven innovations that shift corrosion and odor management from reactive troubleshooting to proactive, strategic asset protection. Topics include advanced sewer process modeling for cost-effective operations, real-time low-cost electrochemical sensor networks for detecting indoor sewer-gas intrusion, and strategies for managing corrosive gases to safeguard infrastructure while reducing community complaints. Attendees will understand how to achieve significant operational efficiencies and improved outcomes.

8:30 AM **Transforming Corrosion and Odor Management Through Dataâ€'Driven Sewer Process Modeling**
Bart Kraakman, *Jacobs*
CoAuthor(s): John Siczka, *Jacobs*; Scott Cowden, *Jacobs Engineering Headquarters Office*; Adrian Romero, *Jacobs Solutions Inc;* William Desing

9:00 AM **Real-Time Monitoring of Indoor Sewer-Gas Intrusion Using Low-Cost Electrochemical Sensor Networks and Data Analytics**
Zhe Wang, *Oakland University*

9:30 AM **Managing Corrosive Gases to Reduce Odors: Protecting Wastewater Infrastructure While Improving Community Outcomes**
Sean Cornelious, *Purafil*

Session 16: Planning for Tomorrow - Innovations in Stormwater Strategy

Friday, July 10th, 2026 8:30 - 10:00 AM
Room 255
Forward-looking stormwater planning innovations take the spotlight. Case studies include multi-design-storm optimization to mitigate unprecedented flooding in Dearborn, interactive digital master plans that integrate modeling and community feedback, and unified people-parks-stormwater solutions that deliver multiple community benefits. Attendees will learn cutting-edge optimization, engagement, and resilience strategies.

8:30 AM **Multiple Design Storm Capital Works Optimization to Mitigate Unprecedented Flooding in Dearborn, Michigan (USA)**
Lucas Djehdian, *WCS Engineering*
CoAuthor(s): Joel Wilson; Scott Aurit, *HDR*; Julia Matton, *WCS Engineering*; Valerie Novaes, *OHM Advisors*

9:00 AM **Mastering the Storms: Interactive Approaches to Planning for Future Stormwater Improvements**
Alysondria Eason, *Hazen and Sawyer*
CoAuthor(s): Matthew Zelin, *Hazen and Sawyer*

9:30 AM **People, Parks, and Stormwater: Unified Solutions for Better Cities**
John Megrditchian, *HDR INC*
CoAuthor(s): Ryan Healan, *HDR*

Session 17: Robot Knows Best - AI Takes Over Your System (In a Good Way)

Friday, July 10th, 2026 10:30 AM - 12:00 PM
Room 252

This session explores how artificial intelligence is transforming water and wastewater system operations through practical, data-driven applications. Presentations demonstrate high-resolution pressure monitoring combined with machine learning to uncover hidden asset performance issues, the use of historical data for prioritizing gravity sewer inspections without new capital investments, and AI-enabled forecasting integrated with radar, sensors, and hydraulic modeling for urban flood resilience. Attendees will gain actionable insights into implementing AI solutions that improve reliability, efficiency, and decision-making across collection and stormwater systems.

10:30 AM **Seeing the Invisible: High-Resolution Pressure Monitoring for Improved Force Main Operations**
Nicole Kaiser, *Badger Meter*
CoAuthor(s): Dale Lough, *Clark Regional Wastewater District*

11:00 AM **From Intuition to Insight: Using Machine Learning to Prioritize Gravity Sewer Inspections**
Aman Kaushik, *Carollo Engineers, Inc.*

11:30 AM **Closing the Loop: AI-Enabled Forecasting, Modeling, and Operations for Urban Flood Resilience**
Corinne Wiesner-Friedman, *Jacobs Engineering*
CoAuthor(s): Elise Ibendahl, *Jacobs*; Paul Robinson, ; Tung Nguyen, *Jacobs*; Monica Stochl, *Jacobs Engineering Headquarters Office*

Session 18: Adapting to Extremes - Climate Resilience in Water Systems

Friday, July 10th, 2026 10:30 AM - 12:00 PM

Room 253

This session equips utilities with proven methods for incorporating future climate projections into infrastructure modeling and design. Presenters share Seattle's approaches to integrating climate-informed precipitation into collection and stormwater models, Columbia River risk modeling that accounts for sea-level rise, river stage changes, and hydrologic shifts, and WUCA's climate-informed design guidance used by Portland and other utilities. Attendees will leave with practical strategies to move beyond historical hydrology and build truly resilient systems.

10:30 AM **Incorporating Future Climate Projections in Municipal Stormwater and Collection System Modeling and Planning**
Tyler Jantzen, *Jacobs*
CoAuthor Sierra Gawlowski, *Seattle Public Utilities*; Neil Schaner, *Herrera*

11:00 AM **Climate-Informed Risk Modeling for the Columbia River: Integrating Sea-Level Rise, River Stage, and Hydrologic Change into Resilient Watershed and Infrastructure Planning**
John Phillips, *Parametrix*

11:30 AM **Designing for Tomorrow: Climate-Informed Design Guidance with WUCA**
Matthew Matasci, *Brown and Caldwell*
CoAuthor Nishant Parulekar, *City of Portland Bureau of Environmental Service*; Matthew Matasci, *Brown and Caldwell*; Nishant Parulekar, *City of Portland Bureau of Environmental Service*; , ; ,

Session 19: Next-Gen Tools for Collection System Management

Friday, July 10th, 2026 10:30 AM - 12:00 PM

Room 254

Explore emerging technologies that are redefining how utilities monitor, inspect, and manage collection systems. Sessions highlight real-time condition assessment with free-floating devices, prioritized meter maintenance programs that keep hydraulic models current, and emerging practices for smart sewer systems including IT integration and sensor technology guidance. These next-generation tools deliver more efficient inspections, better data utilization, and improved system intelligence.

Moderator Ashley Smart, *RJN Group, Inc.*

10:30 AM **Advancing Collection System Performance with Realâ€'Time Condition Assessment Data**
Kevin Shipp, *SUEZ*
CoAuthor(s): Charles Kruse, *SUEZ*

11:00 AM **Data in Motion: Keeping Model Updates Flowing with a Prioritized Meter Maintenance Program**
Stephanie Segler, *Black & Veatch*
CoAuthor(s): Eric Spooner, *Black & Veatch*

11:30 AM **Advancing Smart Sewer Systems: Emerging Practices and Technologies**
Eric Harold, *Carollo Engineers*
CoAuthor(s): Luis Montestruque, *HydroDigital, LLC*; Harry Zhang, *The Water Research Foundation*

Session 20: From Plan to Practice - Operational Excellence in CS

Friday, July 10th, 2026 10:30 AM - 12:00 PM
Room 255
This session bridges master planning with real-world operational excellence in collection systems. Topics include integrating operational flexibility through optimization, dynamic master planning with life-cycle cost approaches, and evaluating pump station capacity using available gravity storage in manifolded force main systems. Practical frameworks help utilities enhance capacity planning, adaptability, and day-to-day performance.

EvModerator David Garcia, *WCS Engineering*

10:30 AM **Embracing the Unknown: Integrating Operational Flexibility in Collections System Master Planning**
Alexandra Webb, *Suez SES North America*
CoAuthor(s): Austin Le, *Wade Trim*; Ari Feldman, *Suez SES North America*; Derek Wride, *Wade Trim*

11:00 AM **Multi-Objective Optimization for Comprehensive Analysis of Current and Future Conditions to Generate an Adaptive Master Plan for the City of Salem, Oregon (USA)**
Julia Matton, *WCS Engineering*
CoAuthor(s): Keith Garlinghouse, *City of Salem*; Eric Harold, *Carollo Engineers*; Keith Garlinghouse, *City of Salem*; Joel Wilson

11:30 AM **Dynamic Pump Station Capacity Evaluation Using Available Gravity Storage Achieves Improved Operations and Capacity Planning**

Sarah Ozenkoski, *CDM Smith*
CoAuthor(s): Rey De Vera; David She, *City of Virginia Beach Department of Public Utilities*

Session 21: Integrated Planning - Aligning Systems, Goals, and Investments

Friday, July 10th, 2026 1:30 PM - 2:30 PM
Room 253
Integrated planning strategies that align wastewater, stormwater, and regulatory goals are featured. Sessions discuss long-term adaptive delivery from a UK perspective with best-value appraisal and customer-weighted criteria, and practical lessons from integrated planning implementations across the U.S. Attendees will understand how to focus resources for efficient environmental results while addressing affordability and deliverability.

1:30 PM **Integrated Planning and Adaptive Delivery for Urban Collection System Wet Weather Performance. Lessons from a UK Longâ€'Term Strategy**
Pougajendy Tayoumanavane, *Geosyntec Consultants*

2:00 PM **Integrated Planning from West Coast to East Coast to WEF's Newly Released Roadmap**
Patrick Bradley, *Michael Baker International*
CoAuthor(s): Meredith Brock

Session 22: Your System's Twin (But Smarter and Better Looking)

Friday, July 10th, 2026 1:30 PM - 3:00 PM
Room 254
Discover how digital twins and real-time intelligent systems are elevating stormwater and sewer management to new levels of performance. Sessions cover lessons from a decade of continuous monitoring and adaptive controls in Oregon stormwater facilities, the Kansas City Smart Sewer Digital Twin that unifies disparate sensor data into reliable intelligence, and machine learning frameworks for optimal, risk-based sensor placement in wastewater collection systems. These examples highlight how smart technologies overcome data fragmentation, system topology constraints, and budget limitations to support proactive operations and long-term planning.

1:30 PM **Real Time Controls of Stormwater Facilities in Oregon: Lessons Learned from 10 years of Operation**
Laney Nelson, *Opti*

CoAuthor(s): Aaron Poresky, *Geosyntec*; Matthew Brennan, *Clean Water Services*; Abbey Rhode, *Clean Water Services*; Mike Chapman, *Clean Water Services*

2:00 PM **Turning Disparate Sensor Data into Actionable Sewer System Intelligence: Lessons from Kansas City Smart Sewer Digital Twin**
Farshid Shoushtarian, *HydroDigital*
CoAuthor(s): Andy Shively, *Kansas City Water*; Timothy Ruggaber, *HydroDigital, LLC*; Luis Montestruque, *HydroDigital, LLC*; William Raseman, *HydroDigital LLC*

2:30 PM **A Machine Learning-Driven Framework for Risk-Based Sensor Placement in Wastewater Collection Systems**
Marjan Moradi, *University of Texas at Arlington*
CoAuthor(s): Mo Najafi

Session 23: Optimizing the Network - Smarter Planning Approaches

Friday, July 10th, 2026 1:30 PM - 2:30 PM
Room 255
Advanced optimization and modeling techniques take center stage for smarter collection system master planning. Presentations detail multi-objective optimization used by WSSC to evaluate thousands of strategies under varying scenarios, and automated hindcasting that turns every storm into continuous model validation and insights. Attendees will learn how these tools produce cost-effective, adaptable, and resilient long-term plans.

Moderator David Garcia, *WCS Engineering*

1:30 PM **Dynamic Master Planning Using Optimization and a Life-cycle Cost Approach for a Resilient Collection System**
Julia Matton, *WCS Engineering*
CoAuthor(s): Thomas Hilton, *Washington Sanitary Subruban Commission*; Ari Feldman, *Suez SES North America*; Alexandra Webb, *Suez SES North America*; Lucas Djehdian, *WCS Engineering*

2:00 PM **Learning from Every Storm: Automated Hindcasting for Continuous Collection System Insights**
Anjulie Cheema, *Confluency*
CoAuthor(s): Mason Throneburg, *Confluency*; Matthew Van Doren, *Metropolitan Sewer District of Greater Cincinnati*

Session 24: Finding the Flow - Identifying and Reducing I/I

Friday, July 10th, 2026 3:30 - 5:00 PM
Room 252
This session uncovers the subsurface science and data-driven strategies behind effective inflow and infiltration management. Presentations examine subsurface flow dynamics in sewer trenches and soil interactions, long-term flow data analysis for basin prioritization, and GIS/image-processing frameworks that identify high-RDII basins using basin configuration predictors. Utilities will learn how to target rehabilitation dollars for maximum impact.

3:30 PM **Digging Deeper: Uncovering the Subsurface Dynamics of Inflow and Infiltration**
David Edgren, *RJN Group*
CoAuthor(s): Bwalya Malama, *California Polytechnic State University*; George Clark, *WSSC Water*

4:00 PM **Not All I/I Is Equal: Using Data to Focus Where It Counts**
Tina Whitfield, *HDR*
CoAuthor(s): Adam Sharpe, *HDR Inc*

4:30 PM **Ingredients of High I&I Conditions**
Aly Salem, *Arcadis*
CoAuthor(s): Khaled Abdo; Hazem Gheith, *Arcadis*

Session 25: Keeping the Green Infrastructure Green (Good Luck…!)

Friday, July 10th, 2026 3:30 - 5:00 PM
Room 253

Session 26: Smells Like Progress - New Tricks for Old Problems

Friday, July 10th, 2026 3:30 - 5:00 PM
Room 254
Building directly on odor fundamentals, this session focuses on practical liquid- and vapor-phase odor control solutions for collection systems. Experts compare chemical treatment alternatives for sulfide control with vapor-phase technologies, discuss when each is most appropriate, and outline key implementation considerations such as performance goals, site constraints, and operational requirements. Participants will gain a structured, site-specific framework for selecting and designing effective odor control systems.
Lead Facilitator Jonathan Gordon, *Parametrix*
Assistant Facilitator(s) Diederik Apgar; Inken Mello, *Black & Veatch Corporation (HQ)*

3:30 PM **Chemical Treatment Alternatives for Collection System Odor Control**

3:55 PM **Vapor Phase Treatment Options for Collection System Odor Emission Control**

4:20 PM **Considerations when Implementing Odor Control**

4:45 PM **Interactive session: Designing The Right Odor Control System**

Session 27: Staying Out of Trouble (and in Compliance)

Friday, July 10th, 2026 3:30 - 4:30 PM

Room 255

Strategies for maintaining regulatory compliance and efficient development review are the focus. Sessions discuss watershed-scale programmatic approaches to emerging contaminants and evolving stormwater rules, and strengthening stormwater and floodplain development review processes. Practical guidance helps utilities and municipalities avoid penalties while delivering resilient infrastructure.

3:30 PM **Stormwater 2.0: Adapting Treatment Strategies to Address Contaminants of Emerging Concern and Evolving Regulatory Requirements. Programmatic, Systems-Based Strategies for Evolving Stormwater Compliance**

Dustin Atchison, *Jacobs Engineering*

CoAuthor(s): Jana Crawford, *Jacobs Engineering*

4:00 PM **From Submittal to Decision: Strengthening Stormwater and Floodplain Development Review**

Dan Gariepy, *TY Lin*

CoAuthor(s): Chad Moniz, *TY Lin*;

Session 28: Running the Show - Utility Management Real Talk

Saturday, July 11th, 2026 8:30 - 10:00 AM

Room 252

Straight-talk utility leadership and operational topics are covered. Sessions explore starting effective mentoring programs for workforce development, tips for accessing funding in uncertain times, and Onondaga County's data-driven CMOM program that integrates flow metering, hydraulic modeling, and asset management. Attendees will gain actionable ideas for building stronger teams, securing resources, and improving system-wide performance.

8:30 AM **Mentor Up! How to Start a Mentoring Program That Makes a Difference**

Shwetha Pandurangi, *HW Lochner*

9:00 AM **Tips and Tricks for Accessing Funding in Uncertain Times**

Emily Platt, *Carollo Engineers*

9:30 AM **Systemwide Solutions: Onondaga County's Data-Driven Approach to Building Their CMOM Program**
Zachary Monge, *Jacobs*

Session 29: Small Systems, Big Problems (and Smart Solutions)

Saturday, July 11th, 2026 8:30 - 10:00 AM
Room 253
Targeted solutions for small-community challenges in stormwater and collection systems are highlighted. Case studies include embedding expertise for resilient coastal growth in Chambers County, scaling large-system condition assessment tools for a 2,000-customer district in Colorado, and stormwater master planning to accommodate infill development. Practical, scalable approaches help smaller utilities solve big infrastructure problems.

8:30 AM **Embedding Expertise: Chambers County's Blueprint for Resilient Coastal Growth**
Kendall Crawford, *Tetra Tech*
CoAuthor(s): Zachary Vogler, *Chambers County*

9:00 AM **What happens in Vegas doesn't always stay in Vegas - Large to Small System Sewer Condition Assessment**
Ann Quenzer, *CONSOR ENGINEERING*
CoAuthor(s): Evan Person, *Castle Pines Village Metropolitan District*

9:30 AM **Does Your System have Enough Capacity for Infill: Stormwater Master Planning**
Danika Smith, *Carollo Engineers*
CoAuthor(s): Caroline Burger, *Carollo Engineers*

Session 30: Modeling the Mayhem

Saturday, July 11th, 2026 10:30 AM - 12:00 PM
Room 252
Advanced modeling techniques for complex stormwater and collection systems are the focus. Presentations compare MIKE URBAN and SWMM platforms for Seattle, optimize open-channel flood flow representation using existing collection system tools in Berkeley County, and evaluate HEC-RAS Beta against common stormwater models. Attendees will learn practical strategies for accurate modeling under challenging conditions.

10:30 AM **Bridging the Gaps between Modeling Platforms for Seattle Public Utilities (SPU) Drainage and Wastewater System**

Suibing Liu, *Jacobs*
CoAuthor(s): Theodore Thorson, *Seattle Public Utilities*; Joshua Hensley, *Jacobs*

11:00 AM **Optimizing an Open Channel System to Reduce Flooding in Berkeley County, West Virginia**
Saki Handa, *Suez SES North America*
CoAuthor(s): Marc Leisenring; Sarah Dickert, *Geosyntec*; Alexandra Webb, *Suez SES North America*

11:30 AM **Model Comparison: HEC-RAS Beta versus Two Common Stormwater Collection Systems Models**
Paige Bistromowitz, *Carollo Engineers, Inc*
CoAuthor(s): Caroline Burger, *Carollo Engineers*

Session 31: I/I Solutions in Practice - Tools, Tech, and Case Studies

Saturday, July 11th, 2026 10:30 AM - 12:00 PM
Room 253
Practical tools and real-world case studies for inflow and infiltration reduction are the focus. Sessions cover real-time monitoring paired with rainfall analytics for small collection systems, innovative climate-resiliency modeling of rainfall-runoff and groundwater contributions, and modeling the complex effects of high river levels on sewer capacity. Attendees gain transferable strategies for proactive wet-weather management and capacity planning.

10:30 AM **Real-Time Monitoring & Rainfall Analytics: Proactive Wet-Weather Management in Small Collection Systems**
Loree Pryce, *Engineering Support Services, LLC*
CoAuthor(s): Brogan Quist

11:00 AM **Technologies for Climate Resiliency in Sewer System**
Ann Quenzer, *CONSOR ENGINEERING*
CoAuthor(s): Sheryl Hale, *City of Vancouver*; Aaron Odegard, *City of Vancouver*; Mark Castle, *City of Vancouver Public Works*

11:30 AM **Sanitary Sewer Capacity Planning along the Russian River: Considering the Impact of High River Levels on Sewer Capacity**
Catherine Greenman, *Woodard & Curran*
CoAuthor(s): George Lincoln