

# TECHNICAL PROGRAM

**Monday, November 2**

CEU/PDH Approvals Coming Soon

**8:00 A.M.**

Welcome and Opening Keynote

**9:10 A.M.**

**COLLECTION & DISTRIBUTION**

**Inline Inspection Challenges on Parallel PCPP Raw Water Mains in Raleigh**  
Jim Perrotti, CDM Smith

**SPECIAL TOPICS**

**Optimizing Best Management Practices for a Beverage Company in Western NC for Future Compliance**

John Brinkley, Black & Veatch

**WATER**

**The Water Research Foundation Update**  
Alice Fulmer, The Water Research Foundation

**YOUNG PROFESSIONALS**

**Want to Fly Drones? Here's What it Takes**  
Sam Beavans, Freese and Nichols

**9:45-10:15 A.M. - NETWORKING BREAK/ INTERACTIVE SOLUTIONS MARKETPLACE**

**10:20 A.M.**

**COLLECTION & DISTRIBUTION**

**Charting a New Course in Risk Management after Two High Consequence Water System Failures**  
Adam Sharpe, HDR

**SPECIAL TOPICS**

**Mooving Data Collection to the Air**  
Seth Swain, WithersRavenel

**WATER**

**Catawba River WSP Raw Water Dam and Reservoir Design, Construction, and 1st Year Operation**  
Scott Thompson, Black & Veatch

**YOUNG PROFESSIONALS**

**Corrosion and Odor Control 101 – Odor Control Assessment of 3 Charlotte Wastewater Treatment Plants**  
Ahmed Bitar, CDM Smith

**10:55 A.M.**

**COLLECTION & DISTRIBUTION**

**Pipeline Condition Assessment Findings and Challenges from Three Metallic Force Mains in the City of Greensboro, NC**  
Paul Batman, Arcadis & City of Greensboro

**SPECIAL TOPICS**

**Drone's-eye View: Painting a Better Picture of Construction Management**  
Sam Beavans, Freese and Nichols Inc.

**WATER**

**Lake Management Strategies for Source Water Quality Management**  
Elizabeth Crafton, Hazen and Sawyer

**YOUNG PROFESSIONALS**

**Tightfisted Times: How to Fix a Pump Station on a Tight Budget**  
Clark Maness, WithersRavenel

**11:30 A.M. -1:00 P.M. -NETWORKING BREAK/ INTERACTIVE SOLUTIONS MARKETPLACE**

**1:05 P.M.**

**COLLECTION & DISTRIBUTION**

**Durham's Eno River Outfall Replacement: Not Your Typical Outfall Project**  
Jacob Bowes, MCKim & Creed

**SPECIAL TOPICS**

**Crisis Communications after COVID-19: Lessons Learned from the Pandemic**  
Mike McGill, WaterPIO

**WATER**

**An Evaluation of Advanced Oxidation Processes for the Removal of 1,4-Dioxane in Drinking Water**  
Greg Flory, Piedmont Triad Regional Water Authority

**YOUNG PROFESSIONALS**

**Thinking Outside the Box and Inside the Cylinder: Water Tank Retrofit for a Water Booster Station**  
Marshall Grossell, Arcadis

**1:40 P.M.**

**COLLECTION & DISTRIBUTION**

**Briar Creek: No Sewer Wars, No Force, but a Remarkable Trilogy Nonetheless**  
Chris Kolkhorst, CDM Smith & Charlotte

**SPECIAL TOPICS**

**Best Practices and Lessons Learned from Water and Wastewater System Responses to COVID-19**  
Jack Moyer, AECOM

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## **WATER**

**Pilot Showcase in South Carolina's Broad River Basin: Ceramic Membranes, Ozone, and More**

Paul Hargette, Black & Veatch

## **YOUNG PROFESSIONALS**

**Decision-Support Tools for Water Distribution System Risk Management**

Nicola Hill, HDR

**2:15 P.M.**

## **COLLECTION & DISTRIBUTION**

**Rare Pipes: Rehabilitating a 27-inch, Tar Lined, Corrugated Metal Gravity Sewer Interceptor - Planning to Construction**

Brenton Bent, Rocky Mount

## **SPECIAL TOPICS**

**Evaluation of Grit Characteristics and Grit Removal Performance Using the VICAs Method**

Jared Beavans, Hazen and Sawyer

## **WATER**

**Optimizing Manganese Removal in Water Treatment Operations: Lessons Learned Over Thirty Five Years of Work**

William Knocke, Department of Civil and Environmental Engineering - Virginia Tech

## **YOUNG PROFESSIONALS**

**What to Do When It All Goes Wrong**

Jennifer Haynie, NCDENR

**2:50 P.M.**

## **COLLECTION & DISTRIBUTION**

**Polymer, Portland Cement, Fiberglass - Deciding on the Right Manhole**

Chris Windley, CJS

## **SPECIAL TOPICS**

**A Case Study of PFAS Chemistry in Waste Water Influent Samples**

Lindsay Boone, Enthalpy Analytical

## **WATER**

**Brackish Groundwater Desalination - Energy-Efficiency Gains Through Retrofitting**

Jorge Arroyo, Freese and Nichols Inc.

## **YOUNG PROFESSIONALS**

**The fundamentals of ANAMMOX deammonification: discovery, application and advantages**

Lauren Frei, Stantec

**3:15 P.M. - 4:00 P.M. - NETWORKING BREAK/ INTERACTIVE SOLUTIONS MARKETPLACE**

**4:05 P.M.**

## **COLLECTION & DISTRIBUTION**

**Acquisition and Rehabilitation of Timmonsville's Utilities - The Final Chapter**

Porter Rivers, AECOM

## **SPECIAL TOPICS**

**A Tale of Two Utilities SCADA Master Plans - Different Strokes for Different Folks**

Terry Draper, EMA, Inc.

## **WATER**

**Performance Requirements for PFAS Removal by Reverse Osmosis Membranes for the Northwest WTP**

Jonathan Treadway, CDM Smith

## **YOUNG PROFESSIONALS**

**Water and Wastewater Master Planning: An Overview**

Kristen Cartwright, Freese and Nichols

**4:40 P.M.**

## **COLLECTION & DISTRIBUTION**

**Out with the old...in with the new updating York County's aging standard utility construction documents**

Dennis Kachmarsky, Arcadis

## **SPECIAL TOPICS**

**It's kind of a big deal - Lowering apparent water loss by improving accuracy on a 120" Raw Water Meter**

Mike Queen, Charlotte Water

## **WATER**

**PFAS Adsorption: Lessons Learned Removal**

Casey Theys, Calgon Carbon Corporation

## **YOUNG PROFESSIONALS**

**Pump Station Diagnosis: How Sanford Got Back on the (Pump) Curve**

Parker Colbath, WithersRavenel

# TECHNICAL PROGRAM

**Tuesday, November 3**

CEU/PDH Approvals Coming Soon

8:00 A.M.

## **POLICY & MANAGEMENT**

**A Case for Regionalization: The City of Southport's Journey to Securing a Long-Term Solution to their Wastewater Treatment Needs**

Time Devine, Hazen and Sawyer

## **SPECIAL TOPICS**

**Leveraging BIM for Advancing Design, Construction, and Operations**

Jonathan Lapsley, CDM Smith

## **WASTEWATER**

**Let's Start-Em Up! Efficiently Integrating Digester Start-up into Plant Operations**

Chris Moline, HDR

8:35 A.M.

## **POLICY & MANAGEMENT**

**The HRSD SWIFT Program: A Case Study in Collaborative Program Management**

Kenneth Horner, AECOM

## **SPECIAL TOPICS**

**HRSD Goes Live – Using Dynamic Data to make the Right Investments at the Right Time**

David London, Black & Veatch

## **WASTEWATER**

**Worthless Dust or Valuable Resource? Drying Thermally Hydrolyzed Solids the Right Way**

Stephanie Spalding, HDR

9:10 A.M.

## **POLICY & MANAGEMENT**

**Taking a Capital Program from \$16M to \$400M in 5 Years Flat**

Drew Hardin, Freese and Nichols, Inc.

## **SPECIAL TOPICS**

**Where to Start? Asset Management Database Population with Survey123**

Colby Cash, Hazen and Sawyer

## **WASTEWATER**

**Thermal Hydrolysis: Lessons Learned from 20 Years of THP Design Integration**

Greg Knight, Black & Veatch

9:45 A.M.

## **POLICY & MANAGEMENT**

**New Daily Demand Patterns and The Financial Reality**

Ken Orié, WithersRavenel

## **SPECIAL TOPICS**

**ESI - Assisting Organizations to go Beyond Compliance**

Marcia Allocco, NCDEQ - Division of Environmental Assistance and Customer Service

## **WASTEWATER**

**The influence of thermal hydrolysis on the operating costs of biosolids management**

Tim Bishop, Heyward

10:15 A.M. - 11:00 A.M. - NETWORKING BREAK/ INTERACTIVE SOLUTIONS MARKETPLACE

11:05 A.M.

## **POLICY & MANAGEMENT**

**Hurdling the permitting, design, & construction gauntlet: A case study in intergovernmental/private sector coordination to provide wastewater to the Moncure Megasite**

Charles Archer, Freese and Nichols, Inc.

## **SPECIAL TOPICS**

**Better Wear, Less Tear: Get More Out of Your Coating Investment**

Matthew Cartwright, Freese and Nichols, Inc.

## **WASTEWATER**

**Regionalization of Solids Treatment - Charlotte Water's Path to a Circular Economy**

K Richard Tsang, CDM

11:40 A.M.

## **POLICY & MANAGEMENT**

**Define Your Own Destiny: Using Planning and Design to Set the Terms for Industrial Growth**

Scott Haberstroh, Freese and Nichols, Inc.

## **SPECIAL TOPICS**

**Overcoming Unique Challenges: Proper Management of PCCP Infrastructure**

Paul Longo, Dewberry Engineers Inc.

## **WASTEWATER**

**Getting to (and staying at) 17% Cake Solids: Challenges, Successes, and Lessons Learned**

Christopher Andres, Town of Cary

12:10 P.M. - 1:30 P.M. - NETWORKING BREAK/ INTERACTIVE SOLUTIONS MARKETPLACE

# TECHNICAL PROGRAM

**Tuesday, November 3**

CEU/PDH Approvals Coming Soon

1:35 P.M.

## **POLICY & MANAGEMENT**

### **Continuing Challenges: Why Many North Carolina Utilities Struggle with Viability**

Francine Durso, NC Division of Water Infrastructure

## **SPECIAL TOPICS**

### **Managing Change in a Changing Environment**

Chris Gray, Harper General Contractors

## **WASTEWATER**

### **Novel System for Phosphate Sequestration and Biogas Capture from Anaerobically Digested Sludge**

Mudit Gangal, Ovivo

2:10 P.M.

## **POLICY & MANAGEMENT**

### **Legislative and Regulatory Update**

Paul Nyffeler, AquaLaw PLC

## **SPECIAL TOPICS**

### **Advancing the Digital Twin Concept at Treatment Facilities for Optimization and Rapid Prototyping of Improvements**

Jeremy Koch, AECOM

## **WASTEWATER**

### **Building Phosphorous Recovery from the Ground Up**

Nicole Stephens, Stantec

2:45 P.M.

## **POLICY & MANAGEMENT**

### **A New General Permit for Sewer Extensions Serving a Primary Residence with an Accessory Dwelling Unit**

Christyn Fertenbaugh, NCDEQ - DWR

## **SPECIAL TOPICS**

### **Progressive Design-Build Upgrade to Membrane Bioreactor Helps University Optimize Water Reuse**

Mary Sadler, Hazen and Sawyer

## **WASTEWATER**

### **Biogas Utilization at McAlpine Creek WWMF: What's the Best Option?**

Ahmed Bitar, CDM

3:20 P.M.

## **POLICY & MANAGEMENT**

### **Communicating your CIP to key stakeholders, including the press and the public**

Mike McGill, WaterPIO

## **SPECIAL TOPICS**

### **Salt Accounting to Better Forecast and Manage Impacts of Indirect Potable Reuse**

Nick Landes, Freese and Nichols, Inc.

## **WASTEWATER**

### **Use of Micro-aeration to Improve Biogas Quality at Full Scale Digestion**

Adrian Romero, Jacobs

3:50 P.M. -4:20 P.M. -NETWORKING BREAK/ INTERACTIVE SOLUTIONS MARKETPLACE

4:25 P.M.

## **POLICY & MANAGEMENT**

### **A Resilient Path Towards an Uncertain Future: Lessons Learned from America's Water Infrastructure Act of 2018**

Jonathan Williams, South Atlantic Area Water Resources Manager

## **SPECIAL TOPICS**

### **Design Challenges and Lessons Learned for Complex Sewer Bypassing**

Paul Longo, Dewberry Engineers Inc.

## **WASTEWATER**

### **Rocky River Regional WWTP Upset and Recovery**

George Anipitakis, Brown and Caldwell

5:00 P.M.

## **POLICY & MANAGEMENT**

### **Integrating Risk-Based Resilience Assessment into Water System Master Planning**

Kevin Laptos, Black & Veatch

## **SPECIAL TOPICS**

### **Life-Saving Mentorship: Engineering Solutions in Cambodia**

Jeff Wing, WithersRavenel

## **WASTEWATER**

### **Utilizing CFD Modeling to Improve Lift Station Operating Conditions**

Josh Powell, McKim & Creed

# TECHNICAL PROGRAM

**Wednesday, November 4**

CEU/PDH Approvals Coming Soon

**8:00 A.M.**

**POLICY & MANAGEMENT**

**ring Strategic Buy-in: Charlotte Water's Foundation for the Future**  
Catherine Carter, Raftelis

**WASTEWATER**

**Aerobic Granular Sludge at CLWater: Pilot Planning, Execution, and Take-Aways**  
Muriel Steele, Charlotte, NC

**WATER**

**Using Satellite RADAR imaging to detect pipeline leaks in Hilton Head - A Case Study**  
James Perry, Utilis

**8:35 A.M.**

**POLICY & MANAGEMENT**

**The Importance of and Methodology for Developing Business Continuity Plans in Water and Wastewater Systems**  
Jack Moyer, AECOM

**WASTEWATER**

**Pushing the Limits of RAS Fermentation: Demonstration Study Results from Charlotte Water's McAlpine Creek WWMF**  
Kristen Fredrickson, Black & Veatch

**WATER**

**Capacity Restoration of the Lenoir WTP**  
Joel Whitfield, McGill Associates, P.A.

**9:10 A.M.**

**POLICY & MANAGEMENT**

**Climate Change and Emergency Management Planning for Public Water Systems**  
Randy Hintz, WithersRavenel

**WASTEWATER**

**MABR at Gold Bar WWTP: enabling nitrification below washout SRT and enhanced TN removal &#8211; a pilot study**  
Niclas Astrand, Suez

**WATER**

**The Skylights the Limit: Innovation and Coordination in Facility Upgrades at The Mills River WTP**  
Will Allen, Stantec

**9:45 A.M.**

**POLICY & MANAGEMENT**

**Redefining risk in renewal needs forecasts**  
David Gordon, Blue Cypress Consulting

**WASTEWATER**

**Improved BNR Performance Through Selective Sludge Wasting**  
Daniel Dair, World Water Works

**WATER**

**Weathering a "Category F" (Flooding-FEMA-Funding) Project with a Focus on the Future**  
Jeremy Rivenbark, CJS Conveyance, PLLC

**10:15 A.M. -11:00 A.M. -NETWORKING BREAK/ INTERACTIVE SOLUTIONS MARKETPLACE**

**11:05 A.M.**

**POLICY & MANAGEMENT**

**Applying the Envision Sustainable Design Framework for Smaller Construction Projects**  
Lawrence Alewine, Stantec

**WASTEWATER**

**Hitting a Moving Target - Designing An MBR System With Uncertain Nutrient Limits**  
David Wankmuller, Hazen and Sawyer

**WATER**

**How to Handle the Communication Challenges Caused by the Revised Lead and Copper Rule**  
MikeMcGill, WaterPIO

**11:40 A.M.**

**POLICY & MANAGEMENT**

**What Drives Your Pump Decision Processes?**  
Reid Campbell, AECOM

**WASTEWATER**

**Effective master planning through risk management**  
Thomas Johnson, Jacobs

**WATER**

**Re-evaluating the importance of mixing in drinking water treatment**  
Amir Alansari, UNCC

**12:10 P.M. -1:30 P.M. -NETWORKING BREAK/ INTERACTIVE SOLUTIONS MARKETPLACE**

**1:35 P.M.**

**COLLECTION & DISTRIBUTION**

**Applying Innovative GIS and Business Intelligence Tools to Support Utility Mgmt**  
Jayson Brennen, CDM Smith

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## **WASTEWATER**

**When H2S Attacks & #8211; Fast Tracked Headworks Corrosion and Odor Control Improvements**

Thomas Nangle, Brown and Caldwell

## **WATER**

**A Fate and Transport Model for the Prediction of PFAS in A Drinking Water Supply**

Samantha Black, HDR

**2:10 P.M.**

## **COLLECTION & DISTRIBUTION**

**Utility's Guide to Understanding & Preparing for the Revised Lead & Copper Rule**

Stuart Jeffcoat, HDR

## **WASTEWATER**

**ZeeNAMMOX & #8211; partial nitrification and anammox using MABR**

Amit Kaldate, Suez

## **WATER**

**Design considerations for multiple emerging contaminants of concern in North Carolina's Cape Fear River**

Cory Hopkins, Hazen and Sawyer

**2:45 P.M.**

## **COLLECTION & DISTRIBUTION**

**A Better Crystal Ball? Using Sensitivity Analysis to Select Sewer Level of Service**

Keller Schnier, Brown & Caldwell

## **WASTEWATER**

**Predictive Analytics with Machine Learning - the Next Step in WRF Operation and Optimization**

Katya Bilyk, Hazen and Sawyer

## **WATER**

**GAC Performance Modeling for PFAS Removal**

Dustin Mobley, Black & Veatch

**3:20 P.M.**

## **COLLECTION & DISTRIBUTION**

**The New "P"; In Your Collection System Maintenance Program: Predictive Maintenance**

Alexander Palmatier, HDR W-S/Forsythe Co. Utilities

## **WASTEWATER**

**Full-scale Side-by-side Comparison of Control Valves for DO control and ABAC**

Maren Deal, Brown and Caldwell

## **WATER**

**Advanced Treatment Pilot Testing for Removal of PFAS and Other Emerging Contaminants**

William Dowbiggin, CDM Smith

**3:50 P.M. -4:20 P.M. -NETWORKING BREAK/ INTERACTIVE SOLUTIONS MARKETPLACE**

**4:25 P.M.**

## **COLLECTION & DISTRIBUTION**

**What are you planning for? Design storm selection for the City of Durham**

Brian White, Freese and Nichols

## **WASTEWATER**

**Peracetic Acid - Implementing an Alternative Disinfectant for Water Resource Recovery Facilities**

Jacob Van Geffen, CDM

## **WATER**

**"Creating Resiliency under Pressure" - A Win-Win Solution for Cary's Pressure Zone Management**

Robert Hirt, Town of Cary, NC

**5:00 P.M.**

## **COLLECTION & DISTRIBUTION**

**Are Storms Getting More Frequent and Intense and How Can We Monitor Infiltration/Inflow? Helping OWASA Get Answers**

Christine Nesbit, CDM Smith

## **WASTEWATER**

**THE USE OF UVC -LED IN THE DISINFECTION OF WASTEWATER EFFLUENT**

Gary Hunter, Black & Veatch

## **WATER**

**Enhancing Resiliency through America's Water Infrastructure Act 2018 Best Practices**

Christina Hurley, Stantec