



# 2022 TRI-ASSOCIATION CONFERENCE

ROLAND E. POWELL CONVENTION CENTER | OCEAN CITY, MD  
AUGUST 30 - SEPTEMBER 2, 2022



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**Hazen and Sawyer is proud to be a  
continued supporter of the Chesapeake  
Tri-Association Conference.**

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# WELCOME

## WELCOME TO THE 2022 TRI-ASSOCIATION CONFERENCE

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Dear industry colleagues,

On behalf of the Water and Waste Operators Association (WWOA), the Chesapeake Section, American Water Works Association (CSAWWA) and the Chesapeake Water Environment Association (CWEA), I would like to extend a warm welcome to everyone attending the 2022 Tri-Association Conference!

The Conference is a product of the hard work and dedication of more than 50 planning committee members from the three Associations, representing a considerable array of backgrounds and capabilities. I thank them for their diligence and resolve. In putting this conference together, the planning committee's goal was to produce an outstanding event including social events as well as a technical program with a wide range of topics from which all attendees can gather insights into the challenges facing the water and wastewater industries and the environment in general. I hope you will find that this year's conference has accomplished this goal.

Speaking for the committee, I hope this conference will be a valuable experience for all of our water and wastewater professionals, our industrial colleagues, as well as local, county and state municipal planners and elected leaders.

Thank you to all of our sponsors, speakers, exhibitors, and attendees for your continued support of the Tri-Con. I hope you enjoy and benefit from all that the conference has to offer!

*Karl Ott, 2022 Tri-Association Conference Committee Chair*



## GENERAL INFORMATION FOR ATTENDEES

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The Chesapeake Water Environment Association (CWEA), the Chesapeake Section American Water Works Association (CSAWWA), and the Water & Waste Operators Association of MD, DE, and DC (WWOA) are pleased to once again host a combined Annual Conference and Exhibition at the Roland E. Powell Convention Center in Ocean City, Maryland from August 30 – September 2, 2022. The Conference Committee has planned the program and schedule, as well as negotiated blocks of rooms at conference rates with several local hotels. Please check the Tri-Association Conference website ([www.ChesapeakeTricon.org](http://www.ChesapeakeTricon.org)) frequently for updated information regarding the program, hotel accommodations, registration, golf outing, Fun Run/Walk, and other valuable information.

The Conference Registration, Information Desk, and Exhibits will be located on the first floor of the Convention Center. We are also hosting our Opening Ceremony in the Performing Arts Center, conveniently located across from our Exhibit Hall. This year's Exhibit Hall will include more than 180 standard booths. Wednesday breakfast and breaks, Wednesday lunch, and Thursday breakfast and breaks will be held in the Exhibit Hall with the exhibitors. In addition, the Annual Operations Challenge will be spotlighted in the Exhibit Hall as will Meter Madness, with the exciting Pipe Cutting Shootout scheduled at the same time as the Wednesday Shooters Happy Hour.

Our 2022 Technical Program will include more than 100 presentations in five concurrent technical sessions including two one-hour engineering ethics courses. In addition to the technical presentations, Pre-Conference Workshops on: asset management, the science of manholes, and building water resiliency will be held on Tuesday, August 30, 2022, offering three hours of non-process credits.

Exhibitors: Please do not park large equipment in the parking lot at the main entrance to the convention center. These spots are for our attendees.

# WELCOME

## 2022 TRI-ASSOCIATION CONFERENCE COVID COMPLIANCE MEASURES

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At the present time there are no COVID-related restrictions, but that condition could change as we approach the conference. The Tri-Con Committee will continue to touch base on updates and implement the required CDC, state, and local COVID precautionary protocols in effect at the time of the conference. We encourage those not vaccinated or with concerns to continue to wear masks. The technical session room sizes have been increased to allow for social distancing. Hand sanitizers, disinfecting wipes, and face masks will be available at the Information Desk.

*Hand sanitizer for the 2022 Tri-Association Conference provided by:*

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## TRI-CON FUNDRAISING

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The Tri-Association Conference has confirmed an updated philanthropic program for 2022, which is focused on providing educational support within the local industry and communities. Proceeds from fundraisers will help us deliver scholarships through existing programs and partnerships within our three associations:

- WWOA – Operator scholarships
- CWEA – Operator and college scholarships
- CSAWWA – Operator and college scholarships

And, as our associations have for decades, we will also provide fundraiser proceeds to Water For People ([www.waterforpeople.org](http://www.waterforpeople.org)) – a global nonprofit that helps people bring clean water and sanitation solutions to their communities for generations to come.

Traditionally, Tri-Association Conference also opens a Request for Proposals for a local water/wastewater/stormwater organization to benefit. For 2022, proceeds will be donated to Howard EcoWorks ([www.howardecoworks.org](http://www.howardecoworks.org)), which is a regional force for social and environmental change. They engage and educate the community about

# WELCOME

sustainability and restoration, while creating pathways to green jobs through workforce development programs. They focus on waterway debris management and stormwater best practices to protect vulnerable areas from flooding and stormwater run-off.

Tri-Con will support these donations through the following fundraisers:

**Golf Tournament • 5K Fun Run/Walk • Silent Auction**

We believe that this strategy will keep more of our members' donations closer to home while continuously fulfilling our water-focused educational mission.

We welcome your feedback: [info@chesapeakeetricon.org](mailto:info@chesapeakeetricon.org).

## CYBER CAFÉ

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The Cyber Café will be located in Room 209 and will include PCs and a printer. Please be mindful of others working in the Cyber Café.

## EXHIBIT HALL WIFI

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WiFi will be available at no cost in the Exhibit Hall!

To access the Exhibit Hall Wi-Fi:

**SSID:** CTAGuest2022    **Password:** HDRTricon2022

*Sponsored by:*

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## HEADSHOT BOOTH – NEW FOR 2022!

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**Wednesday, 10:00 AM – 4:00 PM**

Ready for a new headshot for your resume or online profile? Notch it up with our professional photographers from Pure Light Images. Look for signs in the exhibit hall for location.

# WELCOME

## ROLAND E. POWELL CONVENTION CENTER

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The Convention Center is located at 4001 Coastal Highway, between 40th and 41st Streets. There are 1,200 parking spaces at the Convention Center. Anyone with a 2022 Tri-Association Conference name badge can ride the Ocean City buses at no charge.

## REGISTRATION

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Registration Location: First Floor Lobby

Tuesday: 10:00 AM to 4:00 PM

Wednesday: 7:30 AM to 5:00 PM

Thursday: 7:30 AM to 4:00 PM

Friday: 7:30 AM to 10:30 AM

*Sponsored by:*

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While you are registering, make sure you grab your souvenir Tri-Association tote bag!

*Tote bags sponsored by:*

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*Conference lanyards sponsored by:*

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## ATTENTION CERTIFIED OPERATORS

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The pre-conference workshop and technical sessions have been submitted for approval by the Maryland Board of Waterworks and Waste System Operators; and the Delaware Office of Water, Advisory Council for the Licensing of Certified Public Water System Operators. **Be sure to get your Technical Session Attendance Form stamped at the end of each session as this will be the only time to obtain stamps that verify your attendance.**

The Maryland Board of Waterworks and Waste System Operators has again approved **one hour of non-process credit for Exhibitor Product Briefings** by visiting exhibitors in the Exhibit Hall. Operators and superintendents can meet and discuss available technologies with a minimum of 10 exhibitors. Exhibitors can complete and sign the *Exhibitor Product Briefing Form*, which is part of the Technical Session Attendance Form, to receive credit. Operators must obtain signatures from 10 exhibitors to receive the one non-process credit hour as no partial credit will be given.

All operators must get their completed *Technical Session Attendance Form* signed by an authorized committee member at the Information Desk **before you leave the conference**. You will not be able to obtain a signature after noon on Friday, September 2, 2022.



# WELCOME

## ATTENTION PROFESSIONAL ENGINEERS

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As part of the continuing education requirements for professional engineers registered in Maryland, Delaware, and Virginia, you are required to obtain proof of attendance for professional development hours. The *Technical Session Attendance Form* will be available at the conference to provide proof of attendance. **Be sure to get your *Technical Session Attendance Form* stamped at the end of each session. This will be the only time to obtain stamps that verify your attendance.**

**Engineering Ethics in 2022:** Two one-hour presentations on engineering ethics will be provided as part of the technical program to assist PEs with meeting the requirement.

All engineers pursuing continuing education credits must get their completed *Technical Session Attendance Form* signed by an authorized committee member at the Information Desk **before you leave the conference**. You will not be able to obtain a signature after noon on Friday, September 2, 2022.



## AWESOME DOOR PRIZES AT EVERY BREAK!

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All registered attendees receive door prize tickets with their badge. Each break has its own ticket, so be sure to get yours into the drawing bin noted on the ticket. Drawings take place approximately 15 minutes prior to the end of the break. Location of each drawing is noted on the ticket. Door prizes will also be given at the Opening Ceremony and Awards Ceremony, and all are invited.

## CONFERENCE APP

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The Tri-Association Conference app can be downloaded in the Apple and Google Play stores – just search for “Tri-Con.” The Technical Program, Exhibit Hall, Scheduled Events, and Sponsors are all included!

The entire Tri-Association Conference program and other useful information will be available, so make sure to download the app to your phone!

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# CONFERENCE PLANNING COMMITTEE

**Raj Arora**, *American Pipe*

Door Prizes; Registration

**Clarence Beverhoudt**, *WSSC*

Convention Center Liaison;  
Silent Auction; Young Professionals

**Peter Bozick**,

*George, Miles & Buhr, LLC*  
Ad Hoc COVID Compliance (Chair)

**Priscilla Brown-Buchalla**,

*Black and Veatch*  
Hotels (Chair);  
Opening Ceremony (Chair)

**Mike Cecil**, *American Contracting  
and Environmental Services, Inc.*

Photography

**Chein-Chi Chang**,

*DC Water (Retired)*  
Opening Ceremony;  
Technical Program

**Andy Cooper**,

*Whitman, Requardt & Assoc.*  
Door Prizes (Chair); Registration;  
Silent Auction

**Gian Cossa**, *DC Water*

Arrangements (Chair);  
Seacrets (Chair); Door Prizes;  
Opening Ceremony

**Teresa DiGenova**,

*Black and Veatch*  
Technical Program;  
Women's Networking

**Allison Dyott**,

*Anne Arundel County*  
Signs (Co-Chair)

**Mike Emery**, *DC Water (Retired)*

Signs (Co-Chair); Door Prizes;  
Exhibits; Silent Auction

**Jegnaw Essatu**, *WSSC*

Young Professionals (Chair)

**Travis Gold**,

*Atlantic Coating Consultants*  
Moderators – Monitors (Co-Chair)

**Pono Hanson**,

*Brown and Caldwell*  
Sponsorships (Chair)

**Eric Held**, *Charles Morrow & Assoc.*

Exhibits (Chair); Meter Madness  
(Co-Chair); Pipe Tapping;  
Registration; Door Prizes;  
Technical Program

**Andrew Jakubowitch**,

*Century Engineering*  
Awards

**Bob Johns**, *Ferguson*

Exhibits; Meter Madness (Co-Chair);  
Pipe Tapping (Co-Chair)

**Tara Jones**, *Maryland Center  
for Environmental Training (MCET)*

Moderators – Monitors (Co-Chair)

**Islam Khallaf**, *RJN Group*

Ops Challenge

**Jay Kirk**, *Brown and Caldwell*

2021 Tri-Con Committee Chair

# CONFERENCE PLANNING COMMITTEE

**Carrie Kruger**, *Town of Millsboro*  
Brochure (Chair);  
Fun Run/Walk (Chair);  
Golf Outing

**Graeme Lake**, *Penonni*  
Treasurer; Arrangements; Awards;  
Moderators-Monitors; Seacrets

**Sophia Liskovich**,  
*Gannett Fleming, Inc.*  
Technical Program (Chair)

**Darcy Male**, *WSSC*  
Women's Networking (Chair)

**Ann McPherson**,  
*Black and Veatch*  
Technical Program

**Kraig Moodie**, *RJN Group*  
Ops Challenge

**Ogechi Okpechi**, *DC Water*  
Brochure; Opening Ceremony

**Karl Ott**, *Charles County (Retired)*  
2022 Tri-Con Committee Chair;  
Convention Center Liaison;  
Registration; Sponsorships;  
Travel/Meetings

**Rob Penman, Jr.**,  
*Artesian Water (Retired)*  
Technical Program

**Charles Poskas**, *CCJM*  
Fun Run/Walk; Technical Program

**Barry Price**, *Artesian Water*  
Top Ops

**Kevin Quinn**, *St. Mary's METCOM*  
Awards (Chair); Brochure;  
Golf; Opening Ceremony;  
Technical Program

**Anthony Rocco**,  
*Howard County Bureau of Utilities*  
Top Ops (Chair)

**Mark Snyder**, *Mueller*  
Exhibits; Meter Madness

**Ray Streib**,  
*Development Facilitators, Inc.*  
Silent Auction

**Ron Tatariw**, *Tatariw, Inc.*  
Golf (Chair)

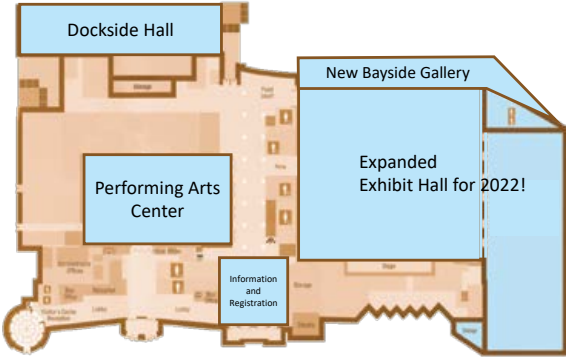
**Erica Whorley**,  
*Brown and Caldwell*  
Promos/Communications (Chair);  
Silent Auction (Chair); Sponsorships

**Alan Will**, *JMT*  
Convention Center Liaison (Chair);  
Photography (Chair)

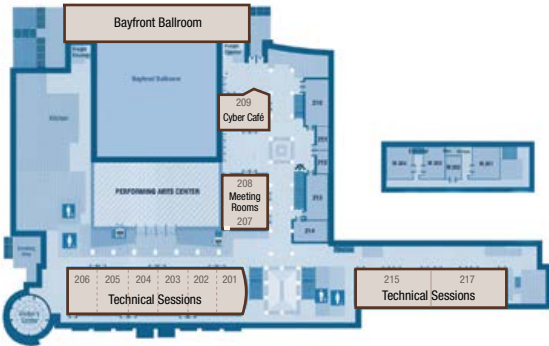
***Thank you, committee volunteers!***

# CONVENTION CENTER MAPS

## FIRST FLOOR



## SECOND FLOOR



Cyber Café: Room 209  
Technical Sessions: Rooms 201–206, 215, 217  
Meeting Rooms: Dockside Hall (1st Floor),  
Bayside Ballroom (2nd Floor), 207–208

# CONFERENCE AT-A-GLANCE

Tuesday, August 30		Wednesday, August 31	
<b>Registration</b> First Floor 10:00 AM – 4:00 PM		<b>5K Fun-Run/Walk</b> Boardwalk at the Grand Hotel 7:00 AM	
<b>Exhibitor Move-In</b> Exhibit Hall 8:00 AM – 6:30 PM		<b>Break/Visit Exhibitors/Door Prizes</b> Exhibit Hall 10:00 AM – 11:00 AM	
<b>Golf Outing</b> Ocean City Golf Club Berlin, MD Sign-In: 11:00 AM – 12:00 PM Shotgun Start: 12:00 PM		<b>Registration/Check-In</b> First Floor 7:30 AM – 5:00 PM	
<b>Pre-Conference Workshop</b> <i>Asset Management</i> Room 201–202 1:00 PM – 4:15 PM		<b>Opening Ceremony/Keynote Address</b> Performing Arts Center – <i>Door Prize</i> 11:00 AM – 12:00 PM	
<b>Pre-Conference Workshop</b> <i>The Science of Manholes</i> Room 203–204 1:00 PM – 4:15 PM		<b>Lunch With Exhibitors</b> Exhibit Hall Noon to 1:00 PM	
<b>Pre-Conference Workshop</b> <i>Building Water Resilience in Your Community, US EPA</i> Room 205–206 1:00 PM – 4:15 PM		<b>Technical Sessions</b> Rooms 201–206, 215, and 217 1:00 PM – 2:30 PM	
<b>Operations Challenge</b> <b>Equipment Set-up &amp; Team Check-in</b> Exhibit Hall 12:00 PM – 5:30 PM		<b>Break/Visit Exhibitors/Door Prizes</b> Exhibit Hall 2:30 PM – 3:30 PM	
<b>Operations Challenge – Process Control Event</b> Exhibit Hall 5:30 PM – 6:30 PM		<b>Technical Sessions</b> Rooms 201–206, 215, and 217 3:30 PM – 5:00 PM	
		<b>Shooters Happy Hour</b> Exhibit Hall 4:00 PM – 5:00 PM	
		<b>Operations Challenge</b> Exhibit Hall 9:00 AM – 4:00 PM Awards Ceremony to Follow	
		<b>Operations Challenge – Breakdown</b> Pipe Tapping Move-In Exhibit Hall 5:00 PM – 6:30 PM	
		<b>Silent Auction</b> 8:00 AM – 6:00 PM Exhibit Hall 8:00 AM Online Opens	
		<b>Women's Networking Event</b> Bayfront Ballroom, 2nd Floor 5:00 PM – 6:30 PM	
		<b>Operator Process Class</b> Advanced Treatment Technologies for the 21st Century Room 207–208 8:30 AM – 5:00 PM	
		<b>Fun Night!</b> Seacrets® (ticketed event) 7:00 PM – 11:00 PM	

**All Door Prizes during breaks will be awarded approximately 15 minutes before the end of the break.**

# CONFERENCE AT-A-GLANCE

Thursday, September 1		Friday, September 2	
<b>Registration/Check-In</b> First Floor 7:30 AM – 4:00 PM	<b>CWEA Business Luncheon</b> Bayfront Ballroom – 2nd Floor (ticketed event) 12:30 PM – 1:45 PM	<b>Registration/Check-In</b> First Floor 7:30 AM – 10:30 AM	<b>Continental Breakfast</b> 2nd Floor, Top of Escalator 8:00 AM – 9:30 AM
<b>Exhibits Open</b> Exhibit Hall 7:30 AM – 4:00 PM – <i>New Time!</i>	<b>CSAWWA Business Luncheon</b> Dockside Hall – 1st Floor (ticketed event) 12:30 PM – 1:45 PM	<b>Cyber Cafe</b> Room 209 8:00 AM – 10:30 AM	<b>Technical Sessions</b> Rooms 201–206, 215, and 217 9:00 AM – 10:00 AM
<b>Continental Breakfast</b> Exhibit Hall 7:30 AM – 9:30 AM	<b>WVOA Business Luncheon</b> Exhibit Hall – <i>New Location!</i> (ticketed event) 12:30 PM – 1:45 PM	<b>Break</b> 2nd Floor, Top of Escalator 10:00 AM – 10:15 AM	<b>MDE Operator Certification Exam</b> Rooms 207–208 9:00 AM – 12:00 PM
<b>Silent Auction</b> Exhibit Hall/Online 7:30 AM – 3:15 PM	<b>Meter Challenge</b> Exhibit Hall 2:00 PM – 3:00 PM	<b>Technical Sessions</b> Rooms 201–206, 215, and 217 2:00 PM – 3:30 PM	<b>Technical Sessions</b> Rooms 201–206, 215, and 217 10:15 AM – 11:45 AM
<b>Cyber Cafe</b> Room 209 8:00 AM – 6:00 PM	<b>Technical Sessions</b> Rooms 201–206, 215, and 217 2:00 PM – 3:30 PM	<b>Top Ops</b> Dockside Hall (1st Floor) 2:30 PM – 4:30 PM	<b>Last Chance for Technical Session Attendance Form Signatures</b> Information Desk 11:45 AM – 12:00 PM
<b>Technical Sessions</b> Rooms 201–206, 215, and 217 8:30 AM – 10:00 AM	<b>Hydrant Hysteria Demonstration</b> Exhibit Hall 3:30 PM	<b>Break/Visit Exhibitors/Door Prizes</b> Exhibit Hall 3:30 PM – 4:00 PM	<b>Adjuorn/Monster Door Prizes</b> Information Desk 12:00 PM
<b>Operator Exam Prep Class</b> <i>Maximizing Success – How to Prepare for and Take the State Certification Exam</i> Rooms 207–208 • 8:15 AM – 5:00 PM	<b>Break/Visit Exhibitors/Door Prizes</b> Exhibit Hall 4:00 PM – 7:00 PM	<b>Technical Sessions</b> Rooms 201–206, 215, and 217 4:00 PM – 5:30 PM	
<b>Pipe Tapping</b> Exhibit Hall 9:30 AM – 11:30 AM	<b>Exhibitor Move Out – <i>New Time!</i></b> Exhibit Hall 4:00 PM – 7:00 PM	<b>Technical Sessions</b> Rooms 201–206, 215, and 217 4:00 PM – 5:30 PM	
<b>Water Taste Test</b> Exhibit Hall 10:00 AM – 11:00 AM	<b>Awards Program</b> Bayfront Ballroom – 2nd Floor <i>Door Prize</i> 5:30 PM – 6:30 PM	<b>Exhibitor Move Out – <i>New Time!</i></b> Exhibit Hall 4:00 PM – 7:00 PM	
<b>Break/Visit Exhibitors/Door Prizes</b> Exhibit Hall 10:00 AM – 11:00 AM	<b>YP Happy Hour</b> Skye Bar on 66th Street 6:30 PM – 9:00 PM	<b>Technical Sessions</b> Rooms 201–206, 215, and 217 11:00 AM – 12:30 PM	



# TECHNICAL PROGRAM AT-A-GLANCE

WEDNESDAY, AUGUST 31, 2022

	Room 201–202	Room 203–204	Room 205–206	Room 215	Room 217	Room 207–208
	Asset/Utility Management	Utility Management	Water System Infrastructure	Wastewater Treatment and Solids Processing	Stormwater	Operator Process Class
8:30 AM	Optimizing Lead Service Line Replacement with Machine Learning	Addressing Water Supply Challenges – Aquifer Recharge in Hillsborough County Florida	What Could Go Wrong? Lessons Learned from Trenchless Water/Wastewater Installations	Modeling for Success: Upgrading Lagoon Based Treatment Systems to Meet More Stringent Limits for BOD, TSS & Nutrient Removal	MS4 TMDL Program Management: Case studies in Planning to Implementation for Project Portfolios	Advanced Treatment Technologies for the 21st Century 8:30 AM – 5:00 PM  TRE 7046-21-7; All Operators (Process)
9:00 AM	Enhancing Asset Management Workflows with Out-of-the-box GIS Web Applications	Advanced Water Treatment for Managed Aquifer Recharge in Anne Arundel County, MD	Trigger-Based Distribution System Master Planning	Primary Settling Tank Capacity and Performance Assessment at AlexRenew	ETHICS: Overcoming Data Inequities to Improve Outcomes	
9:30 AM	Asset Management – Building Information Management (BIM) 16th & Alaska Pump Station Pilot	Planning for the Future – Identifying Future Raw Water Sources and Assessing Treatment Needs	Lessons Learned from Implementation of DC Water Digital Twin	Case Studies of Secondary Biological Treatment Systems Meeting Full Enhanced Nutrient Removal Limits		
	Room 201–202	Room 203–204	Room 205–206	Room 215	Room 217	
	Asset/Utility Management	Utility Management	Water System Infrastructure	Wastewater Treatment and Solids Processing	Stormwater	
1:00 PM	Findings and Lessons Learned from a Comprehensive Visual & Sounding and Electromagnetic Survey of a Large Transmission Main	Artificial Intelligence Applied: Reducing Lead Exposure Promotes Environmental Justice in Toledo, Ohio	Dam Design Value Engineering Approaches – Applying the Latest Science to Address Spillway Capacity	Achieving Enhanced Nutrient Removal with AquaNereda® Aerobic Granular Sludge	Innovative Methods to Select and Implement Green Stormwater Infrastructure Improvements within Large Watershed Areas – A Case Study	
1:30 PM	Corrosion and Aging Water/Wastewater Infrastructure	Baltimore City's Integrated Planning Frameworks in Capital Improvement Program & Equity Lens	1 Million Gallons of Drinking Water Storage Replacement for the Town of Middletown	Is it Possible to Remove PFAS from Biosolids? A Review of Different PFAS Removal Technologies	Extreme Makeover, Sediment Basins Edition: Conversion to Submerged Gravel Wetlands at Fullerton	
2:00 PM	Aligning Capital Investments to Maximize Customer Level of Service	A Clearer Lens to Drive Water Equity in the Community	Dam Removals – Maryland Lessons Learned and Future Applications	Mitigating the impacts of Volatile Market Conditions through Progressive Design-Build	Glenmont Forest Green Streets: The Challenges and Success of Stormwater Retrofits in the Urban Environment	
	Room 201–202	Room 203–204	Room 205–206	Room 215	Room 217	
	Asset/Utility Management	Utility Management	Water System Infrastructure	Wastewater Treatment and Solids Processing	Stormwater	
3:30 PM	Don't Get Caught with Your Pumps Down... Using Analytics to Improve Pump Performance	Resilience Funding, Financing, and Implementation Strategies: The Usual Suspects and Non-Traditional Opportunities	Mining for Lead: Lead and Copper Rule Revision Inventory	A Full-scale Demonstration of ABAC Results in Energy & Carbon-efficient BNR via SND and Post Denitrification with Internally Stored Carbon	The Application of Geographic Information Systems (GIS) in Storm Water Management	
4:00 PM	AWWA Standards and Manuals Supporting Water Storage Tank Inspection and Cleaning	A Case Study for Funding Water Infrastructure Projects	Impact of Flow Rate and Water Age on Opportunistic Pathogen Growth: Implications for Water Conservation, Fixture Design & Policy	Rehabilitation of Biosolids Drying System to Regain Capacity	The Role of Community-Enabled Lifecycle Analysis of Storm Water Infrastructure Costs (CLASIC)	
4:30 PM	The Goal Posts Keep Moving! Lessons Learned from Recent Water Main Inspections	What's It Worth to You? An Analysis of WSSC Water's Water Treatment Residuals	Rehabilitation Innovation and Historic Preservation at the City of Baltimore's 40 MGD Guilford Water Pumping Station	Cooking Without Gas: Reducing Sludge Management Costs using THP in Plants without Anaerobic Digestion	Challenges and Lessons Learned in Developing a Stormwater Fee	

# TECHNICAL PROGRAM AT-A-GLANCE

THURSDAY, SEPTEMBER 1, 2022 · MORNING

	Room 201–202	Room 203–204	Room 205–206	Room 215	Room 217	Room 207–208
	<b>Asset/Utility Management</b>	<b>Utility Management</b>	<b>Water System Infrastructure</b>	<b>Wastewater Treatment and Solids Processing</b>	<b>Wastewater Collection Systems</b>	<b>Operator Class</b>
8:30 AM	Biosolids Facilities Planning – Using Asset Management and Adaptive Pathways Planning for Milwaukee MSD	Renewable Power and Microgrid Assessment for a Water Reclamation Facility in Anne Arundel County	Choosing the Right Rehabilitation Technique for Water Mains	Degreasing the Pipes: Effectively Processing FOG at the Central WPCF	Rehabilitating a Century-old Sewer in an Environmentally Sensitive Area with Permissions from Multiple Agencies in Washington, D.C.	Maximizing Success – How to Prepare for and take the State Certification Exam 8:15 AM – 5:00 PM
9:00 AM	Ensuring Critical Asset Optimization and Uptime using Artificial Intelligence	Can Backup Generator Installations at Wastewater Treatment Facilities Generate Revenue? A Case Study	Dealing with Failure	Collaborative, Trigger-Based Biosolids Masterplan for Seven-Facility Municipality in the Chesapeake Bay Watershed	Flexibility Drives Micro-tunneling Success	TRE 6554-19-05: All Operators (Non-Process)
9:30 AM	Utilizing Mobile, Battery-operated Cellular Data Recorders with a Map-centric Approach to Municipal Water & Sanitary Sewer System Monitoring	Engaging the Team – Collaborative Risk Development and Tracking	From Concept to Reality: Improving the Integrity of Service Reinstatement in CIPP Lined Pressure Pipes	Two-Stage Partial-Nitritation/Anammox Process Demonstrates Stable and Efficient Treatment of High-Strength Industrial Digestate	Urban Stream and Sewer Improvements in Parallel... A Challenging Project	
	<b>Room 201–202</b>	<b>Room 203–204</b>	<b>Room 205–206</b>	<b>Room 215</b>	<b>Room 217</b>	
	<b>System Operations/Maintenance</b>	<b>Utility Management</b>	<b>Sustainability/Resiliency</b>	<b>Wastewater Treatment and Solids Processing</b>	<b>Wastewater Collection Systems</b>	
11:00 AM	Corrosion Test Stations: Repair and Usage	Harnessing the Power of Data: Using Key Performance Indicators and Benchmarks to Optimize Your Operations	Preparing the Wastewater Treatment Facilities Operations for Extreme Weather Events	Cleanest Effluent in the State?	Baffled?! Solving Pump Air Binding with Out of Box Thinking Process	
11:30 AM	Water Quality Hurdles – Case Study in Balancing Fire Protection with Water Quality for Nitrification Control	Visualization Techniques to Improve Workforce Efficiency	Machine-Learning Aeration Control for Energy Efficient Secondary Treatment	Upgrades to Aeration System at 64 MGD Facility to Optimize Process Aeration Control and Reduce Process Airflow	Collection System Odor Abatement for Anne Arundel County	
12:00 PM	Impact of Covid-19 Pandemic Years in Maintaining Water Quality throughout the Washington D.C. Distribution System	Proactive Maintenance Planning using Robotics, AI and Neural Networks	Resilience through Simulation: Using Digital Twins to Prepare for Climate Change	Thermal Hydrolysis (THP) – Commissioning Experiences and Considerations	Sustainable Energy Solutions for Wastewater Pumping Stations in Anne Arundel County, Maryland	

# TECHNICAL PROGRAM AT-A-GLANCE

THURSDAY, SEPTEMBER 1, 2022 · AFTERNOON

	Room 201–202	Room 203–204	Room 205–206	Room 215	Room 217
	System Operations/ Maintenance	Water Treatment	Sustainability/Resiliency	Wastewater Treatment and Solids Processing	Wastewater Collection Systems
2:00 PM	Screening Failure at an Aging Wastewater Pump Station – Expedited Design and Construction for Emergency Repairs	Lead and Copper Rule Revisions – Case Studies on Ways to Simplify Compliance	Offsetting the Grid and Providing Backup Power to Maintain Critical Operations for the Frederick County WWTP	Ballasted Flocculation and Clarification for Ultra-low Total Phosphorus Reduction	Using Transmissive Acoustics to Prioritize Sewer Cleaning and Reduce SSOs in Rockville, MD
2:30 PM	Planning, Design, and Data Management Considerations for Plant Optimization	Surveying Costs on The PFAS Roadmap	Mapping Thermal Energy Exchange Potential from Urban Colorado and Suburban Maryland Collection Systems	Augmenting Anaerobic Digestion Performance with Recuperative Thickening in Dubai	How to Find the Sweet Spot for Sewer Cleaning Frequency
3:00 PM	Nutrient Management within a Bubble Permit	Let's Break Down Forever Chemicals; Insights from Design/ Build Approach to Provide PFAS Treatment	Award Winning Efficiency – CHP for the Piscataway Bioenergy Project	Upgrade and Rehabilitation of Two Headworks Facilities in Southern Delaware	Six Years of SL-RAT Data and What has Baltimore County Learned?
	Room 201–202	Room 203–204	Room 205–206	Room 215	Room 217
	System Operations/ Maintenance	Water Treatment	Sustainability/Resiliency	Wastewater Treatment and Solids Processing	Wastewater Collection Systems
4:00 PM	Practical Ways to Keep Your SCADA System Secure – An Overview of Cyber-Security Standards, Best Practices & Technologies	Optimization of the Residuals Handling Process at the Patuxent Water Filtration Plant	From Floyd to Florence: Impacts of Extreme Hurricane Events on the Tar-Pamlico River Basin, North Carolina	Using Multiple Treatment Stages to Provide More Thorough Odor Control & Reduction in Operating Costs	Large Diameter Pipe and Tunnel Rehabilitation Challenges on the Potomac Interceptor
4:30 PM	Smart Operations and Maintenance: Human versus AI-based Monitoring in Water and Wastewater Treatment Plants	Fast-track Collaborative Design of a Membrane Water Treatment Plant	Adapting Collection System Infrastructure to Changing Flood Vulnerabilities – Eastern Seaboard Case Studies	Sludge Densification: Emerging and Efficient Way to Look at Biological Nutrient Removal Treatment	Box-Tunneling Saves the Day from Utility Congestion
5:00 PM	Utilizing GIS to Eliminate Confusion and Automate the Customer Notification Process	UCMR5 – A Primer: What To Expect, When Does it Start, and Who is Affected	Resilient Stormwater Pump Station Systems in Virginia Beach	Coagulants and Polymers – Fundamentals of Clarification and Dewatering	Baltimore City Dept. of Public Works Accelerated Design Project Ddelivery Method

# TECHNICAL PROGRAM AT-A-GLANCE

FRIDAY, SEPTEMBER 2, 2022

	Room 201–202	Room 203–204	Room 205–206	Room 215	Room 217
	<b>Asset/Utility Management</b>	<b>Utility Management</b>	<b>Sustainability/Resiliency</b>	<b>Wastewater Treatment and Solids Processing</b>	<b>Engineering Ethics</b>
9:00 AM	Minimizing Risk during SmartBall Leak Detection Inspections	Lessons Learned: Managing Large Scale Progressive Design Build Water Projects	The Journey to Silver: Envision Sustainability Award at the Little Patuxent Water Reclamation Plant	Business Case Analysis for Biogas Utilization at Morris Forman WWTP	Ethical Considerations in Intellectual Property
9:30 AM	WSSC Water Consolidated Laboratory – “Easily Visualize your Building Assets Using a Digital Twin”	CMAR Delivery Enhances Design of New Raw Wastewater Pump Station at the Noman M. Cole Jr. Pollution Control Plant	WSSC Water Consolidated Laboratory – “How to Deliver a Sustainable Water Quality Lab”	Alternate Delivery of a Combined Heat/Power System – How to Stay Away from Hot Water!	
	Room 201–202	Room 203–204	Room 205–206	Room 215	Room 217
	<b>Wastewater Treatment and Solids Processing</b>	<b>Utility Management</b>	<b>Sustainability/Resiliency</b>	<b>Wastewater Treatment and Solids Processing</b>	<b>Wastewater Collection Systems</b>
10:15 AM	Continuous Flow Aerobic Granulation: Revisiting Biological Aggregates for Process Intensification	The Innovation Journey at WSSC Water – Mapping Out Success!	CMAR and Early Contractor Involvement Puts Critical Infrastructure Project on Path to Success	Biosolids Management Strategy: A Shifting Paradigm – (A Step towards Zero-Waste)	Awakening the Sleeping Giant... Inspection of DC Water’s 66-inch/96-inch Anacostia Force Main Gravity Sewer
10:45 AM	Lessons Learned: It Pays to Pause	Cybersecurity Infrastructure: A Must for Water Utilities of the 21st Century	Building Back a Resilient and Sustainable Wastewater System Using Emergency Management Funding to Maximize the Benefit-Cost Ratio	Headworks Facilities Improvements at the Patapsco WWTP	In the Thick of Things: Measuring In Situ Drywell Can Thickness to Guide Rehab and Replacement Investments
11:15 AM	Transitioning A Large Wastewater Treatment Facility from Local Control to Plant-wide SCADA System	S-O-S, Please, Somebody Help Me: Baltimore City’s Sewage-Onsite-Support Pilot Program Helping Residents on Basement Backups	Why the KISS Principle is the Right Solution for Flood Protection at Leonardtown WWTP	Sidestream Design with Whole Plant in Mind	Intermunicipal Coordination to Manage Strategic Regional Asset Potomac Interceptor (PI) Flow Analysis

# CONFERENCE HIGHLIGHTS

TUESDAY, AUGUST 30, 2022

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## REGISTRATION/CHECK-IN

10:00 AM – 4:00 PM • First Floor Lobby

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## EXHIBITOR MOVE-IN

8:00 AM – 6:30 PM • Exhibit Hall

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## GOLF OUTING

11:00 AM Check-In, 12:00 PM Shotgun Start

Format: Scramble

### Ocean City Golf Club

11401 Country Club Drive, Berlin, MD

Before you arrive in Ocean City, stop off in nearby Berlin, Maryland to play on the beautiful and challenging Newport Bay course at the Ocean City Golf Club. Prizes will be distributed at the end of the golf outing. A winners list will be posted at the Conference Information Booth. The scramble format will have a 12:00 PM shotgun start (check-in begins at 11:00 AM). Unclaimed prizes will be posted and can be claimed at the Conference Information Booth. Individual and foursome golf registration fees are \$100 and \$400, respectively, and include a box lunch, driving range, green fees plus cart, and prizes.

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### Inclement Weather Cancellation

Ocean City Golf Club staff will make the determination on whether the golf course is unplayable due to inclement weather. Contact OCGC directly at 410-641-1779 if threatening or severe weather is forecasted

# CONFERENCE HIGHLIGHTS

## TUESDAY, AUGUST 30, 2022

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### GOLF OUTING (CONTINUED)

to determine if the golf outing is cancelled. Credit card refunds will be issued to those who request one in writing directly to Ron Tatariw ([rtatariw@tatariw.com](mailto:rtatariw@tatariw.com)) by 6:00 PM on September 9, 2022, if and only if, the golf outing is cancelled due to inclement weather. We will consider the registration fee of those golfers who do not request a refund as a donation, thanking you in advance, to not-for-profit water organizations.

### Back Again for 2022 – Hole in One Competition for \$25,000!

The golf tournament will include a Hole in One Competition. It will be \$5 to enter and each person can enter only one time. The prize for a hole in one is \$25,000. If there is more than one hole-in-one winner, the prize will be split between the winners.

**Registration:** Register for golf through our online system at [www.chesapeakeicon.org/golf.html](http://www.chesapeakeicon.org/golf.html).

For additional information, Contact Ron Tatariw, Tatariw, Inc., at 703-716-0770 or by email: [rtatariw@tatariw.com](mailto:rtatariw@tatariw.com).

Directions to golf course from Ocean City: Go west on Route 50 to third traffic light and then turn left on Route 611 (Stephen Decatur Highway). Go six miles south on Route 611 to the “Y” in the road. Bear right at the “Y” onto South Point Road. Ocean City Golf Club is one mile on the right.



# CONFERENCE HIGHLIGHTS

## TUESDAY, AUGUST 30, 2022

### PRE-CONFERENCE WORKSHOPS

The 2022 Tri-Association Conference Committee is pleased to offer three separate Pre-Conference Workshops this year. Topics include:

- Asset Management
- The Science of Manholes, and
- Building Water Resilience in Your Community.

You must register for these workshops as part of your conference registration. *The workshops are subject to cancellation dependent upon the number of registrants. If cancelled, registrants will be notified, and workshop payments will be refunded in full.*

### ***Using Dashboards to Solve Problems Faster –***

*Presented by the Asset Management Committees of CSAWWA & CWEA*

**1:00 PM – 4:15 PM • Rooms 201–202**

1:00–1:15	Introductions and Kickoff	Ethan Vidal – Xylem Assessment Services
1:15–1:30	Defining the Goals: What Problems Can Dashboard Solve? (Presentation)	Theresa Bruton – DC Water
1:30–2:00	Goal Setting Activity (Small Group Activity)	Theresa Bruton – DC Water
2:00–2:15	Data 101: Best Practices (Presentation)	Brian Ball – City of Baltimore
2:15–2:45	Data Cleaning Activity (Small Group Activity)	Brian Ball – City of Baltimore
2:45–3:00	Break, with refreshments	
3:00–3:30	Dashboard Skill Building (Presentation)	Allen Brunson – Black & Veatch
3:30–4:00	Ask an Expert – Dashboard Skill Building (Panel)	Allen Brunson – Black & Veatch

# CONFERENCE HIGHLIGHTS

TUESDAY, AUGUST 30, 2022

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## PRE-CONFERENCE WORKSHOPS (CONTINUED)

### *The Science of Manholes*

*Presented by J. Scott Shipe, Scott Inspection Services*

**1:00 PM – 4:15 PM • Rooms 203–204**

Logical infrastructure water science is the objective of this presentation. The workshop will instruct attendees how to utilize tools that are available regarding Soil Science, Corrosive Science, Flood Plain Soils, and identifying Priority Infrastructure.

- Introduction: Why inspect manholes?
- Developing and maintaining accurate records for performing a logical sanitary sewer inspection audit
- Developing inspection maps with existing contract drawings
- Developing manhole (MH) numbering system
- Midnight investigations
- Preparing collection system base maps
- Assigning manhole ID numbers when working with property
- Obtaining easement access where priority manholes are located; cleaning easements
- How to take a digital photograph of a sanitary sewer manhole and what equipment is needed for inspection
- Manhole components
- Identifying defects in manholes
- Evidence of surcharge conditions
- Evidence of inflow & infiltration
- Corrosion to concrete
- Mortar invert
- Diameters
- Odor Issues
- Color of sewage



# CONFERENCE HIGHLIGHTS

TUESDAY, AUGUST 30, 2022

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## PRE-CONFERENCE WORKSHOPS (CONTINUED)

### *USEPA Presents Building Water Resilience in Your Community*

*Presented by U.S. Environmental Protection Agency, Office of Water, Water Security Division*

**1:00 PM – 4:15 PM • Rooms 205–206**

Drinking water and wastewater systems across the country are at risk to many kinds of water emergencies, causing disruptions in their service. The risks and threats range from floods, droughts, fires, cyber-attacks or broken mains. The types of assets that need to be resilient to these hazards include: pipes, physical barriers, source water, water collection and intake, electronic, computer, or other automated systems and many more. To help with this planning, the United States Environmental Protection Agency (USEPA) developed tools and resources that can help build resilience within your water system.

Tools and resources will include:

- Assess: Risk and Resilience Assessments and Creating Resilient Water Utilities Resources
- Plan: Emergency Response Plan Template and Community Based Water Resiliency
- Train: Tabletop Exercise Tool and Cybersecurity
- Response: Response On-The-Go and Water Contaminant Information Tool
- Recovery: Federal Funding for Water and Wastewater (FedFUNDS) and Hazard Mitigation Guide



# CONFERENCE HIGHLIGHTS

## TUESDAY, AUGUST 30, 2022

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### 13TH ANNUAL OPERATIONS CHALLENGE

Equipment Set-Up and Team Check-In

12:00 PM – 5:30 PM • Exhibit Hall

Operation OC2! – Day 1

Process Control Event • 5:30 PM – 6:30 PM • Exhibit Hall

Continues on Wednesday. (See page 27 for details.)

Do you ever wonder what transpires behind the scenes during the operation of a water resource recovery facility? Instead of continuing to take these unsung specialists for granted, learn how the best wastewater collection and treatment personnel



in the country display their skills at the Operations Challenge. In this competitive challenge, teams compete to earn the highest score in five different events. Each team includes four members, and often a coach as well. Each event is designed to test the diverse skills required for the operation and maintenance of water resource recovery facilities, collection systems, and laboratories. The five events are collections systems, laboratory, process control, maintenance, and safety. Winners are determined by a weighted points system.

To register your team for this event go to:

[www.ChesapeakeTricon.org/Ops-Challenge.html](http://www.ChesapeakeTricon.org/Ops-Challenge.html).

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# CONFERENCE HIGHLIGHTS

WEDNESDAY, AUGUST 31, 2022

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## 5K FUN RUN/WALK

7:00 AM • Boardwalk at the Grand Hotel (21st Street)

Cost includes t-shirt, prizes, refreshments, and a donation to not-for-profit organizations.

See page 79 for registration fee and information.



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CCJM



EBA<sup>EO</sup>  
ENGINEERING



Hazen



Michael Baker  
INTERNATIONAL



PRIME<sup>AL</sup>

**Inclement Weather Cancellation:** In the event of inclement weather, Fun Run registrants will be contacted by email if the event is cancelled. Credit card refunds will be issued to those who request one in writing directly to Carrie Kruger ([carriek@millsboro.org](mailto:carriek@millsboro.org)) by 6:00 PM on September 9, 2022 if, and only if, the Fun Run is cancelled due to inclement weather. We will consider the registration fee of those runners who do not request a refund as a donation.

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## REGISTRATION/CHECK-IN

7:30 AM – 5:00 PM • First Floor Lobby

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## EXHIBITS OPEN

7:30 AM – 5:00 PM • Exhibit Hall

# CONFERENCE HIGHLIGHTS

WEDNESDAY, AUGUST 31, 2022

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## CONTINENTAL BREAKFAST

7:30 AM – 9:30 AM • Exhibit Hall

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## CYBER CAFÉ

8:00 AM – 6:00 PM • Room 209

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## TECHNICAL SESSIONS

8:30 AM – 10:00 AM • Rooms 201–206, 215, and 217

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# CONFERENCE HIGHLIGHTS

WEDNESDAY, AUGUST 31, 2022

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## 13TH ANNUAL OPERATIONS CHALLENGE

Pre-Competition Meeting

**8:30 AM – 9:00 AM • Exhibit Hall**

Operation OC2! – Day 2

**9:00 AM – 4:00 PM • Exhibit Hall – Award Ceremony to Follow**

The Operations Challenge continues with day two's exciting events, including:

- Maintenance Event
- Collection System Event
- Safety Event
- Awards
- Pipe Cutting Shootout

Operations Challenge will conclude with the Pipe Cutting Shootout that happens during the Shooters Happy Hour. This event is open to any registered attendee. There will be a male and a female division and prizes. Please sign up for the event on Tuesday or Wednesday before the event (see page 32 for details).

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## BIOSOLIDS BEAUTY CONTEST

**9:00 AM – 11:00 AM**

**Exhibit Hall at Ops Challenge *New Location!***

Contact Hahns Hairston at [hahns.hairston@wsscwater.com](mailto:hahns.hairston@wsscwater.com) for more information on submitting your entry.

# CONFERENCE HIGHLIGHTS

WEDNESDAY, AUGUST 31, 2022

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## SILENT AUCTION

**8:00 AM – 6:00 PM • Exhibit Hall**

(Ends at 3:15 PM on Thursday, September 1, 2022.)

### Silent Auction Is Online Again this year!

Tri-Con's Silent Auction will once again be a hybrid event with items displayed in the Exhibit Hall, but bidding will take place at [www.32auctions.com/Tricon2022](http://www.32auctions.com/Tricon2022).

To participate, you will need an *32auctions* account. The auction will run continuously and end on Thursday at 3:00 PM. You must pay for your item directly online, and then bring your receipt to the Information Desk to pick up your items. No items will be shipped.

To donate an item, contact Erica Whorley before August 22. To participate in the auction, visit our website or the exhibit hall for detailed instructions on bidding with *32auctions*.

Items will be displayed in the Exhibit Hall, and detailed instructions for participating are posted in at the Silent Auction tables, and at the Information Desk. Contact Erica Whorley ([triconsilentauctions@gmail.com](mailto:triconsilentauctions@gmail.com) or [ewhorley@brwncaled.com](mailto:ewhorley@brwncaled.com)) for more information.

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## OPERATOR PROCESS CLASS

**8:30 AM – 5:00 PM • Rooms 207–208**

**Advanced Treatment Technologies for the 21st Century**

**TRE 7046-21-7; All Operators (Process)**

**Course Description:** Today's technological advances have resulted in our ability to measure and report emerging contaminants and pathogens. Trace amounts of pharmaceuticals, organics, PFAS, pathogenic microorganisms (Covid-19, freshwater flesh-eating Amoeba), and others have prompted operators and superintendents to explore treatment technologies available to best meet these potential challenges. This program explores applications of chemical oxidation, absorbance, filtration, precipitation, and the combination of advanced technologies currently available, as well as future treatment capabilities expected to

# CONFERENCE HIGHLIGHTS

WEDNESDAY, AUGUST 31, 2022

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## OPERATOR PROCESS CLASS (CONTINUED)

meet these challenges. This class explores Chlorine Dioxide, Peracetic Acid, Fenton's reaction, and combination with UV, Ozone, Advance Oxidation Process, and even the use and application of Nanotechnology to meet future treatment needs.

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## WEDNESDAY MORNING BREAK/VISIT EXHIBITORS

**10:00 AM – 11:00 AM • Exhibit Hall**

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## OPENING CEREMONY

**11:00 AM – 12:00 PM**  
**Performing Arts Center**



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## Welcome

Karl Ott, Tri-Association Conference Committee Chair

# CONFERENCE HIGHLIGHTS

WEDNESDAY, AUGUST 31, 2022

## OPENING CEREMONY (CONTINUED)

### Keynote Speaker

### **Charles Glass, Ph.D., P.E.**

*Director of Maryland Environmental Services*



Charles C. Glass, Ph.D., P.E. was unanimously confirmed by the Maryland State Senate as the Director of Maryland Environmental Service (MES) on March 19, 2021. He was appointed as Acting Director and Chairman at MES by Governor Larry Hogan in June 2020 after serving as Deputy Secretary at the Maryland Department of Natural Resources. Prior to his role at DNR, Dr. Glass served as Assistant Secretary for Transportation Policy Analysis and Planning and Director of Bicycle and Pedestrian Access at the Maryland Department of Transportation.

Dr. Glass' credentials include serving more than 20 years as a research and engineering professional in academia and the consulting engineering industries. Throughout his distinguished career, he has held important positions as a teacher, researcher, and consulting professional in Civil and Environmental Engineering. Dr. Glass is a trained Professional Environmental Engineer, with a doctorate that focused on the microbiological processes involved in wastewater treatment engineering. For 19 years he taught students how to design water and wastewater treatment plants, performed and published research on environmental engineering topics, and taught engineering economics to prepare young engineers to work in the industry.

He has sustained two successful long-term funding relationships involving the District Department of Transportation in Washington, DC, and the National Science Foundation. He has published numerous peer-reviewed journal articles, participated in a variety of widely attended conference proceedings, and is recognized nationally as an expert in stormwater management, green infrastructure, and wastewater treatment.

Dr. Glass joined the Maryland Department of Transportation (MDOT) from Howard University, where he served on the faculty for 17 years. For eight months in 2010, he spent time as an Environmental Engineer at the United States Environmental Protection Agency as the lead on a potential new regulation for the mitigation of sanitary sewer overflows.



# CONFERENCE HIGHLIGHTS

WEDNESDAY, AUGUST 31, 2022

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## LUNCH WITH EXHIBITORS

Noon – 1:00 PM • Exhibit Hall

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DENALI

**FERGUSON**  
WATERWORKS

## TECHNICAL SESSIONS

1:00 PM – 2:30 PM • Rooms 201–206, 215, and 217

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## WEDNESDAY AFTERNOON BREAK/VISIT EXHIBITORS

2:30 PM – 3:30 PM • Exhibit Hall

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## TECHNICAL SESSIONS

3:30 PM – 5:00 PM • Rooms 201–206, 215, and 217

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# CONFERENCE HIGHLIGHTS

WEDNESDAY, AUGUST 31, 2022

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## SHOOTERS HAPPY HOUR

**4:00 PM – 5:00 PM • Exhibit Hall**

Come network and enjoy light fare and drinks with our valued exhibitors while you cheer for contestants in the Pipe Cutting Shootout. Sodas, beer, and wine are complimentary and a cash bar for liquor will be available. After happy hour, support the Women of Water's Networking Event, then join your fellow conference attendees for a Fun Night at Seacrets®!

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## PIPE CUTTING SHOOTOUT

**4:00 PM – 5:00 PM • Exhibit Hall**

Operations Challenge will conclude with the Pipe Cutting Shootout that happens during the Shooters Happy Hour. This event is open to any registered attendee. Please sign up on site in the Ops Challenge area of the Exhibit Hall, to participate in the fastest single pipe cut competition. There is a men's and women's competition, and many first-time cutters participate. Trophies and gift cards will be awarded to the fastest men's and women's cuts! See you Wednesday afternoon!

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## WOMEN'S NETWORKING EVENT

**5:00 PM – 6:30 PM • Bayfront Ballroom**

At this year's Women's Networking Happy Hour, our panel of experts at various stages of their career will share their experiences in the water/wastewater industry and discuss solutions, successes, approaches, and allies. Please join us in the Bayfront Ballroom from 5:00 PM to 6:30 PM to enjoy refreshments and lively discussions!

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# CONFERENCE HIGHLIGHTS

WEDNESDAY, AUGUST 31, 2022

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## FUN NIGHT

**7:00 PM – 11:00 PM • Seacrets®** (ticketed event)

Take a break from the conference madness and recharge at this evening on the beach. Seacrets® is the place, and everything is set for a premier networking event. Cool Caribbean vibe plus great food, great music, even free transportation. Appetizers and a full dinner are served starting at 7 PM, and each guest gets two free drink tickets. Chill under the tent on the beach with our DJ, or rock out with Gary Moore and the Shucked Oyster Band, a legend at water and wastewater events. Join us for the evening and let your cares sink into the bay with the setting sun.

***You must have a ticket to attend, no exceptions. Tickets must be purchased by Tuesday, August 30, 2022. No tickets will be sold at the door or individually on Wednesday at the conference.***

*Bring your name badge to use on the Ocean City buses for a free ride back to your hotel. Must be 21 years old to attend.*

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**GEIGER**

**Jacobs**

**RAMBOLL**

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WATER LLC  
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SCHUTTE**

**WHITE MARSH**  
ENVIRONMENTAL SYSTEMS, INC.  
A Middlesex Water Company Affiliate



# CONFERENCE HIGHLIGHTS

THURSDAY, SEPTEMBER 1, 2022

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## REGISTRATION/CHECK-IN

7:30 AM – 4:00 PM • First Floor Lobby

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**AECOM**

**CDM 75<sup>th</sup>  
Smith**

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## EXHIBITS OPEN

7:30 AM – 4:00 PM *(New Time!)* • Exhibit Hall

Move-Out: 4:00 PM – 7:00 PM *(New Time!)*

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## CONTINENTAL BREAKFAST

7:30 AM – 9:30 AM • Exhibit Hall

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## SILENT AUCTION

7:30 AM – 3:15 PM

Exhibit Hall

(continued from Wednesday)

See page 28 for more information.



## CYBER CAFÉ

8:00 AM – 6:00 PM • Room 209

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# CONFERENCE HIGHLIGHTS

THURSDAY, SEPTEMBER 1, 2022

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## OPERATOR EXAM PREP CLASS

**8:15 AM – 5:00 PM • Rooms 207–208**

**Maximizing Success –**

**How to Prepare for and take the State Certification Exam**

**TRE 6554-19-05: All Operators (Non-Process)**

**Course Description:** Making sure you are prepared to pass the State Certification Exam is not always as simple as just knowing the material; you also have to have knowledge of how to prepare for and take the exam. This course will review how different study methods work for different learning styles, note taking strategies, and specific skills that would help in the learning environment. The course will then address examination techniques and what not to do when getting ready for an exam, for example, cramming and how to handle test anxiety. Other topics covered will include: an overview of multiple-choice questions; recognizing distracters and foils (wrong options); strategies and tactics; analyzing multiple choice questions; analyzing responses; how options can be wrong; how to guess intelligently; taking the multiple-choice test; varieties in the form of the question; and varieties in the nature of the question. Throughout this course, operators will take practice exams with themes becoming more complex to match increasing complexity of the state certification exam.

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## TECHNICAL SESSIONS

**8:30 AM – 10:00 AM • Rooms 201–206, 215, and 217**

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# CONFERENCE HIGHLIGHTS

THURSDAY, SEPTEMBER 1, 2022

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## THURSDAY MORNING BREAK/VISIT EXHIBITORS

10:00 AM – 11:00 AM • Exhibit Hall

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### PIPE TAPPING

9:30 AM – 11:30 AM • Exhibit Hall

Pipe Tapping is a high-energy competition involving a race against time to drill into a pressurized cement-lined, ductile iron pipe and install a tap. Savvy copper flaring, coordinated equipment functions, and brute strength can win the day – and everyone gets a little wet! The winning team will represent Chesapeake Section AWWA at ACE23 in Toronto.



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### WATER TASTE TEST

10:00 AM – 11:00 AM • Exhibit Hall

Which utility has the very best tasting tap water in the Chesapeake region? Find out at this annual favorite, typically held in the spring. The winner will compete nationally at AWWA's ACE23 in Toronto! For more information, download the flyer at [www.csawwa.org](http://www.csawwa.org), or contact George Rest ([george.rest@ramboll.com](mailto:george.rest@ramboll.com)).



# CONFERENCE HIGHLIGHTS

THURSDAY, SEPTEMBER 1, 2022

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## TECHNICAL SESSIONS

**11:00 AM – 12:30 PM • Rooms 201–206, 215, and 217**

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## BUSINESS LUNCHEONS

All conference attendees are welcome to attend the association Business Luncheon of their choice (ticket purchase required). A buffet lunch is served as gavels are passed, and our leaders are recognized. Come and give our volunteers a big hand for delivering value to our members.

*CSAWWA LUNCHEON* (ticketed event)

**12:30 PM – 1:45 PM • Dockside Hall (first floor, bayside)**

The following awards will be presented at the CSAWWA Luncheon/Forum:

- Past Chair Award
- Life Member Awards
- Silver Drop Awards
- Gold Drop Awards
- Committee Chair Recognition
- Chair's Honor Award

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# CONFERENCE HIGHLIGHTS

THURSDAY, SEPTEMBER 1, 2022

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## **BUSINESS LUNCHEONS** (CONTINUED)

**AWWA National Representative**

**Kelley Dearing Smith**

*Vice President, Louisville Water Company  
Incoming Chair, AWWA Public Affairs Council*

Kelley Dearing Smith's career revolves around listening, telling stories and building brands.



Kelley is Louisville Water Company's Vice President of Communications and Marketing and the incoming chair of AWWA's Public Affairs Council. In her 20+ year career at Louisville Water, Kelley has developed strategic partnerships and communication plans that highlight something most take for granted: a high-quality and reliable supply of drinking water. Kelley is a member of Louisville Water's Executive Leadership Team and directs the company's communications and marketing efforts, brand development, education and outreach, government relations, and economic development.

Kelley has authored a book on Louisville Water's history and oversaw the development of the WaterWorks Museum at the company's original 1860 pumping station. A native of Kentucky, Kelley is married with two daughters. Prior to Louisville Water, Kelley worked in television news. She holds a Bachelor's degree in Broadcast Journalism from Eastern Kentucky University.

## **CWEA BUSINESS LUNCHEON** (ticketed event)

**12:30 PM – 1:45 PM • Bayfront Ballroom (second floor, bayside)**

The following awards will be presented at the CWEA Business Luncheon:

- Rising Star Award
- 5S Inductions
- Past President's Award
- President's Award



# CONFERENCE HIGHLIGHTS

## THURSDAY, SEPTEMBER 1, 2022

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### **BUSINESS LUNCHEONS** (CONTINUED)

#### **WEF National Representative**

#### **John Trofatter**

*2021–2022 Board of Trustees*

John Trofatter is a member of the 2021–22 Board of Trustees for the Water Environment Federation (WEF).



John is the Director of Business Development for Teledyne ISCO – Water Platform and responsible for strategic and business development activities of the Water Platform products and services. He has over 40 years of experience in the development and application of instrumentation and control systems in the water related industries working in a variety of capacities including general management, sales, product development, project management, and engineering.

A WEF member since 1989, John became engaged with Operations Challenge in 2001 as a collection systems event judge. He assumed the roles of the Collection Systems Event Coordinator, Operations Challenge Committee Vice-Chair and then Chair. John also became an active member of the WEF Collection Systems Committee. He later moved to the Committee Leadership Council as Vice-Chair and then Chair. John is a member of the New England and Florida WEAs and a past member of the Michigan and New York WEAs.

John is a graduate of Nassau Community College with a degree in electronic/instrumentation technology and attended City College of New York for Electro-Mechanical Engineering.

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# CONFERENCE HIGHLIGHTS

THURSDAY, SEPTEMBER 1, 2022

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## BUSINESS LUNCHEONS (CONTINUED)

*WWOA BUSINESS LUNCHEON* (ticketed event)

**12:30 PM – 1:45 PM • Exhibit Hall (New Location!)**

Join WWOA members and leadership at their Annual Business Luncheon in the Exhibit Hall. Ticket holders are welcome to listen in over a buffet lunch.

The following awards will be presented at the WWOA Business Luncheon:

- WWOA Lifetime Membership Award
- WWOA Employer Recognition Award

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## METER CHALLENGE

**2:00 PM - 3:00 PM • Exhibit Hall**

The Meter Challenge competition is your opportunity to challenge and compete against your fellow operators, engineers, and other water utility professionals. The competition is an individual event aimed at measuring an individual's skill at assembling a meter quickly, totally, and accurately. Groups and teams can register and compete under their entities' names; however, each qualified participant is solely responsible for his/her performance. Winner of the local competition will have the chance to go to the national AWWA Meter Challenge Competition at ACE23 in Toronto.



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# CONFERENCE HIGHLIGHTS

THURSDAY, SEPTEMBER 1, 2022

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## TECHNICAL SESSIONS

2:00 PM – 3:30 PM • Rooms 201–206, 215, and 217

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## TOP OPS

2:30 PM – 4:30 PM • Dockside Hall (first floor)

This fast action, fun annual competition has teams of water operators squaring off against each other. The quiz show format tests the quick thinking of operators who answer challenging technical, regulatory, and math questions. Competitors will vie for a chance to go to the national Top Ops Challenge at ACE23 in Toronto. For more information, contact Anthony Rocco, 410-313-4945.



## HYDRANT HYSTERIA DEMONSTRATION

3:30 PM – 4:00 PM • Exhibit Hall

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## THURSDAY AFTERNOON BREAK

3:30 PM – 4:00 PM • Exhibit Hall

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## TECHNICAL SESSIONS

4:00 PM – 5:30 PM • Rooms 201–206, 215, and 217

*Sponsored by:*

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# CONFERENCE HIGHLIGHTS

THURSDAY, SEPTEMBER 1, 2022

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## EXHIBITOR MOVE-OUT

4:00 PM – 7:00 PM

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## AWARDS PROGRAM

5:30 PM – 6:30 PM • Bayfront Ballroom (2nd Floor) – Door Prize!

Everyone is welcome to enjoy refreshments and help recognize this year's award-winning members! Meet and congratulate award winners while enjoying hot and cold hors d'oeuvres. Sodas, beer, and wine are complimentary. Cash liquor bar will be available.

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Our organizations have a number of prestigious awards to grant members who have demonstrated the very best of attributes that promote our missions. The following awards will be presented:

### Tri-Association Conference

- Tri-Association Conference Committee Service Award

### WWOA

- Stanley Kappe Training Award
- William McLean Bingley Award for Distinguished Service in Wastewater
- Marlene Patillo Laboratory Award
- WWOA Award for Outstanding Personal Service to the Association
- Barry Walter Award for Distinguished Service in Water Distribution
- Distinguished Service in Water Treatment
- Distinguished Service in Wastewater Collection Systems

### CSAWWA

- Operator of the Year
- Horizon Award
- Carl John Lauter Award
- George Warren Fuller Award
- Operator Teams Recognition: Top Ops, Pipe Tapping, Meter Challenge

# CONFERENCE HIGHLIGHTS

THURSDAY, SEPTEMBER 1, 2022

## AWARDS PROGRAM (CONTINUED)

### CWEA

- Laboratory Analyst Award
- Burke Safety Award
- Hatfield Award – Operators Award
- Bedell Award – Service to the Organization

## YOUNG PROFESSIONALS HAPPY HOUR

**6:30 PM – 9:00 PM • Skye Bar on 66th Street**

Back again this year! All are welcome to join the Young Professionals on Thursday, September 1, 2022 for a fun hour of networking! We will be enjoying happy hour and appetizers at Skye Bar on 66th Street from 6:30 PM to 9:00 PM. Attendance is free, but registration is required and includes one happy hour drink and appetizers.

**SOLD OUT**

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# CONFERENCE HIGHLIGHTS

FRIDAY, SEPTEMBER 2, 2022

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## REGISTRATION/CHECK-IN

7:30 AM – 10:30 AM • First Floor Lobby

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## CONTINENTAL BREAKFAST

8:00 AM – 9:30 AM • 2nd Floor, Top of Escalator

*Sponsored by:*

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**Barton  
& Loguidice**

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## CYBER CAFÉ

8:00 AM – 10:30 AM • Room 209

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## TECHNICAL SESSIONS

9:00 AM – 10:00 AM • Rooms 201–206, 215, and 217

*Sponsored by:*

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## MDE OPERATOR CERTIFICATION EXAM

9:00 AM – 12:00 PM • Rooms 207–208



# CONFERENCE HIGHLIGHTS

FRIDAY, SEPTEMBER 2, 2022

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## BREAK

**10:00 AM – 10:15 AM**

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## TECHNICAL SESSIONS

**10:15 AM – 11:45 AM • Rooms 201–206, 215, and 217**

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## LAST CHANCE FOR TECHNICAL SESSION

### ATTENDANCE FORM SIGNING

**11:45 AM – Noon • Information Desk, First Floor Lobby**

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## ADJOURN/MONSTER DOOR PRIZES

**12:00 PM • Information Desk, First Floor Lobby**



# TECHNICAL PROGRAM SCHEDULE

WEDNESDAY, AUGUST 31, 2022

Speakers' names in bold italics, Co-speakers' names in bold, Co-authors' names in italics.

## 201-202 • ASSET MANAGEMENT

8:30 AM – 9:00 AM

Optimizing Lead Service Line Replacement with Machine Learning

**Kevin Flis, Xylem** (*kevin.flis@xylem.com*)

**Thomas Chen, Xylem**

9:00 AM – 9:30 AM

Enhancing Asset Management Workflows

with Out-of-the-Box GIS Web Applications

**Joe DeLuca, EBA Engineering** (*joseph.deluca@ebaengineering.com*)

**Amy Baker, Cumberland Maryland**

9:30 AM – 10:00 AM

Asset Management – Building Information Management (BIM)

16th & Alaska Pump Station Pilot

**Monique Mirabeau, DC Water** (*mmirabeau@dcwater.com*)

**Michael Skerritt, Mott MacDonald**

*Kenrick St. Louis, DC Water*

*Ogechi Okpechi, DC Water*

*Ella Garcia, DC Water*

1:00 PM – 1:30 PM

Findings and Lessons Learned from a Comprehensive Visual & Sounding and Electromagnetic Survey of a Large Transmission Main

**Golnaz Khorsha, PhD, Baltimore City Department of Public Works** (*golnaz.khorsha@gmail.com*)

**Vennila Durai, PE, Xylem**

*Majid Afshar, Baltimore City DPW*

1:30 PM – 2:00 PM

Corrosion and Aging Water/Wastewater Infrastructure

**Mark Lanham, WSSC Water** (*mark.lanham@wsscwater.com*)

**Andrew Fuller, Black & Veatch**

2:00 PM – 2:30 PM

Aligning Capital Investments to Maximize Customer Level of Service

**Jennifer Steffens, Suez Smart and Environmental Solutions** (*jennifer.steffens@suez.com*)

*Daniel Davis, Howard County Bureau of Utilities*



# TECHNICAL PROGRAM SCHEDULE

## WEDNESDAY, AUGUST 31, 2022

Speakers' names in bold italics, Co-speakers' names in bold, Co-authors' names in italics.

### 201–202 • ASSET MANAGEMENT (CONTINUED)

3:30 PM – 4:00 PM

Don't Get Caught with Your Pumps Down...

Using Analytics to Improve Pump Performance

***Mike Bernard***, *Specific Energy* ([mike.bernard@specificenergy.com](mailto:mike.bernard@specificenergy.com))

4:00 PM – 4:30 PM

AWWA Standards & Manuals Supporting

Water Storage Tank Inspection and Cleaning

***Nicole Clarke***, *Tank Industry Consultants* ([clarke@tankindustry.com](mailto:clarke@tankindustry.com))

4:30 PM – 5:00 PM

The Goal Posts Keep Moving!

Lessons Learned from Recent Water Main Inspections

***Laura Khouvilay***, *Carollo Engineers* ([lkhouvilay@carollo.com](mailto:lkhouvilay@carollo.com))

**Christopher Caro**, WSSC Water

*Sonia Oton*, *Mott MacDonald*

*Felicia James*, *Carollo Engineers*

### 203–204 • UTILITY MANAGEMENT

8:30 AM – 9:00 AM

Addressing Water Supply Challenges –

Aquifer Recharge in Hillsborough County, Florida

***Sean Snow***, *GHD* ([sean.snow@ghd.com](mailto:sean.snow@ghd.com))

**Matthew Trzcinski**, GHD

*Michael Weatherby*, *HydroGeo Consulting*

9:00 AM – 9:30 AM

Advanced Water Treatment for Managed

Aquifer Recharge in Anne Arundel County, MD

***George Heiner***, *Anne Arundel County, MD* ([pwhein19@aacounty.org](mailto:pwhein19@aacounty.org))

**Christina Alito**, HDR

9:30 AM – 10:00 AM

Planning for the Future –

Identifying Future Raw Water Sources & Assessing Treatment Needs

***Phoebe Aron***, *Hazen and Sawyer* ([paron@hazenandsawyer.com](mailto:paron@hazenandsawyer.com))

**Jeremy Hise**, *Hazen and Sawyer*

# TECHNICAL PROGRAM SCHEDULE

WEDNESDAY, AUGUST 31, 2022

Speakers' names in bold italics, Co-speakers' names in bold, Co-authors' names in italics.

## 203–204 • UTILITY MANAGEMENT (CONTINUED)

1:00 PM – 1:30 PM

Artificial Intelligence Applied:

Reducing Lead Exposure Promotes Environmental Justice in Toledo, Ohio  
**Raanan Gurewitsch**, *BlueConduit* ([raanan@blueconduit.com](mailto:raanan@blueconduit.com))

1:30 PM – 2:00 PM

Baltimore City's Integrated Planning Framework  
in Capital Improvement Program & Equity Lens  
**Mohammed Rahman**, *Baltimore City DPW*  
([mohammed.rahman@baltimorecity.gov](mailto:mohammed.rahman@baltimorecity.gov))

**Yosef Kebede**, Baltimore City DPW

2:00 PM – 2:30 PM

A Clearer Lens to Drive Water Equity in the Community  
**Kevin Flis**, *Xylem* ([kevin.flis@xylem.com](mailto:kevin.flis@xylem.com))

**Yosef Kebede**, City of Baltimore DPW

*Jess Moyer*, *Xylem*

3:30 PM – 4:00 PM

Resilience Funding, Financing, and Implementation Strategies:  
The Usual Suspects and Non-Traditional Opportunities  
**Aaron Henderson**, *Arcadis* ([aaron.henderson@arcadis.com](mailto:aaron.henderson@arcadis.com))

**Rachel Bradley**, Arcadis

4:00 PM – 4:30 PM

A Case Study for Funding Water Infrastructure Projects  
**David Goldwater**, *Stantec* ([david.goldwater@stantec.com](mailto:david.goldwater@stantec.com))

4:30 PM – 5:00 PM

What's It Worth to You?

An Analysis of WSSC Water's Water Treatment Residuals

**Monty Simon**, *Johnson, Mirmiran and Thompson* ([msimon@jmt.com](mailto:msimon@jmt.com))

*Malcolm Taylor*, WSSC Water

## 205–206 • WATER SYSTEM INFRASTRUCTURE

8:30 AM – 9:00 AM

What Could Go Wrong?

Lessons Learned from Trenchless Water/Wastewater Installations

**James Parkes**, *Schnabel Engineering* ([jparkes@schnabel-eng.com](mailto:jparkes@schnabel-eng.com))

# TECHNICAL PROGRAM SCHEDULE

## WEDNESDAY, AUGUST 31, 2022

Speakers' names in bold italics, Co-speakers' names in bold, Co-authors' names in italics.

### 205–206 • WATER SYSTEM INFRASTRUCTURE (CONTINUED)

9:00 AM – 9:30 AM

Trigger-Based Distribution System Master Planning

**Laura Khouvilay, Carollo Engineers** (*lkhouvilay@carollo.com*)

9:30 AM – 10:00 AM

Lessons Learned from Implementation of DC Water Digital Twin

**Alireza Parhami, DC Water** (*alireza.parhami@dcwater.com*)

1:00 PM – 1:30 PM

Dam Design Value Engineering Approaches –

Applying the Latest Science to Address Spillway Capacity

**Kate Naughton, Hazen and Sawyer** (*knaughton@hazenandsawyer.com*)

**Jeremy Hise, Hazen and Sawyer**

*Nancy Hausrath, City of Hagerstown*

*Bill Luhn, City of Hagerstown*

*Kellen Douglas, City of Hagerstown*

1:30 PM – 2:00 PM

1 Million Gallons of Drinking Water Storage

Replacement for the Town of Middletown

**Nick Lewis, Gannett Fleming** (*nlewis@gfnet.com*)

**Bruce Carbaugh, Town of Middletown**

2:00 PM – 2:30 PM

Dam Removals – Maryland Lessons Learned and Future Applications

**Jeremy Hise, Hazen and Sawyer** (*jhise@hazenandsawyer.com*)

**Jonathon Kusa, Inter-Fluve, Inc.**

3:30 PM – 4:00 PM

Mining for Lead: Lead and Copper Rule Revision Inventory

**Mark Zito, Trinnex** (*zitoma@cdmsmith.com*)

4:00 PM – 4:30 PM

Impact of Flow Rate and Water Age on Opportunistic Pathogen Growth:

Implications for Water Conservation, Fixture Design & Policy

**Sarah Busch, Carollo Engineers** (*sbusch@carollo.com*)

4:30 PM – 5:00 PM

Rehabilitation Innovation & Historic Preservation

at the City of Baltimore's 40 MGD Guilford Water Pumping Station

**Brian Aylaian, Mott MacDonald** (*brian.aylaian@mottmac.com*)

**Remi Urbonas, City of Baltimore Department of Public Works**

# TECHNICAL PROGRAM SCHEDULE

WEDNESDAY, AUGUST 31, 2022

Speakers' names in bold italics, Co-speakers' names in bold, Co-authors' names in italics.

## 215 • WASTEWATER TREATMENT & SOLIDS PROCESSING

8:30 AM – 9:00 AM

Modeling for Success: Upgrading Lagoon Based Treatment Systems to Meet More Stringent Limits for BOD, TSS & Nutrient Removal

**Mark Rasor**, *Lemna Environmental Technologies, Inc.*

*(mrasor@lemna.com)*

9:00 AM – 9:30 AM

Primary Settling Tank Capacity and Performance Assessment at AlexRenew

**Thor Young**, *GHD* (*thor.young@ghd.com*)

**Felicia Glapion**, *AlexRenew*

**Nick Hatala**, *GHD*

9:30 AM – 10:00 AM

Case Studies of Secondary Biological Treatment Systems

Meeting Full Enhanced Nutrient Removal Limits

**Manuel de los Santos**, *Aqua-Aerobic Systems, Inc.*

*(mdelossantos@aqua-aerobic.com)*

1:00 PM – 1:30 PM

Achieving Enhanced Nutrient Removal with AquaNereda® Aerobic Granular Sludge

**Joe Tardio**, *Aqua-Aerobic Systems, Inc.* (*jtardio@aqua-aerobic.com*)

1:30 PM – 2:00 PM

Is It Possible to Remove PFAS from Biosolids?

A Review of Different PFAS Removal Technologies

**Sebastian Smoot**, *HDR* (*sebastian.smoot@hdrinc.com*)

**Ramola Vaidya**, *HDR*

2:00 PM – 2:30 PM

Mitigating the impacts of Volatile Market Conditions through Progressive Design-Build

**Laura Simmers**, *PC Construction* (*lsimmers@pcconstruction.com*)

**Joe Uglevich**, *Stantec*

# TECHNICAL PROGRAM SCHEDULE

WEDNESDAY, AUGUST 31, 2022

Speakers' names in bold italics, Co-speakers' names in bold, Co-authors' names in italics.

## 215 • WASTEWATER TREATMENT & SOLIDS PROCESSING (CONTINUED)

3:30 PM – 4:00 PM

A Full-scale Demonstration of ABAC Results in Energy & Carbon-efficient BNR via SND and Post-denitrification with Internally Stored Carbon

***Pusker Regmi, Brown and Caldwell*** ([pregmi@brwnncald.com](mailto:pregmi@brwnncald.com))

**Marty Johnson**, WSSC Water

*Caroline Nguyen*, WSSC Water

*Ahmed Al-Omari*, Brown and Caldwell

4:00 PM – 4:30 PM

Rehabilitation of Biosolids Drying System to Regain Capacity

***Liie Hill, Jacobs Engineering*** ([liie.hill@jacobs.com](mailto:liie.hill@jacobs.com))

*Dan Prather*, Jacobs Engineering

*Joe Nattress*, Jacobs Engineering

4:30 PM – 5:00 PM

Cooking Without Gas: Reducing Sludge Management Costs using THP in Plants without Anaerobic Digestion

***Jonathan Liberzon, Tomorrow Water*** ([jl@bkt21.com](mailto:jl@bkt21.com))

**Mohamed Abdelbadie**, Tomorrow Water

## 217 • STORMWATER

8:30 AM – 9:00 AM

MS4 TMDL Program Management:

Case studies in Planning to Implementation for Project Portfolios

***Danielle Hankins, RK&K*** ([dhankins@rkk.com](mailto:dhankins@rkk.com))

## 217 • ENGINEERING ETHICS

9:00 AM – 10:00 AM

Overcoming Data Inequities to Improve Outcomes

***Raanan Webb, BlueConduit*** ([raanan@blueconduit.com](mailto:raanan@blueconduit.com))

# TECHNICAL PROGRAM SCHEDULE

WEDNESDAY, AUGUST 31, 2022

Speakers' names in bold italics, Co-speakers' names in bold, Co-authors' names in italics.

## 217 • STORMWATER (CONTINUED)

1:00 PM – 1:30 PM

Innovative Methods to Select & Implement Green Stormwater Infrastructure Improvements within Large Watershed Areas – Case Study  
***Nirali Desai, Arcadis US Inc. (nirali.desai@arcadis.com)***

**Michael Moscariello, Arcadis US Inc.**

*Jo-Elle Burgard, District Department of Transportation*

1:30 PM – 2:00 PM

Extreme Makeover, Sediment Basins Edition: Conversion to Submerged Gravel Wetlands at Fullerton

***Chenyuwei Guan, Gannett Fleming (cguan@gfnet.com)***

2:00 PM – 2:30 PM

Glenmont Forest Green Streets: The Challenges and Success of Stormwater Retrofits in the Urban Environment

***Kristianne Sandoval, RK&K (ksandoval@rkk.com)***

**Lucia Noya, RK&K**

3:30 PM – 4:00 PM

The Application of Geographic Information Systems (GIS) in Storm Water Management

***Dishon Kimani, Morgan State University (dikim1@morgan.edu)***

**Donghee Kang, Morgan State University**

4:00 PM – 4:30 PM

The Role of Community-Enabled Lifecycle Analysis of Storm Water Infrastructure Costs (CLASIC)

***Dishon Kimani, Morgan State University (dikim1@morgan.edu)***

**Donghee Kang, Morgan State University**

4:30 PM – 5:00 PM

Challenges and Lessons Learned in Developing a Stormwater Fee

***Vanessa Nedrick, Remington & Vernick Engineers (RVE)***

***(Vanessa.Nedrick@rve.com)***

# TECHNICAL PROGRAM SCHEDULE

## THURSDAY, SEPTEMBER 1, 2022

Speakers' names in bold italics, Co-speakers' names in bold, Co-authors' names in italics.

### 201-202 • ASSET MANAGEMENT

8:30 AM – 9:00 AM

Biosolids Facilities Planning – Using Asset Management and Adaptive Pathways Planning for Milwaukee MSD

***Gage Muckleroy, GHD Inc. (gage.muckleroy@ghd.com)***

9:00 AM – 9:30 AM

Ensuring Critical Asset Optimization and Uptime using Artificial Intelligence

***Kevin Flis, Xylem (kevin.flis@xylem.com)***

**David Dolphin, Elmodis**

9:30 AM – 10:00 AM

Utilizing Mobile, Battery-operated Cellular Data Recorders with a Map-centric Approach to Municipal Water & Sanitary Sewer System Monitoring

***Russell Vrhovac, Duncan Parnell Inc.***

***(russell.vrhovac@duncan-parnell.com)***

### 201-202 • SYSTEM OPERATIONS/MAINTENANCE

11:00 AM – 11:30 AM

Corrosion Test Stations: Repair and Usage

***Andrew Fuller, Black & Veatch (fullera@bv.com)***

11:30 AM – 12:00 PM

Water Quality Hurdles – Case Study in Balancing Fire Protection with Water Quality for Nitrification Control

***Jeremy Hise, Hazen and Sawyer (jhise@hazenandsawyer.com)***

**Meric Selbes, Hazen and Sawyer**

***Nancy Hausrath, City of Hagerstown***

***Bill Luhn, City of Hagerstown***

***Kellen Douglas, City of Hagerstown***

12:00 PM – 12:30 PM

Impact of Covid-19 Pandemic Years in Maintaining Water Quality throughout the Washington D.C. Distribution System

***Anjuman Islam, Washington D.C. Water and Sewer Authority***

***(anjuman.islam@dcwater.com)***

**Yadav Timilsina, Washington D.C. Water and Sewer Authority**

# TECHNICAL PROGRAM SCHEDULE

THURSDAY, SEPTEMBER 1, 2022

Speakers' names in bold italics, Co-speakers' names in bold, Co-authors' names in italics.

## 201-202 • SYSTEM OPERATIONS/MAINTENANCE (CONTINUED)

2:00 PM – 2:30 PM

Screening Failure at an Aging Wastewater Pump Station –  
Expedited Design and Construction for Emergency Repairs

***Badana Mohamadi, HDR Engineering (badana.mohamadi@hdrinc.com)***

*Thomas Grala, Fairfax County*

*Jason Kerns, HDR Engineering*

2:30 PM – 3:00 PM

Planning, Design, and Data Management

Considerations for Plant Optimization

***Christine deBarbadillo, Black & Veatch (deBarbadilloC@bv.com)***

**Gary Hunter, Black & Veatch**

*John Tattersall, Black & Veatch*

*Ben Cownie, Black & Veatch*

3:00 PM – 3:30 PM

Nutrient Management within a Bubble Permit

***Ned Talbot, Ramboll (gt0197c@yahoo.com)***

**Karthik Manchala, Ramboll**

*Bill Meinert, Ramboll*

4:00 PM – 4:30 PM

Practical Ways to Keep Your SCADA System Secure –

An Overview of Cyber-Security Standards, Best Practices & Technologies

***Tim Donaldson, VTScada by Trihedral Engineering***

*(tim.donaldson@trihedral.com)*

4:30 PM – 5:00 PM

Smart Operations and Maintenance: Human versus AI-based Monitoring  
in Water and Wastewater Treatment Plants

***Andrew Chastain-Howley, Black & Veatch (chastain-howleya@bv.com)***

5:00 PM – 5:30 PM

Utilizing GIS to Eliminate Confusion and

Automate the Customer Notification Process

***Joe DeLuca, EBA Engineering (joseph.deluca@ebaengineering.com)***

**Mike Mattaini, EBA Engineering**



# TECHNICAL PROGRAM SCHEDULE

## THURSDAY, SEPTEMBER 1, 2022

Speakers' names in bold italics, Co-speakers' names in bold, Co-authors' names in italics.

### 203–204 • UTILITY MANAGEMENT

8:30 AM – 9:00 AM

Renewable Power and Microgrid Assessment  
for a Water Reclamation Facility in Anne Arundel County  
***Miranda Santucci, Jacobs*** ([miranda.santucci@jacobs.com](mailto:miranda.santucci@jacobs.com))  
*Maribel Moore, Anne Arundel County Dept. of Public Works*  
*Daniel Ingold, Jacobs*  
*Megan Smith, Jacobs*

9:00 AM – 9:30 AM

Can Backup Generator Installations at Wastewater Treatment Facilities  
Generate Revenue? A Case Study  
***Kanu Shah, Shah and Associates, Inc.*** ([kshah@shahpe.com](mailto:kshah@shahpe.com))  
**Martin Tomren, Shah and Associates, Inc.**

9:30 AM – 10:00 AM

Engaging the Team – Collaborative Risk Development and Tracking  
***Stephanie Spalding, HDR*** ([stephanie.spalding@hdrinc.com](mailto:stephanie.spalding@hdrinc.com))  
*Chris Behr, HDR*

11:00 AM – 11:30 AM

Harnessing the Power of Data: Using Key Performance Indicators  
and Benchmarks to Optimize Your Operations  
***Jay Sakai, 4Tenets Consulting, LLC*** ([jsakai@fourtenets.com](mailto:jsakai@fourtenets.com))  
**Michael Maker, Newgen Strategies & Solutions**

11:30 AM – 12:00 PM

Visualization Techniques to Improve Workforce Efficiency  
***Andrew Burton, Carollo Engineers*** ([aburton@carollo.com](mailto:aburton@carollo.com))  
**Emily Keller, Carollo Engineers**

12:00 PM – 12:30 PM

Proactive Maintenance Planning using Robotics, AI and Neural Networks  
***LaShema Burrell, DC Water*** ([lburrell@dcwater.com](mailto:lburrell@dcwater.com))  
**Nichol Bell Sowell, DC Water**

# TECHNICAL PROGRAM SCHEDULE

THURSDAY, SEPTEMBER 1, 2022

Speakers' names in bold italics, Co-speakers' names in bold, Co-authors' names in italics.

## 203–204 • WATER TREATMENT

2:00 PM – 2:30 PM

Lead and Copper Rule Revisions –  
Case Studies on Ways to Simplify Compliance  
**Emily Tummons, Black & Veatch** ([tummons@bv.com](mailto:tummons@bv.com))

2:30 PM – 3:00 PM

Surveying Costs on the PFAS Roadmap  
**Dustin Mobley, Black & Veatch** ([mobleydr@bv.com](mailto:mobleydr@bv.com))  
**Paul Hargette, Black & Veatch**

3:00 PM – 3:30 PM

Let's Break Down Forever Chemicals:  
Insights from Design/Build Approach to Provide PFAS Treatment  
**Daniel Jeon, Gannett Fleming, Inc.** ([djeon@gfnet.com](mailto:djeon@gfnet.com))

4:00 PM – 4:30 PM

Optimization of the Residuals Handling Process  
at the Patuxent Water Filtration Plant  
**Robert Nally, WSSC Water** ([robert.nally@wsscwater.com](mailto:robert.nally@wsscwater.com))  
**Priscilla To, WSSC Water**  
**Mark Proctor, WSSC Water**

4:30 PM – 5:00 PM

Fast-track Collaborative Design of a Membrane Water Treatment Plant  
**Mathew Roder, Arcadis** ([mathew.roder@arcadis.com](mailto:mathew.roder@arcadis.com))

5:00 PM – 5:30 PM

UCMR5 – A Primer: What to Expect, When Does it Start, and Who Is Affected  
**Ron Milke, Eurofins Eaton Analytical** ([ronald.milke@eurofinset.com](mailto:ronald.milke@eurofinset.com))



# TECHNICAL PROGRAM SCHEDULE

THURSDAY, SEPTEMBER 1, 2022

Speakers' names in bold italics, Co-speakers' names in bold, Co-authors' names in italics.

## 205–206 • WATER SYSTEM INFRASTRUCTURE

8:30 AM – 9:00 AM

Choosing the Right Rehabilitation Technique for Water Mains

**Steve Soldati**, *Aegion (ssoldati@aegion.com)*

9:00 AM – 9:30 AM

Dealing with Failure

**Scott Jauch**, *HDR (scott.jauch@hdrinc.com)*

**Susan Donnally**, *HDR*

9:30 AM – 10:00 AM

From Concept to Reality: Improving the Integrity of Service Reinstatement in CIPP Lined Pressure Pipes

**Steve Soldati**, *Aegion (ssoldati@aegion.com)*

## 205–206 • SUSTAINABILITY/RESILIENCY

11:00 AM – 11:30 AM

Preparing the Wastewater Treatment Facilities

Operations for Extreme Weather Events

**Velmurugan Subramanian**, *Atkins (vel.subramanian@atkinglobal.com)*

11:30 AM – 12:00 PM

Machine-Learning Aeration Control for Energy Efficient Secondary Treatment

**Tanja Rauch-Williams**, *Carollo Engineers (trauch-williams@carollo.com)*

**Paul Bassette**, *Carollo Engineers*

*Natalie Beach*, *Carollo Engineers*

*Sudhir Murthy*, *New Hub*

12:00 PM – 12:30 PM

Resilience through Simulation:

Using Digital Twins to Prepare for Climate Change

**Stephen Bourne**, *Atkins (stephen.bourne@atkinglobal.com)*

2:00 PM – 2:30 PM

Offsetting the Grid and Providing Backup Power

to Maintain Critical Operations for the Frederick County WWTP

**Alison Barton**, *EA Engineering, Science, and Technology, Inc., PBC.*  
(*abarton@eaest.com*)

# TECHNICAL PROGRAM SCHEDULE

## THURSDAY, SEPTEMBER 1, 2022

Speakers' names in bold italics, Co-speakers' names in bold, Co-authors' names in italics.

### 205-206 • SUSTAINABILITY/RESILIENCY (CONTINUED)

2:30 PM – 3:00 PM

Mapping Thermal Energy Exchange Potential from  
Urban Colorado and Suburban Maryland Collection Systems

***Paula Sanjines, Jacobs*** ([paula.sanjines@jacobs.com](mailto:paula.sanjines@jacobs.com))

**Miranda Santucci, Jacobs**

***Robert Taylor, WSSC Water***

***Peter Mulvaney, Jacobs***

***TJ Bolen, Jacobs***

3:00 PM – 3:30 PM

Award Winning Efficiency – CHP for the Piscataway Bioenergy Project

***Robert Wierzbicki, PC Construction*** ([rwierzbicki@pcconstruction.com](mailto:rwierzbicki@pcconstruction.com))

4:00 PM – 4:30 PM

From Floyd to Florence: Impacts of Extreme Hurricane  
Events on the Tar-Pamlico River Basin, North Carolina

***Tamara Battle, Morgan State University*** ([tabat5@morgan.edu](mailto:tabat5@morgan.edu))

***Dong Hee Kang, Morgan State University***

4:30 PM – 5:00 PM

Adapting Collection System Infrastructure to Changing  
Flood Vulnerabilities – Eastern Seaboard Case Studies

***Sara Greenberg, GHD*** ([sara.greenberg@ghd.com](mailto:sara.greenberg@ghd.com))

**Anastasia Rudenko, GHD**

***Marc Drainville, GHD***

5:00 PM – 5:30 PM

Resilient Stormwater Pump Station Systems in Virginia Beach

***Glenn Bottomley, WSP, USA Inc.*** ([glenn.bottomley@wsp.com](mailto:glenn.bottomley@wsp.com))



# TECHNICAL PROGRAM SCHEDULE

THURSDAY, SEPTEMBER 1, 2022

Speakers' names in bold italics, Co-speakers' names in bold, Co-authors' names in italics.

## 215 • WASTEWATER TREATMENT & SOLIDS PROCESSING

8:30 AM – 9:00 AM

Degreasing the Pipes: Effectively Processing FOG at the Central WPCF

***Kelly Baxter, Mott MacDonald (kelly.baxter@mottmac.com)***

*William Suchodolski, Ocean County Utilities Authority*

*Diana Rodriguez, Ocean County Utilities Authority*

*Rachel Lew, Mott MacDonald*

9:00 AM – 9:30 AM

Collaborative, Trigger-Based Biosolids Masterplan for

Seven-Facility Municipality in the Chesapeake Bay Watershed

***Micah Blate, Hazen and Sawyer (mblate@hazenandsawyer.com)***

**Zayneb Mohamed, Hazen and Sawyer**

*Micah Blate, Hazen and Sawyer*

9:30 AM – 10:00 AM

Two-Stage Partial-Nitritation/Anammox Process Demonstrates

Stable & Efficient Treatment of High-Strength Industrial Digestate

***Jonathan Liberzon, Tomorrow Water (jl@bkt21.com)***

*David Rhu, Tomorrow Water*

11:00 AM – 11:30 AM

Cleanest Effluent in the State?

***Corey McCarthy, American Contracting & Environmental Services, Inc.***

***(corey.mccarthy@aceservinc.com)***

**Ellen Frketic, Maryland Environmental Service**

*Dan String, KCI Technologies*

*Corey McCarthy, ACE*

11:30 AM – 12:00 PM

Upgrades to Aeration System at 64 MGD Facility to

Optimize Process Aeration Control and Reduce Process Airflow

***Kristi Perri, PE, Brown and Caldwell (kperri@brwncald.com)***

*Mark Miller, PhD, PE, Brown and Caldwell*

*Grant Sharpe, PE, Brown and Caldwell*

*Kit Eller, Charlotte Water*

# TECHNICAL PROGRAM SCHEDULE

THURSDAY, SEPTEMBER 1, 2022

Speakers' names in bold italics, Co-speakers' names in bold, Co-authors' names in italics.

## 215 • WASTEWATER TREATMENT & SOLIDS PROCESSING (CONTINUED)

12:00 PM – 12:30 PM

Thermal Hydrolysis (THP) – Commissioning Experiences and Considerations

**Gregory Knight, Black & Veatch** ([knightgj@bv.com](mailto:knightgj@bv.com))

*Engin Guven, Black & Veatch*

*Chris Debarbadillo, Black & Veatch*

2:00 PM – 2:30 PM

Ballasted Flocculation and Clarification  
for Ultra-low Total Phosphorus Reduction

**Joshua Fox, Herbert, Rowland & Grubic, Inc.** ([jfox@hrg-inc.com](mailto:jfox@hrg-inc.com))

2:30 PM – 3:00 PM

Augmenting Anaerobic Digestion Performance  
with Recuperative Thickening in Dubai

**Dr. Dian Zhang, Stantec** ([chengyan.zhang@stantec.com](mailto:chengyan.zhang@stantec.com))

3:00 PM – 3:30 PM

Upgrade and Rehabilitation of Two Headworks Facilities in Southern Delaware

**Steven Clark, GHD** ([steven.clark@ghd.com](mailto:steven.clark@ghd.com))

4:00 PM – 4:30 PM

Using Multiple Treatment Stages to Provide More  
Thorough Odor Control & Reduction in Operating Costs

**Michael Busch, Anua** ([michael.busch@anuainternational.com](mailto:michael.busch@anuainternational.com))

4:30 PM – 5:00 PM

Sludge Densification: Emerging and Efficient Way  
to Look at Biological Nutrient Removal Treatment

**Raj Chavan, Atkins, North America** ([raj.chavan@atkinglobal.com](mailto:raj.chavan@atkinglobal.com))

5:00 PM – 5:30 PM

Coagulants and Polymers – Fundamentals of Clarification and Dewatering

**Yong Kim, UGSI Solutions, Inc.** ([ykim@ugsicorp.com](mailto:ykim@ugsicorp.com))

# TECHNICAL PROGRAM SCHEDULE

THURSDAY, SEPTEMBER 1, 2022

Speakers' names in bold italics, Co-speakers' names in bold, Co-authors' names in italics.

## 217 • WASTEWATER COLLECTION SYSTEMS

8:30 AM – 9:00 AM

Rehabilitating a Century-old Sewer in an Environmentally Sensitive Area with Permissions from Multiple Agencies in Washington, D.C.

***Burak Kaynak***, DC Water (*burak.kaynak@dcwater.com*)

**William Elledge**, DC Water

9:00 AM – 9:30 AM

Flexibility Drives Micro-tunneling Success

***Angela Cornish***, Baltimore City, DPW, Office of Engineering & Construction (*angela.cornish@baltimorecity.gov*)

**Steven Pickel**, Johnson Mirmiran & Thompson

***Christopher Peake***, Hazen & Sawyer

9:30 AM – 10:00 AM

Urban Stream and Sewer Improvements in Parallel... A Challenging Project

***Angela Cornish***, Baltimore City, DPW, Office of Engineering & Construction (*angela.cornish@baltimorecity.gov*)

**Christopher Peake**, Hazen & Sawyer

***Dustin Shearer***, Hazen & Sawyer

11:00 AM – 11:30 AM

Baffled?! Solving Pump Air Binding with Out of Box Thinking Process

***Paul Lee***, Wallace Montgomery & Associates, LLP (*plee@wallacemontgomery.com*)

**Parimal Bachubhay**, Anne Arundel County (CBRE/Heery)

11:30 AM – 12:00 PM

Collection System Odor Abatement for Anne Arundel County

***Richard Pope***, Hazen and Sawyer (*rpope@hazenandsawyer.com*)

**Charles Portner**, Hazen and Sawyer

12:00 PM – 12:30 PM

Sustainable Energy Solutions for Wastewater

Pumping Stations in Anne Arundel County, MD

***Tim Hartwell***, Hartwell Engineering (*thartwell@hartwell-eng.com*)

**Sunil Dewan**, CBRE/Anne Arundel County DPW

# TECHNICAL PROGRAM SCHEDULE

## THURSDAY, SEPTEMBER 1, 2022

Speakers' names in bold italics, Co-speakers' names in bold, Co-authors' names in italics.

### 217 • WASTEWATER COLLECTION SYSTEMS (CONTINUED)

2:00 PM – 2:30 PM

Using Transmissive Acoustics to Prioritize  
Sewer Cleaning and Reduce SSOs in Rockville, MD  
**Brian Plymale**, *Dept. of Public Works, City of Rockville*  
(*bplymale@rockvillemd.gov*)  
**Walt Woodard**, InfoSense, Inc.

2:30 PM – 3:00 PM

How to Find the Sweet Spot for Sewer Cleaning Frequency  
**Jennifer Steffens**, *Suez Smart and Environmental Solutions*  
(*jennifer.steffens@suez.com*)

3:00 PM – 3:30 PM

Six Years of SL-RAT Data and What Has Baltimore County Learned?  
**Paul Sayan**, *WSP* (*paul.sayan@wsp.com*)  
**Rodney Turner**, Baltimore County Government, Dept. of Public Works

4:00 PM – 4:30 PM

Large Diameter Pipe and Tunnel Rehabilitation  
Challenges on the Potomac Interceptor  
**William Elledge**, *DC Water* (*william.elledge@dcwater.com*)  
**Pubudu Ranasinghe**, DC Water  
**Pono Hanson**, *Brown and Caldwell*

4:30 PM – 5:00 PM

Box-Tunneling Saves the Day from Utility Congestion  
**Kyle Stewart**, *DC Water* (*kyle.stewart@dcwater.com*)  
**Tayo Olatunji**, DC Water  
**Adam Dramani**, DC Water  
**Mohammad Huq**, DC Water  
**Tsedale Berhanu**, DC Water

5:00 PM – 5:30 PM

Baltimore City Dept. of Public Works  
Accelerated Design Project Delivery Method  
**Mohammed Rahman**, *Baltimore City DPW*  
(*mohammed.rahman@baltimorecity.gov*)  
**Yosef Kebede**, Baltimore City DPW



# TECHNICAL PROGRAM SCHEDULE

## FRIDAY, SEPTEMBER 2, 2022

Speakers' names in bold italics, Co-speakers' names in bold, Co-authors' names in italics.

### 201–202 • ASSET MANAGEMENT

9:00 AM – 9:30 AM

Minimizing Risk during SmartBall Leak Detection Inspections

***Osai Robinson, Black and Veatch*** ([robinsono@bv.com](mailto:robinsono@bv.com))

**Ed Carpenetti, Black and Veatch**

9:30 AM – 10:00 AM

WSSC Water Consolidated Laboratory –

“Easily Visualize your Building Assets Using a Digital Twin”

***Timothy King, CDM Smith*** ([kingtl@cdmsmith.com](mailto:kingtl@cdmsmith.com))

**Julio Hernandez, CDM Smith**

### 201–202 • WASTEWATER TREATMENT & SOLIDS PROCESSING

10:15 AM – 10:45 AM

Continuous Flow Aerobic Granulation:

Revisiting Biological Aggregates for Process Intensification

***Pusker Regmi, Brown and Caldwell*** ([pregmi@brwnncald.com](mailto:pregmi@brwnncald.com))

***Jose Jimenez, Brown and Caldwell***

***Ahmed Al-Omari, Brown and Caldwell***

10:45 AM – 11:15 AM

Lessons Learned: It Pays to Pause

***Andrew Freitas, Greeley and Hansen*** ([afreitas@greeley-hansen.com](mailto:afreitas@greeley-hansen.com))

11:15 AM – 11:45 AM

Transitioning a Large Wastewater Treatment Facility  
from Local Control to Plant-wide SCADA System

***Kelvin George, GHD*** ([kelvin.george@ghd.com](mailto:kelvin.george@ghd.com))

**Bob Cardinal, GHD**

### 203–204 • UTILITY MANAGEMENT

9:00 AM – 9:30 AM

Lessons Learned: Managing Large Scale

Progressive Design Build Water Projects

***Michael McWhirter, Stantec*** ([michael.mcwhirter@stantec.com](mailto:michael.mcwhirter@stantec.com))

# TECHNICAL PROGRAM SCHEDULE

## FRIDAY, SEPTEMBER 2, 2022

Speakers' names in bold italics, Co-speakers' names in bold, Co-authors' names in italics.

### 203–204 • UTILITY MANAGEMENT (CONTINUED)

9:30 AM – 10:00 AM

CMAR Delivery Enhances Design of New Raw Wastewater Pump Station at the Noman M. Cole Jr. Pollution Control Plant

**Beth Blair, Black & Veatch** (*blaire@bv.com*)

**Mohsen Shahramfar, Fairfax County WDCD**

*Sayed Ridwan, Clark Construction Group*

10:15 AM – 10:45 AM

The Innovation Journey at WSSC Water – Mapping Out Success!

**Jason Carter, Arcadis, Inc.** (*jason.carter@arcadis.com*)

**Sara Titus, WSSC Water**

*Keith Tyson, WSSC Water*

*Todd Allen, WSSC Water*

*Joanna Brunner, Arcadis*

10:45 AM – 11:15 AM

Cybersecurity Infrastructure: A Must for Water Utilities of the 21st Century

**Adi Karisik, Jacobs Engineering** (*adi.karisik@jacobs.com*)

**Glen Price, Jacobs Engineering**

*Sielen Namdar, Cisco*

*Rocky Smith, Cisco*

11:15 AM – 11:45 AM

S-O-S, Please, Somebody Help Me: Baltimore City's Sewage-Onsite-Support Pilot Program Helping Residents on Basement Backups

**Mohammed Rahman, Baltimore City DPW**

(*mohammed.rahman@baltimorecity.gov*)

**Vince Pompa, Baltimore City DPW**

### 205–206 • SUSTAINABILITY/RESILIENCY

9:00 AM – 9:30 AM

The Journey to Silver: Envision Sustainability Award at the Little Patuxent Water Reclamation Plant

**Kelsey Kenel, HDR** (*kelsey.kenel@hdrinc.com*)

**Josh Gliptis, Howard County Dept. of Public Works**

*Christina Alito, HDR*

*Gabrielle Ferro, Clark Construction*

# TECHNICAL PROGRAM SCHEDULE

FRIDAY, SEPTEMBER 2, 2022

Speakers' names in bold italics, Co-speakers' names in bold, Co-authors' names in italics.

## 205–206 • SUSTAINABILITY/RESILIENCY (CONTINUED)

9:30 AM – 10:00 AM

WSSC Water Consolidated Laboratory –

“How to Deliver a Sustainable Water Quality Lab”

**Timothy King**, CDM Smith ([kingtl@cdmsmith.com](mailto:kingtl@cdmsmith.com))

10:15 AM – 10:45 AM

CMAR and Early Contractor Involvement

Puts Critical Infrastructure Project on Path to Success

**Alan Parent**, PC Construction ([aparent@pcconstruction.com](mailto:aparent@pcconstruction.com))

10:45 AM – 11:15 AM

Building Back a Resilient & Sustainable Wastewater System Using  
Emergency Management Funding to Maximize the Benefit-Cost Ratio

**Jeff Pelletier**, Atkins ([jeffrey.pelletier@atkinsglobal.com](mailto:jeffrey.pelletier@atkinsglobal.com))

**Fazle Rabbi**, Houston Water

11:15 AM – 11:45 AM

Why the KISS Principle Is the Right Solution  
for Flood Protection at Leonardtown WWTP

**Ashton Rogers**, GHD ([ashton.rogers@ghd.com](mailto:ashton.rogers@ghd.com))

## 215 • WASTEWATER TREATMENT & SOLIDS PROCESSING

9:00 AM – 9:30 AM

Business Case Analysis for Biogas Utilization at Morris Forman WWTP

**Chengyan Zhang**, Stantec ([chengyan.zhang@stantec.com](mailto:chengyan.zhang@stantec.com))

**Charlie Alex**, Stantec

**Michael McWhirter**, Stantec

**Dian Zhang**, Stantec

9:30 AM – 10:00 AM

Alternate Delivery of a Combined Heat/Power System –  
How to Stay Away from Hot Water!

**Bryan Lennon**, City of Wilmington ([bplennon@wilmingtonde.gov](mailto:bplennon@wilmingtonde.gov))

**Joe Nattress**, Jacobs

10:15 AM – 10:45 AM

Biosolids Management Strategy: A Shifting Paradigm –  
(A Step towards Zero-Waste)

**Tyler Hewitt**, Atkins, North America ([tyler.hewitt@atkinsglobal.com](mailto:tyler.hewitt@atkinsglobal.com))

**Raj Chavan**, Atkins North America

# TECHNICAL PROGRAM SCHEDULE

## FRIDAY, SEPTEMBER 2, 2022

Speakers' names in bold italics, Co-speakers' names in bold, Co-authors' names in italics.

### 215 • WASTEWATER TREATMENT & SOLIDS PROCESSING (CONTINUED)

10:45 AM – 11:15 AM

Headworks Facilities Improvements at the Patapsco WWTP

**Aaron Thomas, Hazen and Sawyer** ([arthomas@hazenandsawyer.com](mailto:arthomas@hazenandsawyer.com))

**Mike Hallman**, Baltimore City

*Per Struck, Whitman, Requardt & Associates*

11:15 AM – 11:45 AM

Sidestream Design with Whole Plant in Mind

**Dian Zhang, Stantec** ([dian.zhang@stantec.com](mailto:dian.zhang@stantec.com))

*Michael McWhirter, Stantec*

*Gregory Piskosz, Stantec*

*Timothy Muirhead, Veolia*

### 217 • ENGINEERING ETHICS

9:00 AM – 10:00 AM

Ethical Considerations in Intellectual Property

**Clifton McCann, Thompson Hine LLP** ([cemccann@thompsonhine.com](mailto:cemccann@thompsonhine.com))

### 217 • WASTEWATER COLLECTION SYSTEMS

10:15 AM – 10:45 AM

Awakening the Sleeping Giant... Inspection of DC Water's

66-inch/96-inch Anacostia Force Main Gravity Sewer

**Bisrat Abebe, DC Water** ([babebe@dcwater.com](mailto:babebe@dcwater.com))

**Pono Hanson, Brown and Caldwell**

*Sonia Oton, Mott MacDonald*

10:45 AM – 11:15 AM

In the Thick of Things: Measuring In Situ Drywell Can

Thickness to Guide Rehab and Replacement Investments

**Michael Trail, Gannett Fleming** ([mtrail@gfnet.com](mailto:mtrail@gfnet.com))

**Sunil Dewan, Anne Arundel County Dept. of Public Works**

11:15 AM – 11:45 AM

Intermunicipal Coordination to Manage Strategic

Regional Asset Potomac Interceptor (PI) Flow Analysis

**Eric Harold, Carollo Engineers** ([eharold@carollo.com](mailto:eharold@carollo.com))

**Lisa Reynolds, Metropolitan Washington Council of Governments**

*Emily Keller, Carollo Engineers*

*Ramesh Alajangi, Environ-Civil Engineering, Ltd.*

# EXHIBIT HALL LAYOUT



## EXHIBIT HALL HOURS

### Tuesday, August 30

Exhibitor Move-In  
8:00 AM – 6:30 PM

### Wednesday, August 31

7:30 AM – 5:00 PM

### Thursday, September 1

7:30 – 4:00 PM (*New Time!*)

### Thursday, September 1

Exhibitor Move-Out  
4:00 PM – 7:00 PM (*New Time!*)

**\*No entry into the Exhibit Hall without a Conference Badge.**

## EXHIBITOR LIST

Company Name	Booth No.	Company Name	Booth No.	Company Name	Booth No.
A.C.Schultes, Inc.....	52	ASCO Power Technologies		CB&I Storage Tank Solutions LLC .....	107
ADS LLC.....	103	by Schneider Electric .....	153	Charles Morrow and Associates .....	17, 18
AECOM Technical Services .....	105	ASTERRA.....	161	Chesapeake Environmental Equipment.....	79
Aegion .....	89	Atlantic Machinery, Inc. ....	34	Cla-Val Co. ....	51
AERZEN.....	61	Atlantic Valve & Equipment.....	110	Coastal Sales Company.....	134
Airvac Systems.....	80	Avanti International .....	2	Core and Main .....	86
ALFA LAVAL.....	71	Barton & Loguidice.....	114	Cornell Pump.....	164
Altra Solutions LLC (formerly Sanexen).....	118	BDP .....	31	Coyne Chemical Environmental Services....	129, 130
American Contracting &		Bearon Aquatics.....	141	CUES, Inc. ....	126
Environmental Services, Inc. (Ace).....	108	BGC, Inc.,		Curtis Power Solutions, LLC.....	176
AMERICAN Ductile & Spiralweld Pipe.....	36	Water & Wastewater Services Division.....	132	Davis, Bowen & Friedel, Inc.....	93
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AMES, Inc. – Barnes Pump.....	54	Bio-Clean Engineering, LLC .....	87	Delon Hampton & Associates, Chartered.....	3
AMES, Inc. – Industrial Flow Solutions .....	55	Bowen Engineering .....	115	Denali Water Solutions, LLC.....	44
Anua International, Kusters Water,		Buchart Horn .....	184	DeNora UV Disinfection .....	81
BCR Environmental.....	144	Bulldog Diving, Inc.....	160	Design Plastic Systems .....	142

# EXHIBITORS

Company Name	Booth No.	Company Name	Booth No.	Company Name	Booth No.
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DN Tanks	106, 187	Kershner Environmental Technologies, LLC	148	Safeware Inc.	150
Ductile Iron Pipe Research Association	124	Keystone Engineering Group, Inc.	143	Sandblast Solutions Inc.	84
Duke's Root Control, Inc.	10	Kokosing Industrial, Inc.	104	Sekisui SPR Americas, LLC	83
Duncan Parnell	13	KROHNE	169	SewperCoat by Imerys	68
Dutchland Tanks	65	Kubota Membrane USA Corporation	19	Sherwood Logan & Associates	59
EA Engineering, Science, and Technology, Inc., PBC	46	LaBella Associates	102	SmartCover Systems	171
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EBA Engineering, Inc.	53	Longo Electrical-Mechanical Inc.	183	Southern Design & Mechanical	159
ECS Municipal & JDV Equipment Corp.	76	Madewell Products Corporation	116	Spiniello Companies	43
Envirep, Inc.	99	Maryland Chemical Company, Inc.	66	SPX Flow, Continental Blower	145
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Evoqua Water Technologies	20	Maryland Industrial Trucks Inc.	E2, 98	State Chemical	182
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Fluid Solutions, Inc.	47	Miller Energy, Inc.	186	Swan Analytical USA	156
Franklin Miller/Golden Harvest	21	MLK & Assoc.	56, 57, 58	Sydnor Hydro, Inc.	24
Freemire & Associates	39	Mokveld USA, Inc.	172	Synagro Technologies, Inc.	178
Gardner O' Connor	49	Mr. Rehab, Inc.	45	Tank Industry Consultants	27
Garney Construction	42	Mueller Co.	16	Tejji Inc.	180
Geiger Pump & Equipment Co.	4, 5	Mumford-Bjorkman Assoc.	149	The EADS Group	167
George, Miles & Buhr, LLC	123	National Metering Services, Inc.	135	The Sherwin Williams Company	37
GeoTree Solutions	90	Neal Systems (formerly Magyar)	128	Tnemec Company	50
Gwin Dobson & Foreman, Inc.	109	North East Technical Sales, Inc.	69	Trihedral	125
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IXOM	29	Remington & Vernick Engineers	88	Watson Marlow & Boerger, LLC	75
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Kappe Associates, Inc.	30	Riordan Materials	19, 20, 21, 22	XYLEM Water Solutions	60
KCI Technologies	117	RKI Instruments, Inc.	158	Xylem Flygt/Godwin	179
				Zenner USA	106, 114

# BOARD MEMBERS & COMMITTEE CHAIRS

## CSAWWA 2021-2022 OFFICERS & COMMITTEE CHAIRS

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<i>Chesapeake Magazine</i> Vice Chair .....	Andrew Fuller
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Operations – Vice Chair .....	James (JC) Langley
Pipe Tapping .....	Mark Snyder

# BOARD MEMBERS & COMMITTEE CHAIRS

## CSAWWA 2021-2022

### OFFICERS & COMMITTEE CHAIRS (CONTINUED)

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Scholarship Fund Board Chair .....	Aaron Duke
Short Courses Committee.....	Dinesh Bahadurshingh
Short Courses Committee.....	Dave Wilkins
Smaller Systems .....	Jean Holloway
Source Water Protection.....	Clark Howells
Spring Meeting .....	Abbie Smith
Top Ops.....	Anthony Rocco
Tri-Con Committee Voting Member.....	Raj Arora
Tri-Con Committee Voting Member.....	Erica Whorley
Tri-Con Technical Program.....	Sophia Liskovich
Utilities.....	Chein-Chi Chang
Water Distribution .....	James LeMire
Water For People .....	Carrie Kruger
Water Quality.....	Jeremy Hise
Water Quality Vice Chair.....	Nicolle Boulay
Water ReUse (Joint with CWEA) .....	Kelly Landry
Young Professionals Chair .....	Michael Skerritt
Young Professionals Vice Chair .....	Jeffrey Lorensen



# BOARD MEMBERS & COMMITTEE CHAIRS

## CWEA 2021-2022

### OFFICERS & COMMITTEE CHAIRS

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President.....	Gian Cossa
President Elect .....	Cece Nguyen
Vice-President .....	Clarence Beverhoudt
Past President .....	Laura Jo Oakes
WEF Delegate .....	Tim Wolfe
WEF Delegate .....	Ellen Frketic
Trustee – MD .....	Jegnaw Essatu
Trustee – DC .....	Gary Moore
Trustee – DE .....	Rebecca Winer-Skonovd
Treasurer .....	Alan Will
Secretary .....	Cheryl Paulin
CTA Representative .....	Kraig Moodie
Utility Representative .....	Jessica Shiao
Audit Chair .....	Kraig Moodie
Awards Chair .....	Eric Held
Budget & Finance Chair .....	Ellen Frketic
Budget & Finance Vice-Chair .....	Laura Jo Oakes
Business Practices Chair .....	Gary Moore
Bylaws Chair .....	Alan Will
Leadership Series Chair .....	Cece Nguyen
Nominations Chair .....	Cece Nguyen
Publications Chair .....	Aaron Hughes
Publications Co-Chair .....	Chaka Kamran
Publications Co-Chair .....	Islam Khallaf
Sponsorship Chair .....	Mike Cecil
Sponsorship Vice-Chair .....	Cheryl Paulin
Strategic Planning Chair .....	Ted DeBoda
Membership Chair .....	Charles Poskas
Membership Vice-Chair .....	Damion Lampley
Public Communications & Outreach Chair .....	Pamela Rowe
Student Activities Liaison .....	Pono Hanson
Student Activities Co-Chair .....	Chris Overcash
Student Activities Co-Chair .....	Alexis Wingfield
Young Professionals Co-Chair .....	Sanyukta Gokhale
Young Professionals Co-Chair .....	Alana Gildner
Asset Management Chair .....	Steve Tarallo
Asset Management Vice-Chair .....	Bhaumik Hotha

# BOARD MEMBERS & COMMITTEE CHAIRS

## CWEA 2021-2022

### OFFICERS & COMMITTEE CHAIRS (CONTINUED)

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Collection Systems Chair .....	Madeleine Driscoll
Collection Systems Vice-Chair .....	Cheryl Paulin
Fly-In Chair .....	Marlou Gregory
Government Affairs Chair .....	Marlou Gregory
Laboratory Practices Chair .....	David Wildasin
Laboratory Practices Vice-Chair .....	Dale Baker
Plant Operations, Maintenance & Safety Chair .....	Kenrick St. Louis
Plant Operations & Maintenance & Safety Vice-Chair .....	Gregory Stephens
Residuals & Biosolids Management Chair .....	Hahns Hairston
Residuals & Biosolids Management Vice-Chair .....	Mark Ramirez
Spring Meeting Chair .....	Chein-Chi Chang
Spring Meeting Vice-Chair .....	Laura Jo Oakes
Stormwater Chair .....	Jessica Seipp
Stormwater Co-Vice-Chair .....	Alexi Sanchez de Boado
Stormwater Co-Vice-Chair .....	Pratik Desai
Technical Education Chair .....	Matt Zelin
Technical Education Vice-Chair .....	Chike Monwuba
Water Reuse Chair .....	Andrew Kreider
CWEA Short Course Committee.....	Scott Harmon, Bill Farrell, Noelle Anuszkiewicz, Clark Howells, Wayne Reed
CWEA Tri Association Conference Committee Reps .....	Gian Cossa, Clarence Beverhoudt, Pono Hanson, Jegnow Essatu
MDE W/WW Board Liaison .....	Clark Howells
YH20 / Mentorship Co-Chair .....	Kraig Moodie
YH20 / Mentorship Co-Chair .....	Dennis Hasson
Training, Review, & Evaluation Chair .....	Clark Howells
CWEA Executive Administrator .....	Traci Storm

# BOARD MEMBERS & COMMITTEE CHAIRS

## WWOA 2021-2022 OFFICERS & COMMITTEE CHAIRS

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President.....	Cori Cameron
President Elect.....	Scott Getchell
Vice President.....	Bob Johns
Past President .....	Tara Jones
Secretary.....	Kristy McAndrew
Treasurer.....	Mike Emery
Assistant Treasurer.....	Karl Ott
Trustee, Delaware .....	Paul Hignutt
Trustee, District of Columbia .....	Chris Cusic
Trustee, Maryland .....	Jim Robey
Eastern Shore Director .....	Jeff Lambert
Central Section Director.....	Wanda Proctor
Southern Section Director .....	Jessalyn Cockrell
Western Section Director .....	Bruce Darner
Awards Committee Chair .....	Kevin Quinn
By-Laws Committee Chair .....	Karl Ott
Certification Liaison, District of Columbia .....	Gregory Stephens
Certification Liaison, Delaware .....	Sarah Smith
Certification Liaison, Maryland .....	Bruce Darner
<i>Ecoletter</i> Magazine.....	Floyd Johnson
Education Committee Chair .....	Sharita Lyle
Membership .....	Jessalyn Cockrell
Nominations .....	Scott Getchell
Public Relations Committee Chair.....	Winfield McKell
Short Course Committee Chair.....	Winfield McKell
TRE Committee Representative .....	Bill Shreve
Tri-Association Conference .....	Mike Emery
Chesapeake Tri-Association .....	Karl Ott
Website Job Bank .....	Anthony Rocco

# BOARD MEMBERS & COMMITTEE CHAIRS

## CSAWWA 2022-2023 NOMINATED SLATE OF OFFICERS

---

Chair .....	Jay Kirk
Past Chair .....	Ann McPherson
Chair Elect.....	Elford Jackson
Secretary/Treasurer.....	Anna Kazasi
Assistant Secretary/Treasurer .....	Benjamin Thompson
Trustee.....	Annie Ding
Trustee.....	Patrick Burke
Trustee.....	Jeremy Hise
Trustee.....	Abbie Smith

## CWEA 2022-2023 NOMINATIONS FOR OPEN OFFICER POSITIONS

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Vice President .....	Gary Moore
Secretary .....	Cheryl Paulin
DC Trustee .....	Jessica Shiao
WEF Delegate .....	Laura Oakes

## WVWA 2022-2023 SLATE OF OFFICERS

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President .....	Scott Getchell
President Elect .....	Bob Johns
Vice President .....	Bill Shreve
Past President .....	Cori Cameron
Secretary .....	Kristy McAndrew
Treasurer .....	Mike Emery
Assistant Treasurer .....	Karl Ott
Trustee, Delaware .....	Paul Hignutt
Trustee, District of Columbia .....	Chris Cusic
Trustee, Maryland .....	Jim Robey

# HOTEL INFORMATION

## 2022 CONFERENCE HOTELS

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*\*Rates do not include tax*

The Conference Committee has negotiated blocks of rooms at Ocean City Hotels for the 2022 Tri-Association Conference. Conference rates are available Monday, August 29 through Thursday, September 1, 2022 (Friday checkout). Room blocks at each hotel are limited and most close by July 31, 2022, so **make your reservations early**. To obtain the Conference rate, you must call the hotel directly and ask for the "Tri-Association Conference" rate.

### **Aloft Ocean City (host hotel)**

Sold  
Out!

#### **4501 Coastal Hwy**

Miles to Convention Center: 1.1 • Room Type: Hotel

\$249–\$269

888-236-2427

### **Best Western OC Hotel & Suites**

55th Street

Miles to Convention Center: 1.0 • Room Type: Hotel, Suite

\$140–\$160

443-664-4001

[www.bestwesternoceancysuites.com](http://www.bestwesternoceancysuites.com)

### **Best Western Plus (was SeaBay)**

60th Street

Miles to Convention Center: 1.0 • Room Type: Hotel

\$150–\$170

410-524-6100

[www.bestwesternplusoceancity.com](http://www.bestwesternplusoceancity.com)

### **Clarion Resort Fontainebleau**

101st Street

Miles to Convention Center: 3.4 • Room Type: Hotel, Condominium

\$195 (hotel)

800-638-2100

[www.clarionoc.com](http://www.clarionoc.com)

# HOTEL INFORMATION

## 2022 CONFERENCE HOTELS

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*\*Rates do not include tax*

### **Courtyard by Marriott**

15th Street

Miles to Convention Center: 1.7 • Room Type: Hotel

\$325–\$425 (min. 3-night stay)

410-289-5008 • [www.courtyardoceanacity.com](http://www.courtyardoceanacity.com)

### **Dunes Manor Hotel**

28th Street

Miles to Convention Center: 1.0 • Room Type: Hotel

\$229–\$239

410-289-1100; 800-523-2888 • [www.dunesmanor.com](http://www.dunesmanor.com)

### **Grand Hotel**

21st Street

Miles to Convention Center: 1.4 • Room Type: Efficiency

\$146–\$206

410-289-6191; 800-447-6779 • [www.grandhoteloceanacity.com](http://www.grandhoteloceanacity.com)

### **Marriott Residence Inn**

61st Street Bayside

Miles to Convention Center: 1.8 • Room Type: Hotel, Suite

\$249–\$349

410-723-2222; 877-688-8057

### **Princess Bayside**

48th Street

Miles to Convention Center: 0.5 • Room Type: Hotel, Efficiency

\$109–\$159

410-723-2900 • [www.princessbayside.com](http://www.princessbayside.com)

### **Princess Royale**

91st Street

Miles to Convention Center: 3.0 • Room Type: Suite, Condominium

\$229–\$559

410-524-7777; 800-476-9253 • [www.princessroyale.com](http://www.princessroyale.com)

# REGISTRATION INFORMATION

## EARLY BIRD REGISTRATION RATES

Early Bird Registration Ends August 9, 2022 at 11:59 PM, after which time Standard Rates apply. Standard Rates are \$75.00 more than Early Bird rates shown in the table.

EARLY BIRD PRICING					
Registration Options	Member	Certified Operator	Non-Member	Full-Time Student	Retiree
Full Conference: Complete Package	\$330	\$280	\$410	N/A	N/A
Full Conference: No Ticketed Events	\$250	\$200	\$330	\$65	\$125
One-Day Registration: Wednesday	\$210	\$150	\$290	\$25	N/A
One-Day Registration: Thursday	\$210	\$150	\$290	\$25	N/A
One-Day Registration: Friday	\$110	\$100	\$180	\$25	N/A

*To get the Member rate, you or your utility must be a current member of one of the three associations (CWEA, CSAWWA, or WWOA). Your membership in AWWA or WEF must be with the Chesapeake affiliate/section.*

*To get the Retiree rate, you must not be working in the industry at this time.*

*All attendees must register for the 2022 Tri-Association Conference online. You can access registration through the conference website: [www.ChesapeakeTriCon.org](http://www.ChesapeakeTriCon.org).*

**Early Bird Registration (\$75 savings) ends August 9, 2022, at 11:59 PM.**

Standard Conference Registration pricing begins at the close of Early Bird Registration. Full payment is required at the time of registration.

# REGISTRATION INFORMATION

## Full Conference, Complete Package

Includes access to Technical Sessions, Exhibit Hall, non-ticketed Social Events, one ticket to Wednesday Night Seacrets Event, and one ticket to an Association Luncheon/Meeting of your choice (CSAWWA, CWEA, or WWOA).

## Full Conference, No Ticketed Events

Includes access to Technical Sessions, Exhibit Hall, and non-ticketed Social Events.

## Operator Competition Teams

Team members will receive a “Full Conference No Ticketed Events” registration for the reduced rate of \$90 per person. Register through the system online and be sure to select “Operator Competition” when you start registration.

## One-Day Registration

Includes access to Technical Sessions, Exhibit Hall (Wednesday or Thursday only), and non-ticketed Social Events for that day.

## Exhibitor Attendee Registrations

After June 1, all exhibiting firms will receive an email with full instructions on registering attendees. Each booth comes with two free badges, and the option to purchase up to two additional Exhibitor Badges at \$150 each. Exhibitors will have to purchase tickets to the Wednesday night Seacrets Event.

**New for 2022** – Thursday hours are extended to 4:00 PM, and we are including a complimentary ticket to one of our Association Business Luncheons that day for each Exhibitor Attendee. Select or opt out at registration. CSAWWA's Luncheon is in Dockside Hall on the first floor, CWEA's Luncheon is in the Bayfront Ballroom on the second floor, and new for 2022 – the WWOA Business Luncheon will be held in our expanded Exhibit Hall!



# REGISTRATION INFORMATION

## ADDITIONAL SELECTIONS

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### **Golf at the Ocean City Golf Club, Tuesday, August 30, 2022**

Sign-in is 11:00 AM to 12:00 PM; Shotgun Start at 12:00 PM.

Space is limited, be sure to register early! Cost: \$100 per individual and \$400 for a foursome.

### **5K Fun-Run/Walk, Wednesday, August 31, 2022**

The 5K Fun-Run/Walk will be held on Wednesday at 7:00 AM on the Boardwalk at the Grand Hotel (21st Street).

Early Bird Registration Cost: \$30/Standard Registration Cost: \$40.

### **Pre-Conference Workshops**

Three workshops are planned for Tuesday, August 30, beginning at 1:00 PM: *Building Water Resilience in Your Community* – US EPA; *The Science of Manholes* – J. Scott Shipe; and *Using Dashboards to Solve Problems Faster* – CSAWWA and CWEA Asset Management Committees. All workshops will be submitted for PE and operator CEUs in Maryland and Delaware.

Early Bird Registration Cost: \$45/Standard Registration Cost: \$50.

### **Operator Classes**

*Advanced Treatment Technologies for the 21st Century* on Wednesday, August 31: TRE 7046-21-7; All Operators (Process, 7 hours); and *Maximizing Success – How to Prepare for and Take the State Certification Exam* on Thursday, September 1 – TRE 6554-19-05: All Operators (Non-Process, 7 hours). MDE will proctor the license exam on Friday, September 2 at the Convention Center.

Early Bird Registration Cost: \$45/Standard Registration Cost: \$50.

### **Women's Networking Event, Wednesday, August 31, 2022**

All are invited, guys too! Please join us in the Bayfront Ballroom from 5:00 PM to 6:30 PM to discuss the “new normal” and how the workforce has changed in the recent years.

### **Fun Night at Seacrets, Wednesday, August 31, 2022**

Note: Seacrets tickets must be purchased by Tuesday, August 30, 2022. NO INDIVIDUAL TICKETS WILL BE SOLD AT THE CONFERENCE ON WEDNESDAY OR AT THE DOOR. Must be 21 years or older to enter. Cost: \$70 per person. You must have a ticket to attend – no exceptions.

# REGISTRATION INFORMATION

## Business Luncheons/Meetings, Thursday, September 1, 2022

All three organizations (CSAWWA, CWEA, and WWOA) will hold their annual business luncheons/meetings concurrently on Thursday. Tickets are required for attendance at the business lunch, and exhibitors receive two tickets to their choice of association luncheon with their booth.

Cost: \$45 per ticket. **New for 2022** – the WWOA Business Luncheon will be held in our expanded Exhibit Hall!

## Young Professionals Happy Hour, Thursday, September 1, 2022

All are welcome to join the Young Professionals on Thursday for a fun night of networking! We will be providing happy hour and appetizers at Skye Bar on 66th Street from 6:30 PM to 9:00 PM. Registration includes one happy hour drink and appetizers. No cost, but you must register to attend.

## Guest Badges

All guests who wish to attend the non-ticketed Social Events, including breakfasts, breaks, receptions and other social events, will need to purchase a Guest Badge. Cost: \$135 per guest. Guest tickets are intended for those persons accompanying an attendee for non-business-related purposes. All attendees wishing to conduct business must register for the conference.

## Free Rides on Ocean City Buses!

All conference attendees, exhibitors, and registered guests (with a name badge) can ride the Ocean City buses free of charge by showing their 2022 Tri-Association Conference Name Badge between Tuesday August 30, 2022 at 2 PM and Friday September 2, 2022 at noon.



# REGISTRATION INFORMATION

## THE FINE PRINT

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### Payment Methods

Registration can only be purchased using a credit card – no cash or checks will be accepted for registration either in advance or at the conference. Upon completion of your registration, you will receive a confirmation that will show what was purchased, the type of payment used, and the amount paid.

### Cancellations

All cancellation requests must be made in writing to *tricon2022@rcsreg.com*, and received by the Registrar no later than August 9, 2022 at 11:59 PM. Refunds will be issued minus a 20% administrative fee for cancellations received before August 9, 2022 at 11:59 PM. No refunds will be issued for requests received after August 9, 2022 at 11:59 PM.

### On-Site Registration

On-site registration will be available at the Convention Center. On-site registration can be done at the Registration Desk. Note: Lines may be long for on-site registration so allow plenty of time to register before the sessions.

### Registration Information

Registered attendees can pick up their conference badge and tickets at the Registration Desk.

Technical Session Attendance Forms, Conference Brochure, and any updates to conference information will be available at the Information Desk.

### Contact the Registrar

If you have questions about the online registration process or systems, please contact RCS at *tricon2022@rcsreg.com* or (805) 654-0171.

For all other general conference information, please contact us *info@ChesapeakeTricon.org* – we will respond within one business day.

***CWEA, WWOA, and CSAWWA thank you for your support!***





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