Water is Life

10th Annual Tri-Association Conference

Ocean City Convention Center | Ocean City, MD | August 27–30, 2019

Learn, Network, Enjoy

70th Anniversary Chesapeake AWWA American Water Works Association

cwea Chesapeake Water Environment Association

WATER AND WASTE OPERATORS OF MD, DE, AND DC

Hazen and Sawyer is proud to be a continued supporter of the Tri-Association Conference.
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WELCOME TO THE 2019 TRI-ASSOCIATION CONFERENCE

On behalf of CWEA, CSAWWA, and WWOA, and especially the dedicated members of our Tri-Association Conference Committee, I would like to extend a warm welcome to you and the 2019 Tri-Association Conference. Having served as Tri-Con Chair in 2016 and now 2019, I pretty much know how much time, effort and energy goes into putting on a conference of this size, scope, and caliber. I can also tell you what makes chairing this conference an immensely satisfying job… and that is our Conference Committee and all the volunteers who selflessly give of themselves to the betterment of Tri-Con, and our three respective associations. We've worked hard to bring you the very best technical sessions, focused workshops, and vendor products and innovations that meet our water, sewer, wastewater, and collection needs. From the Charity Golf tournament to the 5K Fun Run, from the Operator Process classes to the Women's Networking Event, from the Top Ops Competition to the Biosolids Beauty Contest, and from the Ops Challenge to the Pipe Cutting Shootout Contest… the Tri-Con Committee has put together an outstanding program that has plenty for everyone! So as you go about your days here in Ocean City, I ask that you seek out and thank the Conference Committee members for their service and commitment to Tri-Con and our industry.

Gian A. Cossa, 2019 Tri-Association Conference Committee Chair

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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 27 – August 30, 2019. 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*) frequently for updated information regarding the program, hotel accommodations, registration, golf outing, Water For People 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 includes more than 150 standard booths. Wednesday breakfast and breaks, Wednesday lunch, and Thursday breakfast and morning break will be held in the Exhibit Hall with the exhibitors. In addition, the 12th Annual Operations Challenge will be spotlighted in the Exhibit Hall, with the exciting Pipe Cutting Shootout scheduled at the same time as the Wednesday evening Happy Hour. Pipe tapping and **NEW** this year – **Meter Madness** – will also take place in the Exhibit Hall.

Our 2019 Technical Program will include more than 150 presentations in six concurrent technical sessions including a one-hour EPA presentation and a one-hour engineering ethics course. In addition to the technical presentations, two Pre-Conference Workshops will be held on Tuesday, August 27, 2019. Our technical program will also include up to 10.5 hours of process credits for operators on Wednesday August 28, 2019!

CYBER CAFÉ

The Cyber Cafe will be located in Room 209 and will include several PCs and a printer. The Conference Committee has arranged for free wireless internet access at the Convention Center for attendees and exhibitors; however, this service is not guaranteed.

ROLAND E. POWELL CONVENTION CENTER

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 2019 Tri-Association Conference name badge can ride the Ocean City buses at no charge from Tuesday, August 27, 2019 at 2:00 PM through Friday, August 30, 2019 at noon.

REGISTRATION

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:

ATTENTION CERTIFIED OPERATORS

The pre-conference workshops and technical sessions have been submitted for approval, for non-process credit, by the Maryland Board of Waterworks and Waste System Operators, and course codes have been assigned. 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.

This year's program includes a Water and Wastewater process class for operators and attendees can earn up to 10.5 hours of process credits. The classes offered are **Applied Process Mathematics** and **Hypochlorite Disinfection** (see page 23 for more information). These classes will be offered on Wednesday, August 28, 2019 and will be presented by staff from the Maryland Center for Environmental Training (MCET). Applicable certification documentation will be provided by MCET at the end of the class. There will be a charge of $35 to secure your spot in the classes.

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 must complete and sign the Exhibitor Product Briefing Form, which is part of the Technical Session

Attendance Form. 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, August 30, 2019.

ATTENTION PROFESSIONAL ENGINEERS

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 2019: A one-hour presentation 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, August 30, 2019.

CONFERENCE PLANNING COMMITTEE

Raj Arora, *American Pipe*
Door Prizes; Meter Madness; Promotions/Communications; Registration

Clarence Beverhoudt, *WSSC*
Convention Center Liaison; Moderators–Monitors

Mehmet Boz, *KCI Technologies*
Meter Madness Chair

Stephanie Brown,
MDE Water Supply Program
Fun Run

Priscilla Brown-Buchalla,
Black and Veatch
Opening Ceremony Chair; Arrangements/Hotels/Seacrets; Brochure

Prabhu Chandrasekeran, *Stantec*
YP Committee Chair; Moderators–Monitors; Sponsorships

Chein-Chi Chang, *DC Water*
Technical Program

Andy Cooper,
Whitman, Requardt & Assoc.
Registration; Silent Auction

Gian Cossa, *DC Water*
Tri-Con Committee Chair; Arrangements/Hotels/Seacrets Chair; Travel Meetings Chair; Opening Ceremony; Brochure; Door Prizes; Technical Program

Teresa DiGenova, *Black and Veatch*
Women's Networking Chair; Technical Program Co-Chair; Signs

Rachel Ellis
Executive Administrator; Registration Chair; Signs Co-Chair

Mike Emery, *DC Water*
Signs Co-Chair; Exhibits; Silent Auction

Jegnaw Essatu, *WSSC*
YP Committee

Steve Fox, *Hydrocorp*
Exhibits; Golf

Ellen Frketic,
MD Environmental Service

Marlou Gregory, *CWEA*

Eric Held, *Charles Morrow & Assoc.*
Exhibits Chair; Pipe Tapping; Meter Madness; Door Prizes; Registration; Technical Program

Aaron Hughes, *WSSC*
Sponsorships Co-Chair; Opening Ceremony; Brochure; Registration

Bob Johns, *Ferguson*
Exhibits; Meter Madness

Jennifer Kaberline,
Hazen and Sawyer
Sponsorships Co-Chair; Awards; Promotions/Communications; Technical Program

Jay Kirk,
Brown and Caldwell
Tri-Con Committee Vice-Chair, Door Prizes Chair; Arrangements/Hotels/Seacrets; Brochure

Carrie Kruger,
Duffield and Associates
Brochure Chair; Fun Run Chair; Golf

Graeme Lake, *Penonni*
Moderators–Monitors; Awards; Opening Ceremony; Technical Program

CONFERENCE PLANNING COMMITTEE

Nick Lewis, *Gannett Fleming, Inc.*
Pipe Tapping

Sophia Liskovich,
Gannett Fleming, Inc.
Technical Program Chair; Brochure

Louisa McMorrow,
Administrator

Kraig Moodie, *FloWav*
Ops Challenge Chair

Karl Ott
Immediate Past Chair, Convention Center Liaison; Registration; Travel/ Meetings; Sponsorships

Rob Penman, Jr.,
Artesian Water Company, Inc.
Technical Program

Charles Poskas, *RJN*
Fun Run

Dennis Quinn,
Bingham & Taylor Corp.
Golf

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

Anthony Rocco,
Howard County Bureau of Utilities
Top Ops Chair

Bob Stenger, *Rehoboth Beach*
Technical Committee

Christina Swann,
OBG, part of Ramboll
Women's Networking

Ron Tatariw, *Tatariw, Inc.*
Golf Chair

Dan Tobocman,
OBG, part of Ramboll
Moderators–Monitors Chair; Volunteer Recruitment Chair; Technical Program

Armin Vakili, *CDM Smith*
Silent Auction

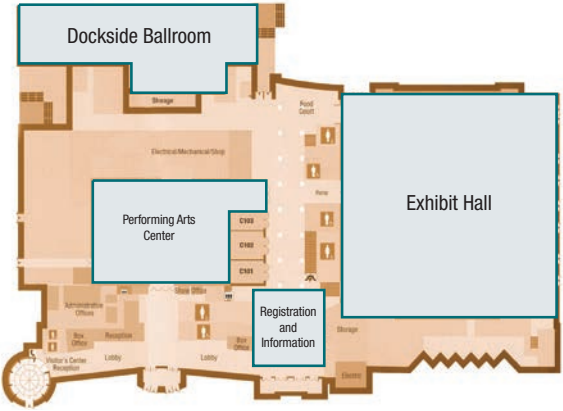
Kristin Waller, *WRA*
Women's Networking

Erica Whorley, *Brown and Caldwell*
Promotions/Communications Chair; Silent Auction Chair; Sponsorships

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

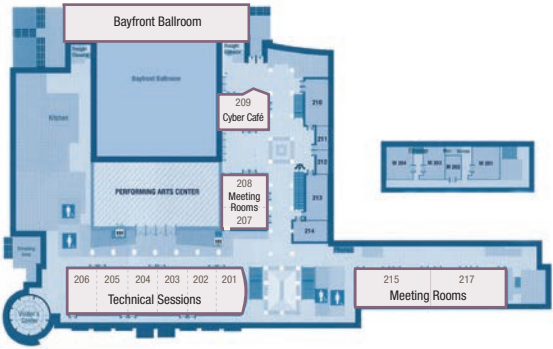
Deborah Wynn, *CPI Water*
Exhibits

LEVEL 1



Main Entrance to Convention Center

LEVEL 2



Cyber Café: Room 209
Technical Sessions: Rooms 201–206
Meeting Rooms: 207–208, 215, 217

Tuesday, August 27
Registration First Floor 10:00 AM – 4:00 PM
Golf Outing Benefitting WFP Ocean City Golf Club Berlin, MD Sign-In: 10:30 AM – 12:00 PM; Shotgun Start: 12:00 PM
Exhibitor Move-In Exhibit Hall 8:00 AM – 7:00 PM
Pre-Conference Workshop: Stormwater and MS4 (MDE) Room 201 1:00 PM – 4:00 PM
Pre-Conference Workshop: Cross Connection Programs (UF TREEO) Room 203 1:00 PM – 5:00 PM
Operations Challenge Pre-Competition Meeting Room 215 5:00 PM – 5:30 PM
Operations Challenge Room 215 5:00 PM – 5:30 PM

Wednesday, August 28	
5K Fun-Run/Walk Benefitting WFP Boardwalk at the Grand Hotel 7:00 AM	**Silent Auction Benefitting EWB** Exhibit Hall 9:00 AM – 5:00 PM
Registration/Check-In First Floor 7:30 AM – 5:00 PM	**Break/Visit Exhibitors** Exhibit Hall 10:00 AM – 11:00 AM
Exhibits Open Exhibit Hall 7:30 AM – 6:00 PM	**Opening Ceremony/Keynote Address** Performing Arts Center 11:00 AM – 12:00 PM
Continental Breakfast Exhibit Hall 7:30 AM – 9:30 AM	**Lunch With Exhibitors** Exhibit Hall Noon to 1:00 PM
Cyber Cafe Room 209 8:00 AM – 6:00 PM	**Technical Sessions** Rooms 201–206 1:00 PM – 2:30 PM
Operator Process Class: Water – Hypochlorite Disinfection Room 215 8:00 AM – 4:00 PM	**Break/Visit Exhibitors** Exhibit Hall 2:30 PM – 3:30 PM
Operator Process Class: Wastewater – Applied Process Mathematics Room 217 8:00 AM – 4:00 PM	**Technical Sessions** Rooms 201–206 3:30 PM – 5:00 PM
Technical Sessions Rooms 201–206 8:30 AM - 10:00 AM	**Pipe Cutting Shootout** Exhibit Hall 4:00 PM – 5:30 PM
Operations Challenge Pre-Competition Meeting Exhibit Hall 8:30 AM – 9:00 AM	**Shooters Happy Hour** Exhibit Hall 4:00 PM – 5:30 PM
Operations Challenge Exhibit Hall 9:00 AM – 6:00 PM	**Women's Networking Event** Bayfront Ballroom 5:00 PM – 6:30PM
Biosolids Beauty Contest CWEA Table, Outside Rooms 201–206 9:00 AM – 11:00 AM	**Fun Night!** Seacrets® (ticketed event) 7:00 PM – 11:00 PM

Thursday, August 29

Registration/Check-In
First Floor
7:30 AM – 4:00 PM

Exhibits Open
Exhibit Hall
7:30 AM – Noon
Move Out: Noon – 4:00 PM

Continental Breakfast
Exhibit Hall
7:30 AM – 9:30 AM

Silent Auction Benefitting EWB
Exhibit Hall
7:30 AM – 10:30 AM

Cyber Cafe
Room 209
8:00 AM – 6:00 PM

Technical Sessions
Rooms 201–206
8:30 AM – 10:00 AM

Break/Visit Exhibitors
Exhibit Hall
10:00 AM – 11:00 AM

Meter Madness
Exhibit Hall
10:00 AM – 11:00 AM

Pipe Tapping
Exhibit Hall
9:30 AM – 11:30 AM

Technical Sessions
Rooms 201–206
11:00 PM – 12:30 PM

CSAWWA Business Luncheon
Dockside Ballroom (ticketed event)
12:30 PM – 1:45 PM

CWEA Business Luncheon
Bayfront Ballroom (ticketed event)
12:30 PM – 1:45 PM

WWOA Business Luncheon
Rooms 207–208 (ticketed event)
12:30 PM – 1:45 PM

Technical Sessions
Rooms 201–206
2:00 PM – 3:30 PM

Top Ops
Bayfront Ballroom (upstairs)
2:30 PM – 4:30 PM

Break
Top of Escalator
3:30 PM – 4:00 PM

Technical Sessions
Rooms 201–206
4:00 PM – 5:30 PM

Awards Program
Bayfront Ballroom (upstairs)
- Cocktails: 5:30 PM – 5:50 PM
- Program: 5:50 PM – 6:30 PM

YP Happy Hour
Skye Bar on 66th Street
6:30 PM – 9:30 PM
**All are welcome to attend*

Friday, August 30

Registration/Check-In
First Floor
7:30 AM – 10:30 AM

Continental Breakfast
Outside Rooms 201–206
8:00 AM– 9:30 AM

Cyber Cafe
Room 209
8:00 AM – 10:30 AM

Technical Sessions
Rooms 201–206
8:30 AM – 11:30 AM

MDE Operator Certification Exam
Room 215
9:00 AM – 12:00 PM

Last Chance for Technical Session Attendance Form Signatures
Information Area
11:30 AM – Noon

Adjourn/Monster Door Prizes
Information Area
11:45 AM

CSAWWA Board Meeting & Luncheon
Room 210
Noon – 2:00 PM

CWEA Board Meeting & Luncheon
Room 213
Noon – 2:00 PM

	Room 201	Room 202	Room 203	Room 204	Room 205	Room 206
	Asset Management	**Utility Management**	**Biosolids Management**	**Water System Infrustructure**	**Operation and Maintenance 1**	**Treatment & Regulation**
8:30 AM	BIMs for Asset Management	Climate Change Resiliency Planning for Water and Wastewater Systems: Northern Chesapeake Bay	How Much Digestion Volume Do You Really Need for a THP Facility?	Philadelphia's Risk Reduction Approach to Master Planning	Improvements at the Eastern Avenue Pumping Station to Improve Collection System Performance	True Grit: Retribution in the Wild West Grit Chamber at DC Water's Blue Plains Advanced Wastewater Treatment Plant
9:00 AM	The RCM Road to Salvation	Communicating Emerging Contaminants to Your Customers and Key Stakeholders	Improved Design of Secondary Clarifiers for More Efficient Solids Removal	Real Time Hydraulic Modeling at DC Water	A FOG Farewell: Automated FOG Prevention Saves Time, $$$, and Prevents Odor	America's Water Infrastructure Act of 2018 Requirements Now and into the Future
9:30 AM	Business Case Considerations for Leakage Control	Big Data, Big Analytics, and Big Decisions	Landfills Falling out of Love with Biosolids – What are the Ramifications?	It Takes Two to Model Build: Combining SCADA Data with Operations Staff Knowledge Leads to Efficient Development of a Complex Hydraulic Model	The New P in Your Collection System Maintenance Program; Predictive Maintenance	
	Room 201	**Room 202**	**Room 203**	**Room 204**	**Room 205**	**Room 206**
	Asset Management	**Utility Management**	**Nutrient Removal and Process Optimization**	**Water System Infrustructure**	**Operation and Maintenance 2**	**Storm Water Management**
1:00 PM	Rivanna Water and Sewer Authority (RWSA) Asset Management Program	Don't Wait for a Disaster. Be Prepared to Manage a Contamination Incident	Finding the Right Solution for Phosphorous Harvesting: A Risk-Based Approach to the Evaluation of Process Alternatives	A Towering Achievement	Pump Vibration and Surge Investigation at Critical 460-MGD Combined Sewage Pumping Station	Second Mouse Gets the Cheese – Maryland Phase II MS4s Should Benefit from Phase I Experience
1:30 PM	Putting Your Money Where Your "Need" Is: Implementing an Asset Management-Driven CIP Framework	Sustainability at DC Water: Time for a Refresh	Inline Enhanced Biological Phosphorus Removal at WSSC	Putting Retired Quarries Back to Work	Brentwood Park Sewage Pump Station Improvements: Tales from the Crypt	A Zero Sum Game? Testing out the New Maryland Nutrient Trading Program
2:00 PM	Streamline Green Infrastructure Asset Management – A Case Study of DC Water Mobile-Based Asset Management System	When a Sprint Becomes the Hurdles: Design of the Kenilworth Avenue Stormwater Pumping Station	Design and Start-Up of the Patapsco WWTP ENR Facility	Maryland's Newest Dam Preserves a Community's Most Valuable Resource	If You Build It… They Will Complain?	A Flexible Framework for Process-Based Hydraulic and Water Quality Modeling of Best Management Practices
	Room 201	**Room 202**	**Room 203**	**Room 204**	**Room 205**	**Room 206**
	Asset Management	**Utility Management**	**Water Resource Recovery**	**Water Infrastructure**	**Study and Assessment**	**Storm Water Management**
3:30 PM	Optimizing Scarce Resources: Using Pipeline Renewal Models to Develop Focused CIP	Pure Water Brew: Judge Water Based on its Quality Not its History	The State of the Biogas Washwater Treatment and Upgrading Market	Designed. Bid. Built: Considerations from the Contractor and Consultant on the Clinton Zone Transmission Main Project	Zinc-Coated DIP Force Main Study: Utility Applies Corrosion Engineering for Thorough Results	Assessing a Full Delivery of Water Quality Improvements Approach Three Years In: Lessons Learned
4:00 PM	Transmission Main Leak Monitoring to Reduce Risk and NRW	Innovation for a Sustainable Utility of the Future	Increasing Treatment Capacity and Process Efficiency in a State-of-the-Art Water Resources Recovery Facility	Ocean City Subaqueous Water Mains – Eliminating Dead Ends	Sewer Sleuthing of the Oxon Run Interceptor to Remediate a Significant Overflow	Rising Waters: Protecting Fairfax County's Huntington Neighborhood
4:30 PM	Listen. Monitor. Locate. Repair. – Preventing Distribution Main Breaks With Remote Monitoring Networks	Hey, Wait a Minute – Before You Go Can We Write That Down... Creating a SOP program	Status and Developments of Co-digestion in the US	Instant Water Main: Expedited Approach for the Design of Three Miles of Distribution Water Mains in Howard County	Trunk Walk Manhole Inspections: Obstacles and Challenges Require Unique Solutions	Incorporating Stream Restoration Techniques in Stormwater Management

	Room 201	Room 202	Room 203	Room 204	Room 205	Room 206
	Asset Management	**Utility Management**	**Nutrient Removal & Process Optimization**	**Water System Infrustructure**	**Project Delivery - 1**	**Water Treatment**
8:30 AM	Detecting High Risk Zones Using a Spatial Clustering of Pipe Breaks	EPC Advantages and Why Should Utility Owners Consider It	Aerobic Granular Sludge Bioaugmentation in Low-SRT Flocculent Activated Sludge: Bench-Scale Demonstration and Pilot Testing	Shedding Light on Getting Power to Remote Sensor... the Solar Option	PS-6 Design and Construction: How to Build a 28 MGD Self-cleaning Wet Well Pumping Station in 14 Months	Two Centuries of Fighting Waterborne Disease: The Battle Rages On
9:00 AM	A Tiered Criticality Approach – Developing A Rehabilitation Plan Using InfoMaster	Critical Separation: AlexRenew's Solution to a Fast-Track CSO Remediation Program	Why Consider P Recovery and How to Select the Right Technology for Your WRRF	Evaluation of Acoustic and Satellite Leak Detection Technologies and Preliminary Development of Large-Scale Leak Detection Program	Rehabilitation of 125' Deep Leaking Brick Manhole Leading to Degraded 350', 78" x 66", Egg-Shaped Brick Culvert Utilizes Geopolymer Mortar & Precision Application Processes	UCMR4 – What Are We Seeing for the First Half and What Are the Issues?
9:30 AM	A Non-Revenue Water Tale of Five Cities	10 Years of Progress – WSSC's GHG Inventory Report Card	Starting of the DEMON	Flow by Night: Keep a SCADA Outage From Shutting Down Your System	Collaborative Construction Scheduling Expedites Successful Pump Station Start-up	Getting the Lead Out – Dealing With Our Country's Lead Pipe Legacy
	Room 201	**Room 202**	**Room 203**	**Room 204**	**Room 205**	**Room 206**
	Asset Management	**Emergency Preparedness & Resiliency**	**Disinfection**	**Water System Infrustructure**	**Project Delivery - 2**	**Water Treatment**
11:00 AM	Transitioning Stormwater Facility Maintenance from Reactive to Proactive: An Experiment in Risk Assessment and Predictive Analytics	Emergency Bypass Procedures for Arlington County's Wastewater Pump Stations	Comparative Inactivation of Norovirus and MS2 Bacteriophage by Peracetic Acid and Monochloramine in Municipal Secondary Wastewater Effluent	Frazil Ice Intake Challenges – Balancing Environmental Impacts with Plant Operations	Forensics of a Successful Stream Restoration and Sewer Asset Protection Project – Design, Construction, and Reality	Investigating Water Quality and Microbiological Parameters Related to the DC Water Free Chlorine Disinfection Period
11:30 AM	Western Branch Denite Process Optimization – A Step Beyond a Business Case Evaluation	Preparing for the Silver Tsunami: A Place in the Water Workforce for GED to PhD	Evaluation of Peracetic Acid as an Alternative Disinfectant at WSSC's Parkway WRRF	Water Treatment Intake System Investigation and Upgrade Design – Case Study: The City of Havre de Grace Water Intakes System	Relining the Four Mile Run Relief Sewer Line: Construction Management Challenges	Simultaneous Manganese Control and DBP Treatment Strategy at WSSC's Potomac Water Filtration Plant
12:00 PM	Optimization of WSSC's Water Main Replacement Program	Pipeline Resiliency to Survive L.I.D – An Endurance Test by Design?	Consistent Compliance with Low Level Nutrient Limitations, Extreme Flow and Load Variation Using a Small System Membrane Bioreactor	Modeling Framework to Support Water Resource Appropriations and Dam Operations	Keeping it Clean – Hydraulic Advantages of Self-Cleaning Trench Style Sewage Pumping Stations	Comprehensive Piloting of Innovative Process Combinations to Control Disinfection By-Products and Manganese

	Room 201	Room 202	Room 203	Room 204	Room 205	Room 206
	Asset Management	**Utility Management**	**Water Resource Recovery**	**Water System Infrustructure**	**Project Delivery - 3**	**Water Treatment**
2:00 PM	Budget vs. Needs – The Secret of Pipeline Renewal Defect Prioritization	Get Ready to Rumble! Alternative Delivery Panel Discussion from Three Different Perspectives	What Are My Options when I Need a Solids System Upgrade Focused on Maximizing Biogas Production and Use?	Trenchless Success Story for Water Main Rehabilitation	Protecting the Susquehanna River: Upgrades to the Front Street Pumping Station	When Algaecides Can't Cut It: Algae Treatment by Air and Sonication
2:30 PM	What Goes Down, Must Get Pumped Back Up – How Pump Station Asset Evaluation Helps to Optimize Performance and Pay for Capital Improvements	The Smart Start: Workforce Gaps in Intelligent Water Systems	Optimizing Plant Performance with "Smart" Operations	Considerations for Tunneling Water Conduits through Rock Formations	AlexRenew's Drop Shaft Design and Physical Modeling	Preoxidation Strategies for Reducing Disinfection Byproducts – Don't Forget About Disinfection!
3:00 PM	Leveraging Analytics to Make Risk-Based Capital Investment Decisions	Outreach & Communication for Today's Water Customer	Alternative Advanced Treatment Approaches for Reduced Capital and Operating Costs – Technologies and Case Studies	Rehoboth HDD Ocean Outfall	Collaborative Construction Scheduling Expedites Successful Pump Station Start-up	P-F-What? Unregulated Contaminants and the Path to Regulation
	Room 201	**Room 202**	**Room 203**	**Room 204**	**Room 205**	**Room 206**
	Asset Management	**Utility Management**	**Biosolids Management**	**Water System Infrustructure**	**SSO & Basement Backup**	**Water Treatment**
4:00 PM	Vallejo Flood and Wastewater District's Pragmatic Asset Management Journey	Sun Shines Brightly on Latest Cecil County Solar Project	Worthless Dust or Valuable Resource? Drying Thermally Hydrolyzed Solids the Right Way	Flushing of Premise Plumbing After Full Lead Service Line Replacements: Field Studies in Washington, D.C.	Collection System Challenges in Urban Settings and Innovative Solutions	The Waters of Life – Protecting Our Veterans with a State of the Art Membrane Plant
4:30 PM	The Cost Benefits of In Situ Electric Motor Testing	A Best-Practice Approach to Affordability: How WSSC is Re-tooling its Customer Assistance Programs to Better Meet the Needs of its Low-income Customers	Conversion of Conventional Aerobic Digesters to an Autothermal Thermophilic Aerobic Digestion (ATAD) Process for Class A Biosolids	Introduction of Equipment and Methods for Flow/ Pressure Testing Hydrants	Looking Back to Look Forward: Getting to the Root Causes of BBKs and SSOs	Comparing the Microbial Community and Water Quality Changes During Biofilters Acclimation Period
5:00 PM	Incorporating the Lateral Sewer Asset Registry into GIS: Supporting the Enterprise Infrastructure	How to Score when Planning Your Capital Program Projects	From OIG to PFAS and Beyond: Understanding the Current State of Biosolids	Lessons Learned from Urban On-Call Emergency Water Main Repairs	Reaching Across the Aisle to Address Basement Backups and Street Flooding in our Nation's Capital	Using Zeta Potential to Achieve Optimum Water Treatment Performance

FRIDAY, AUGUST 30

	Room 201	Room 202	Room 203	Room 204	Room 205
	Utility Management	**Utility Management**	**Technology Applications and Implementation**	**Water System Infrustructure**	**Modeling Applications**
8:30 AM	How to Eat an Elephant… A Phased Approach to Implementing an Asset Management Plan – Napa Sanitation, Napa, CA	What It Really Takes to Implement Remote Water Quality Monitoring	Saving Energy and Money through Better Wastewater Treatment Plant Mixing	Cranking Up the Pressure in DC – Lessons Learned from Starting Up a New Pressure Zone in DC	Long-Term Corrosion Prevention Program
9:00 AM	Challenges of Developing a Sewage Pump Station Asset Inventory Program	Addressing America's Water Infrastructure Act of 2018 with Asset Management Tools	Case Study of Blending Blowers for Optimum Efficiency	Streamlining System Analysis Through Optimization – Integration of Hydraulic and Optimization Models	Delaware's Next Top (Hydraulic) Model
9:30 AM	Implementing and Challenges involved in conducting AWWA Water Audit	Of the People, By the People, For the People – Data Democratization at Newport News Waterworks	A Case Study on the Moorefield Wastewater Treatment Plant System Upgrade with the MOB™ Process	A Unique Solution to Flooding Removal in the CSX Howard Street Tunnel	Using Next Century Tech to Solve Last Century's Problems
10:00 AM	Resiliency Planning for Water and Wastewater Utilities – Effective Preparation	Have We Gone Too Far? Improving the Engineering Consultant Industry by Balancing Risk and Judgment	Be the Dog Not the Tail – Control the Process	Implementing Innovative Stormwater Capture and Infiltration for Groundwater Stabilization	The Million Dollar Question – What to Do with Waste from Wastewater Pump Stations?
10:30 AM	Howard County Exposed Pipeline Rehabilitation, Prioritization, and Protection	The New Validation Standard for AWWA Water Auditing – Evolutions in Water Audit Validation & Regulatory Requirements	How Diverting Organic Materials from Landfills affect Water Resource Recovery Facilities in California	Ethics, Discipline, and Protecting the Public: A Discussion of Engineering Ethics for P.E.s	Design, Startup, and Operation of New Effluent Filters, UV, and Lime Stabilization Processes at the Salisbury WWTP
11:00 AM	Managing Aggressive Project Delivery	How Much Flow? Determining Wastewater Flow Factors From Water Billing and Land Use Data	Peak Flow Dual-Use Filters Also Help Meet Dry-Weather Goals		Enhanced and Simple Wet Weather Treatment with Pile Cloth Media Filtration

TUESDAY, AUGUST 27
PRE-CONFERENCE WORKSHOPS

	Room 201
1:00 PM to 5:00 PM	Pre-Conference Workshop: Storm Water Management
	Room 203
1:00 PM to 5:00 PM	Pre-Conference Workshop: Backflow

TUESDAY, AUGUST 27, 2019

REGISTRATION/CHECK-IN

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

GOLF OUTING BENEFITTING WATER FOR PEOPLE

10:30 AM Check-In, 12:00 PM Shotgun Start

Format: Captain's Choice

water for people

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. Proceeds from the Golf Outing will benefit Water For People. Prizes will be distributed at the end of the golf outing. The Captain's Choice outing format will have a 12:00 PM shotgun start (check-in begins at 10:30 AM). Unclaimed prizes will be posted and can be claimed at the Information Booth. An individual golf registration fee of $100 or a foursome fee of $360 includes a box lunch, driving range, green fees and cart, and prizes. Proceeds from the golf outing will support Water For People.

Sponsored by:

HYDROCORR SERGEANT BACKFLOW

OBG Part of Ramboll

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 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*) by 6:00 PM on September 6, 2019, 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 Water For People.

TUESDAY, AUGUST 27, 2019

Back Again for 2019 – 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~~ **$50,000**! 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.chesapeaketricon.org/golf.html.*

For additional information, Contact Ron Tatariw, Tatariw, Inc., at 703-716-0770 or by email: *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.

EXHIBITOR MOVE-IN
8:00 AM to 7:00 PM • Exhibit Hall

PRE-CONFERENCE WORKSHOP:
Lessons Learned: Insider Advice on MS4 Permit Compliance from MS4s Around the Region (MDE)
1:00 PM – 4:00 PM • Room 201
See page 20 for details.

PRE-CONFERENCE WORKSHOP:
Cross Connection Programs – Keeping Your Water Safe (UF TREEO)
1:00 PM – 5:00 PM • Room 203
See page 18 for details.

TUESDAY, AUGUST 27, 2019

12th ANNUAL OPERATIONS CHALLENGE
Pre-Competition Meeting
5:00 PM to 5:30 PM • Room 215

Operation OC2! – Day 1
5:00 PM to 5:30 PM • Room 215, Exhibit Hall
Continues on Wednesday. (See page 23 for details.)

The 12th Annual Ocean City Operations Challenge, OC2, will be held in room 215 and the main Exhibit Hall again this year. On Tuesday, we will be meeting in Room 215. This year we will have another great turnout with teams from around the United States competing once again for the coveted Crabs! CWEA is proud to sponsor this event and we look forward to seeing you in the crowd to experience the energy and excitement of live industry focused competition.

To register your team for this event go to:
www.ChesapeakeTricon.org/Ops-Challenge.html

Sponsored by:

TUESDAY, AUGUST 27, 2019

The 2019 Tri-Association Conference Committee is pleased to offer Pre-Conference Workshops focused on MS4 Permit Compliance and Backflow Prevention. You must register for these workshops in addition to the conference registration. All workshops are subject to cancellation dependent upon the number of registrants. If your workshop is cancelled you will be notified and your workshop payment will be refunded in full.

CROSS CONNECTION PROGRAMS – KEEPING YOUR WATER SAFE (UF TREEO)

1:00 PM – 5:00 PM • Room 203

The University of Florida TREEO Center (UF/TREEO) is offering a pre-conference workshop on safety in our public water supply. Cross-connection control remains a critical link in protecting public health by maintaining the quality of the drinking water. Water quality could be jeopardized without a persistent effort in cross-connection control. A representative from the local chapter of The American Backflow Prevention Association (ABPA) will be in attendance to give us an update on the organization and present on ethics in backflow testing. The session will wrap-up with discussions on how local water authorities are protecting their potable water supplies.

The session will cover the components of an effective cross-connection program to include:

- Legal authority;
- Policies;
- Record keeping;
- Training and education;
- Assembly standards;
- The elements of a good ordinance; and
- Liabilities and responsibilities.

In this session we will also discuss the challenges and successes in creating a cross-connection control program in both a large system and a system where the state has no cross-connection regulations.

TUESDAY, AUGUST 27, 2019

1:00 PM Welcome and Introduction – UF TREEO Updates (Carol Hinton, UF/TREEO)

1:15 PM Virginia State Educational Requirements, ABPA Update & Ethics in Testing Assemblies (Chris Mayhew, Backflow Services, Inc.)

2:15 PM Components of a CCC Program (Steve Fox, Hydrocorp)

3:15 PM Break

3:30 PM Water Safety 201 (Tom Buckley and Chip Matthews, WSSC)

4:30 PM Area Jurisdiction updates and Program Developments (Charles County, Anne Arundel County, Suez Delaware and WSSC)

TUESDAY, AUGUST 27, 2019

LESSONS LEARNED: INSIDER ADVICE ON MS4 PERMIT COMPLIANCE FROM MS4s AROUND THE REGION

1:00 PM – 4:00 PM • Room 201

As the Municipal Separate Storm Sewer System (MS4) Program approaches its fourth decade of implementation, urban stormwater is still a growing pollution source in many areas across the United States and in the Chesapeake Bay Watershed. With urban populations expected to grow to nearly 70% by 2050, the universe of MS4 permittees will continue to grow. This workshop will draw upon years of experience MS4 communities have in the Chesapeake Bay Watershed Region and have them share their lessons learned to guide municipal stormwater programs and stormwater practitioners.

1:00 PM	Welcome and Workshop Objectives
1:10 PM	Overview of MS4 Program – Kim Grove, Baltimore City
1:30 PM	Impervious Area Counting – Kate Bennett, Montgomery County
1:50 PM	Stormwater Asset Management – Peter Littlejon and Eric Jones, Prince Georges County
2:10 PM	Community Engagement – Tiffany Wright, City of Bowie
2:30 PM	Funding Programs Supporting the MS4 Program – Erik Michelsen, Anne Arundel County
2:50 PM	Crediting of Harford County Projects – Christine Buckley, Harford County
3:15 PM	Panel Discussion
3:55 PM	Workshop Wrap-Up and Close

WEDNESDAY, AUGUST 28, 2019

5K FUN RUN/WALK
BENEFITTING WATER FOR PEOPLE
7:00 AM • Boardwalk at the Grand Hotel (21st Street)
Cost includes t-shirt, prizes, refreshments,
and a donation to Water For People.
See page 72 for registration fee and information.

water for people

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 (*ckruger@duffnet.com*) by 6:00 PM on September 6, 2019 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 to Water For People.

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DIXON ENGINEERING, INC.
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DUFFIELD ASSOCIATES Soil, Water & the Environment
FISHER TANK COMPANY Employee Owned
EBA ENGINEERING
Geck
Hazen
HASKELL
Keystone ENGINEERING GROUP
PRELOAD
Kershner Environmental Technologies, LLC Ideas & Innovations
rjngroup Engineering Infrastructure for tomorrow

WEDNESDAY, AUGUST 28, 2019

REGISTRATION/CHECK-IN
7:30 AM to 5:00 PM • First Floor Lobby

EXHIBITS OPEN
7:30 AM to 6:00 PM • Exhibit Hall

CONTINENTAL BREAKFAST
7:30 AM to 9:30 AM• Exhibit Hall

Sponsored by:

EBA ENGINEERING

OPERATOR PROCESS CLASSES
Instructors: Maryland Center for Environmental Training

Hypochlorite Disinfection
8:00 AM – 4:00 PM • Room 215
Process credits: 7 hours (10.5 hours with passed exam)
Note: You must attend the full course to receive process credit.
Class space is limited to 40 people.

Course Description: Hypochlorites – sodium and calcium – are the most common form of disinfection used in water treatment. This course focuses on the properties, use, and feed equipment when using hypochlorite for disinfection. Operators will be introduced to the uses and properties of hypochlorites, chemical handling including safety, regulatory requirements, and feed equipment. Various mathematics principles will be addressed throughout the workshop including changing % concentrations, dosage/feed rates, chlorine demand/dose, and CT calculations.

WEDNESDAY, AUGUST 28, 2019

Applied Process Mathematics

8:00 AM – 4:00 PM • Room 217

Process credits: 7 hours (10.5 hours with passed exam)
Note: You must attend the full course to receive process credit.
Class space is limited to 40 people.

Course Description: Operators often have to use higher level mathematical formulas to perform their day-to-day work functions. This course will build on mathematical concepts taught in Introduction to Applied Process Mathematics and is designed to provide operators with problem solving skills specific to the water and wastewater industry. Participants will practice manipulating formulas for unknown variables, analyze operational problems using math skills, and review math skills necessary for certification exams. Upon completion of this course, the student should be able to calculate operational problems such as flow quantity, effluent treatment, and sludge volume.

Registration for this class can be done as part of the regular registration plus a $35 fee in addition to registration at *www.ChesapeakeTriCon.org*.

12TH ANNUAL OPERATIONS CHALLENGE

9:00 AM to 6:00 PM • Exhibit Hall

See page 17 for details.

Pre-Competition Meeting

8:30 AM to 9:00 AM • Exhibit Hall

Operation OC2! – Day 2

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

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

WEDNESDAY, AUGUST 28, 2019

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 17 for details).

BIOSOLIDS BEAUTY CONTEST

9:00 AM to 11:00 AM • CWEA Table, Outside Rooms 201–206

Contact Kelly Baxter at *kelly.baxter@mottmac.com* for more Information on submitting your entry.

SILENT AUCTION BENEFITTING THE WASHINGTON DC CHAPTER OF ENGINEERS WITHOUT BORDERS

9:00 AM to 5:00 PM • Exhibit Hall

(Ends at 10:30 AM on Thursday, August 29, 2019)

The 2019 Tri-Association Conference includes a Silent Auction that will benefit the Washington DC Professional Chapter of Engineers Without Borders. The auction will begin Wednesday, August 28, 2019 at 9:00 AM, and end Thursday, August 29, 2019 at 10:30 AM. The bid forms will be collected at 10:30 AM sharp, so make your last bid before that time. Items donated by our exhibitors will be located at individual booths with balloons hung at each item so that attendees can locate and bid on the auction items. Additional items will be located at the Silent Auction tables in the Exhibit Hall.

You can also support the work of Engineers Without Borders by donating an item for the silent auction. Auction items of all values are welcome. Your sponsorship of this event will not only support Washington DC Professional Chapter of Engineers Without Borders' international actions in Burkina Faso, Cameroon, Panama and Peru, it will also provide exposure of your business to the conference attendees. All donors will be recognized at the event. To donate, please contact Erica Whorley at *erica.whorley@cbre.com*.

WEDNESDAY, AUGUST 28, 2019

WEDNESDAY MORNING BREAK/VISIT EXHIBITORS

10:00 AM to 11:00 AM • Exhibit Hall

Sponsored by:

AMT

OPENING CEREMONY

11:00 AM to 12:00 PM • Performing Arts Center

Sponsored by:

HDR

Michael Baker INTERNATIONAL

Stantec

Welcome

Gian Cossa, Tri-Association Conference Committee Chair

Keynote Speaker

Carla Reid

General Manager and CEO,
Washington Suburban Sanitary Commission

Carla A. Reid currently serves as General Manager and Chief Executive Officer at WSSC (Washington Suburban Sanitary Commission). She is the first woman to serve in this capacity. Reid is a civil engineer and senior executive with more than 30 years of business and leadership experience in the public sector. On a daily basis, she provides oversight for an operating budget of $741 million and a capital budget of $685 million for fiscal responsibility and efficiency. Carla's philosophy is three-pronged – Simplify, Focus, and Connect – with an emphasis on providing excellent customer service.

WEDNESDAY, AUGUST 28, 2019

Tri-Association Conference Committee Service Awards
Tri-Association Conference Committee – Volunteer Emeritus

LUNCH WITH EXHIBITORS
Noon to 1:00 PM • Exhibit Hall

Sponsored by:

TECHNICAL SESSIONS
1:00 PM to 2:30 PM • Rooms 201–206

WEDNESDAY AFTERNOON BREAK/VISIT EXHIBITORS
2:30 PM to 3:30 PM • Exhibit Hall

TECHNICAL SESSIONS
3:30 PM to 5:00 PM • Rooms 201–206

PIPE CUTTING SHOOTOUT
4:00 PM to 5:30 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 to participate in the fastest single pipe cut competition. There is a men's and women's competition and many first-time cutters participate annually. Trophies and gift cards will be awarded to the fastest men's and women's cuts! See you Wednesday afternoon!

SHOOTERS HAPPY HOUR
4:00 PM to 5:30 PM • Exhibit Hall

Come network and enjoy light fare and drinks with our valued exhibitors while you watch attendees participate in the Pipe Cutting Shootout. Sodas, beer, and wine are complimentary and a cash bar for liquor will be available. After happy hour, come join your fellow attendees and exhibitors for a Fun Night at Seacrets®!

WEDNESDAY, AUGUST 28, 2019

WOMEN'S NETWORKING EVENT

5:00 PM to 6:30 PM • Bayfront Ballroom

Never have I ever… Tri-Con Edition! Join us for a game-themed women's networking happy hour on Wednesday, August 28, 2019 starting at 5:00 PM! We'll feature interactive discussions with female water infrastructure experts, at various career stages, sharing their experiences in the water/wastewater industry. Share your story and photo on LinkedIn, Twitter, Facebook or any other social media network using *#WomenImpactingWater*.

Sponsored by:

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CDM Smith

EDT Sign of Quality ENGINEERING DESIGN TECHNOLOGIES, INC.

HDR

OBG Part of Ramboll

RK&K

WRA

WEDNESDAY, AUGUST 28, 2019

FUN NIGHT

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

Take a break from the conference madness and recharge for an 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 buffet 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.

Tickets must be purchased by Tuesday, August 27, 2019. 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.*

Sponsored by:

THURSDAY, AUGUST 29, 2019

REGISTRATION/CHECK-IN
7:30 AM to 4:00 PM • First Floor Lobby

EXHIBITS OPEN
7:30 AM to Noon • Exhibit Hall
Move-Out: Noon – 4:00 PM

CONTINENTAL BREAKFAST
7:30 AM • Exhibit Hall

Sponsored by:

AMT

SILENT AUCTION BENEFITTING THE WASHINGTON DC CHAPTER OF ENGINEERS WITHOUT BORDERS
7:30 AM to 10:30 AM • Exhibit Hall
(continued from Wednesday)
See page 24 for more information.

TECHNICAL SESSIONS
8:30 AM to 10:00 AM • Rooms 201–206

THURSDAY MORNING BREAK/VISIT EXHIBITORS
10:00 AM to 11:00 AM • Exhibit Hall

Sponsored by:

Bowman CONSULTING

THURSDAY, AUGUST 29, 2019

PIPE TAPPING COMPETITION

10:00 AM to 11:00 AM • Exhibit Hall

Back for 2019 – Pipe Tapping Competition! Pipe Tapping is a high-energy competition involving a race against time to drill into a cement-lined, ductile iron pipe and install a tap. Winning teams from Section-Level Pipe Tapping Competitions compete every year at ACE. Several teams are planning to participate this year, for a chance to compete at ACE20 in Orlando!

METER MADNESS

10:00 AM to 11:00 AM • Exhibit Hall

NEW for 2019! The Meter Madness 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 Madness Competition.

THURSDAY, AUGUST 29, 2019

TECHNICAL SESSIONS

11:00 AM to 12:30 PM • Rooms 201–206

BUSINESS LUNCHEONS

All conference attendees are welcome to attend the association Business Luncheon of their choice (ticket purchase required). A plated 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 to 2:00 PM • Dockside Ballroom

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

Sponsored by:

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AWWA National Representative

Melissa Elliott

President-Elect (2019–2020)

American Water Works Association

Melissa Elliott's career is focused on helping water and wastewater utilities tell their stories. She is the Director of Strategic Communication Services at Raftelis where she consults with utilities to provide communication planning, stakeholder engagement, and risk communications. Prior to joining Raftelis, Melissa directed public relations departments at two large Colorado utilities – Denver Water

THURSDAY, AUGUST 29, 2019

and Aurora Water. All that utility experience means she's worked with the public on issues as diverse as drought, water quality, potable reuse, affordability, rate structure change, massive infrastructure projects, and customer assistance programs.

Being AWWA President-Elect has given Melissa a new avenue to elevate the conversation about the value of the services utilities provide. As a public relations practitioner working in the highly technical water industry, Melissa makes it her mission to push those around her to stop being so humble about the essential work we do. She says if we want others to understand our challenges, we need to build relationships with the people and communities we serve and talk about the value we provide.

When she's not working with utilities, Melissa makes her home in Denver where she enjoys cooking for friends, planning future travel adventures, and spending time in the Colorado sunshine with her husband.

CWEA Business Luncheon
(ticketed event)
12:30 PM to 2:00 PM • Bayfront Ballroom

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

- Past President Award
- WEF Delegate Award
- Golden Raindrop
- Golden Manhole
- President's Award
- 5S Inductees

WEF National Representative
Jenny Hartfelder
2018–2019 Immediate Past President

THURSDAY, AUGUST 29, 2019

Jenny Hartfelder is the 2018–2019 Immediate Past President of the Water Environment Federation.

Jenny is currently a vice president with Stantec and serves as a national campaign manager out of Denver, Colorado. In this role, she provides strategic planning and leadership for the business development activities for the water sector across the US. She also serves as a project manager and design engineer on numerous water and wastewater projects including utility privatization, master plans, preliminary and detailed designs, and engineering services during construction.

A WEF member since 1997, Jenny has held multiple leadership and committee roles within the Federation. She has served on the Stockholm Junior Water Prize (SJWP) Committee and the Public Communications and Outreach Committee for many years, chairing the SJWP Committee. Jenny also has served in the House of Delegates as the Speaker of the House and as a member of several HOD workgroups and committees. She is a member of the Select Society of Sanitary Sludge Shovelers and a recipient of the Arthur Sidney Bedell Award.

Also an active member of the Rocky Mountain Water Environment Association, Jenny chaired several committees including Public Education, Nominations, Awards, and the Joint Annual Conference committees, and has moved through the MA officer chairs serving as the president from 2006 to 2007.

Jenny is a registered professional engineer in the states of Colorado and Washington and is certified by the Project Management Institute (PMI) as a Project Management Professional (PMP). She received a B.S. in civil engineering in 1990 from Michigan Technological University, and an M.S. in civil engineering in 2002 from the University of Colorado – Denver.

THURSDAY, AUGUST 29, 2019

WWOA Business Luncheon
(ticketed event)
12:30 PM to 2:00 PM • Room 207–208

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

- Past President Award
- Lifetime Membership Award

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TECHNICAL SESSIONS
2:00 PM to 3:30 PM • Rooms 201–206

TOP OPS
2:30 PM to 4:30 PM • Bayfront Ballroom (upstairs)

Fast action and fun characterize this annual competition as teams of water plant operators square off against each other. The quiz show format tests the understanding and quick thinking of operators as they answer challenging technical, regulatory, and customer service questions. The room will be filled with the spirit of contest as the participants are cheered, judges are booed, and competitors vie for a chance to go to the National Top Ops Challenge at the National AWWA Conference – to be held in Orlando, Florida in 2020. For more information, contact Anthony Rocco, Howard County Bureau of Utilities, (410) 313-4945.

Sponsored by:

THURSDAY, AUGUST 29, 2019

THURSDAY AFTERNOON BREAK

3:30 PM to 4:00 PM • Top of Escalators

TECHNICAL SESSIONS

4:00 PM to 5:30 PM • Rooms 201–206

AWARDS PROGRAM

5:30 PM to 6:30 PM • Bayfront Ballroom (upstairs)

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.

Sponsored by:

TETRA TECH

5:30 PM to 5:50 PM – Cocktails

5:50 PM to 6:30 PM – Program: 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:

WWOA

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

THURSDAY, AUGUST 29, 2019

CSAWWA

- Top Ops Winners
- Pipe Tapping Winners
- Meter Madness Winners
- Operator of the Year Award
- Horizon Award
- Carl John Lauter Award
- George Warren Fuller Award

CWEA

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

YOUNG PROFESSIONALS HAPPY HOUR

6:30 PM to 9:30 PM • Skye Bar on 66th Street

Back again this year! All are welcome to join the Young Professionals on Thursday, August 29, 2019 for a fun night of networking! We will be enjoying happy hour and appetizers at Skye Bar on 66th Street from 6:30 PM to 9:30 PM. Registration cost is $10 and includes one happy hour drink and appetizers. Walk-ins are welcome to come and pay your own way.

Sponsored by:

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Hazen

FRIDAY, AUGUST 30, 2019

REGISTRATION/CHECK-IN
7:30 AM – 10:30 AM • First Floor Lobby

CONTINENTAL BREAKFAST
8:00 AM • Outside Rooms 201–206

TECHNICAL SESSIONS
8:30 AM – 11:30 AM • Rooms 201–206

MDE OPERATOR CERTIFICATION EXAM
9:00 AM – 12:00 PM • Room 215
You must pre-register with MDE

LAST CHANCE FOR TECHNICAL SESSION ATTENDANCE FORM SIGNING
11:30 AM – Noon • Information Desk, First Floor Lobby

ADJOURN/MONSTER DOOR PRIZES
11:45 AM • Information Desk, First Floor Lobby

CSAWWA BOARD MEETING & LUNCHEON
Noon – 2:00 PM • Room 210

CWEA BOARD MEETING & LUNCHEON
Noon – 2:00 PM • Room 213

WEDNESDAY, AUGUST 28, 2019

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

201 • ASSET MANAGEMENT

8:30 AM – 9:00 AM

BIMs for Asset Management

Jim Somerville, KCI Technologies (james.somerville@kci.com)

John Helwig, KCI Technologies

9:00 AM – 9:30 AM

The RCM Road to Salvation

Gregory Stephens, DC Water (gregory.stephens@dcwater.com)

Kenrick St. Louis, DC Water

9:30 AM – 10:00 AM

Business Case Considerations for Leakage Control

Russell Titus, New Jersey American Water

(russell.titus@amwater.com)

John Marciszewski, Mueller – Echologics Division

1:00 PM – 1:30 PM

Rivanna Water and Sewer Authority (RWSA) Asset Management Program

Gage Muckleroy, GHD (jgage.muckleroy@ghd.com)

Charlie Card, GHD

Scott Schiller, Rivanna Water and Sewer Authority

1:30 PM – 2:00 PM

Putting Your Money Where Your "Need" Is: Implementing an Asset Management-Driven CIP Framework

Russ Dalton, Hazen and Sawyer (rdalton@hazenandsawyer.com)

2:00 PM – 2:30 PM

Streamline Green Infrastructure Asset Management – A Case Study of DC Water Mobile-Based Asset Management System

Prasad Manthena, Greeley and Hansen LLC

(pmanthena@greeley-hansen.com)

Monica Outland, DC Water

Carlton Ray, DC Water

Moussa Wone, DC Water

3:30 PM – 4:00 PM

Optimizing Scarce Resources:

Using Pipeline Renewal Models to Develop Focused CIP

Eric Harold, Carollo Engineers (eharold@carollo.com)

Laura Khouvilay, Carollo Engineers

David Baranowski, Carollo Engineers

WEDNESDAY, AUGUST 28, 2019

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

4:00 PM – 4:30 PM

Transmission Main Leak Monitoring to Reduce Risk and NRW
John Marciszewski, Mueller – Echologics Division (jmarciszewski@muellerwp.com)

4:30 PM – 5:00 PM

Listen. Monitor. Locate. Repair. –
Preventing Distribution Main Breaks With Remote Monitoring Networks
Ethan Vidal, Xylem (ethan.vidal@puretechltd.com)
Brian Ellis, Xylem

202 • UTILITY MANAGEMENT

8:30 AM – 9:00 AM

Climate Change Resiliency Planning for Water and Wastewater Systems: Northern Chesapeake Bay
Christopher Overcash, EA Engineering, Science, and Technology, Inc., PBC (covercash@eaest.com)

9:00 AM – 9:30 AM

Communicating Emerging Contaminants
to Your Customers and Key Stakeholders
Mike McGill, WaterPIO (mike@waterpio.com)

9:30 AM – 10:00 AM

Big Data, Big Analytics, and Big Decisions
Gian Cossa, DC Water (gian.cossa@dcwater.com)

1:00 PM – 1:30 PM

Don't Wait for a Disaster.
Be Prepared to Manage a Contamination Incident
Marissa Lynch, U.S. Environmental Protection Agency (lynch.marissa@epa.gov)

1:30 PM – 2:00 PM

Sustainability at DC Water: Time for a Refresh
TBD

2:00 PM – 2:30 PM

When a Sprint Becomes the Hurdles:
Design of the Kenilworth Avenue Stormwater Pumping Station
Dan Tobocman, OBG (daniel.tobocman@obg.com)
Sema Essien, DC Water
Ned Talbot, OBG

WEDNESDAY, AUGUST 28, 2019

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

3:30 PM – 4:00 PM

Pure Water Brew: Judge Water Based on its Quality Not its History
Patrick Dube, Water Environment Federation (pdube@wef.org)

4:00 PM – 4:30 PM

Innovation for a Sustainable Utility of the Future
Keith Tyson, WSSC (keith.tyson@wsscwater.com)
Jason Carter, Arcadis

4:30 PM – 5:00 PM

Hey, Wait a Minute –
Before You Go Can We Write that Down... Creating a SOP Program
Devang Prajapati, Mott MacDonald (devang.prajapati@mottmac.com)
Gert Van der Walt, DC Water

203 • BIOSOLIDS MANAGEMENT

8:30 AM – 9:00 AM

How Much Digestion Volume Do You Really Need for a THP Facility?
Matthew Van Horne, Hazen and Sawyer (mvanhorne@hazenandsawyer.com)
Amy Hanna, Hazen and Sawyer
Joe Uglevich, Stantec
Kevin Selock, WSSC

9:00 AM – 9:30 AM

Improved Design of Secondary Clarifiers for More Efficient Solids Removal
Anjana Kadava, Black & Veatch (kadavaa@bv.com)
Ed Kobylinski, Black & Veatch
Jim Fitzpatrick, Black & Veatch
Gary Hunter, Black & Veatch

9:30 AM – 10:00 AM

Landfills Falling Out of Love with Biosolids – What Are the Ramifications?
Matthew Tabisz, Synagro (mtabisz@synagro.com)
John Uzupis, Synagro

203 • NUTRIENT REMOVAL & PROCESS OPTIMIZATION

1:00 PM – 1:30 PM

Finding the Right Solution for Phophorus Harvesting: A Risk-Based Approach to the Evaluation of Process Alternatives
Greg Knight, Black & Veatch (knightGJ@bv.com)
Engin Guven, Black & Veatch

WEDNESDAY, AUGUST 28, 2019

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

1:30 PM – 2:00 PM

Inline Enhanced Biological Phosphorus Removal at WSSC

Caroline Nguyen, WSSC (caroline.nguyen@wsscwater.com)

Marty Johnson, WSSC

Sam Amad, WSSC

Mike Hanna, Black & Veatch

2:00 PM – 2:30 PM

Design and Start-Up of the Patapsco WWTP ENR Facility

Robert Andryszak, RK&K (randryszak@rkk.com)

Terry Zentkovich, RK&K

203 • WATER RESOURCE RECOVERY

3:30 PM – 4:00 PM

The State of the Biogas Washwater Treatment and Upgrading Market

Chengyan Zhang, Stantec Consulting Services Inc. (chengyan.zhang@stantec.com)

Dru Whitlock, Stantec Consulting Services Inc.

Nick Szoke, Stantec Consulting Services Inc.

David Socha, Stantec Consulting Services Inc.

Michael McWhirter, Stantec Consulting Services Inc.

4:00 PM – 4:30 PM

Increasing Treatment Capacity and Process Efficiency in a State-of-the-Art Water Resources Recovery Facility

Paula Sanjines, Jacobs Engineering (paula.sanjines@jacobs.com)

Hari Santha, Alexandria Renew Enterprises

Kacey King-McRae, Alexandria Renew Enterprises

Tim Constantine, Jacobs Engineering

4:30 PM – 5:00 PM

Status and Developments of Co-digestion in the US

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

Ron Appleton, Carollo Engineers

Rashi Gupta, Carollo Engineers

WEDNESDAY, AUGUST 28, 2019

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

204 • WATER SYSTEM INFRASTRUCTURE

8:30 AM – 9:00 AM

Philadelphia's Risk Reduction Approach to Master Planning

Thomas Spokas, Philadelphia Water Department (thomas.spokas@phila.gov)

Lauren Fahnestock, Brown and Caldwell

9:00 AM – 9:30 AM

Real-Time Hydraulic Modeling at DC Water

Russell Deason, Mott MacDonald (russell.deason@mottmac.com)

Alireza Parhami, DC Water

Essey Woldemariam, DC Water

9:30 AM – 10:00 AM

It Takes Two to Model Build: Combining SCADA Data with Operations Staff Knowledge Leads to Efficient Development of a Complex Hydraulic Model

Katherine Sager, Carollo Engineers (ksager@carollo.com)

Regina Stencil, Dallas Water Utilities

1:00 PM – 1:30 PM

A Towering Achievement

Carrie Kruger, Duffield Associates, Inc. (ckruger@duffnet.com)

George Niblett, The Town of Millsboro

1:30 PM – 2:00 PM

Putting Retired Quarries Back to Work

James O'Shaughnessy, Arcadis (james.o'shaughnessy@arcadis.com)

Kinsey Downes, Loudoun Water

Sarah Lothman, Loudoun Water

2:00 PM – 2:30 PM

Maryland's Newest Dam Preserves a Community's Most Valuable Resource

Sophia Liskovich, Gannett Fleming, Inc. (sliskovich@gfnet.com)

Richard Corbi, Maryland American Water

204 • WATER INFRASTRUCTURE

3:30 PM – 4:00 PM

Designed. Bid. Built: Considerations From the Contractor & Consultant on the Clinton Zone Transmission Main Project

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

Clay Greene, Garney Construction

WEDNESDAY, AUGUST 28, 2019

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

4:00 PM – 4:30 PM

Ocean City Subaqueous Water Mains – Eliminating Dead Ends
Allyson Merola, Whitman, Requardt & Associates, LLP (amerola@wrallp.com)

4:30 PM – 5:00 PM

Instant Water Main: Expedited Approach for the Design of Three Miles of Distribution Water Mains in Howard County
Chelsea Pearce, OBG, a part of Ramboll (chelsea.pearce@obg.com)
Joseph Conti, OBG, a part of Ramboll
Paul DiMarco, Howard County, Utility Design Division

205 • OPERATION & MAINTENANCE 1

8:30 AM – 9:00 AM

Improvements at the Eastern Avenue
Pumping Station to Improve Collection System Performance
Paul Deardorff, JMT (pdeardorff@jmt.com)
Ben Asavakarin, JMT
Misrak Shiferaw, City of Baltimore
Gurminder Singh, City of Baltimore

9:00 AM – 9:30 AM

A FOG Farewell:
Automated FOG Prevention Saves Time, $$$, and Prevents Odor
Tonya Chandler, Anue Water Technologies (tchandler@anuewater.com)

9:30 AM – 10:00 AM

The New P in Your Collection System Maintenance Program:
Predictive Maintenance
Alex Palmatier, HDR (alex.palmatier@hdrinc.com)
Jacob Mueller, HDR
Mike Leeds, HDR

205 • OPERATION & MAINTENANCE 2

1:00 PM – 1:30 PM

Pump Vibration and Surge Investigation
at Critical 460-MGD Combined Sewage Pumping Station
Edward Talbot, OBG, a part of Ramboll (ned.talbot@obg.com)
Bob Dudley, OBG, a part of Ramboll

WEDNESDAY, AUGUST 28, 2019

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

1:30 PM – 2:00 PM

Brentwood Park Sewage Pump Station Improvements: Tales from the Crypt
Anna Kazasi, Arcadis US (anna.kazasi@arcadis.com)
Steven Schulz, Harford County
Anuj Jain, Arcadis US
James O' Shaughnessy, Arcadis US

2:00 PM – 2:30 PM

If You Build It… They Will Complain?
Jonathan Gordon, HDR Engineering (jonathan.gordon@hdrinc.com)
Christopher Easter, HDR Engineering
Lawrence Hentz, HDR Engineering

205 • STUDY AND ASSESSMENT

3:30 PM – 4:00 PM

Zinc-Coated DIP Force Main Study:
Utility Applies Corrosion Engineering for Thorough Results
Andrew Fuller, AECOM (andrew.fuller@aecom.com)
Belinda Wilson, City of Virginia Beach Public Utilities
Brent Werlein, City of Virginia Beach Public Utilities
Will Gibson, AECOM

4:00 PM – 4:30 PM

Sewer Sleuthing of the Oxon Run Interceptor
to Remediate a Significant Overflow
Robert Bell, OBG, a part of Ramboll (robert.bell@obg.com)
Srinivasa Gadiparthi, DC Water

4:30 PM – 5:00 PM

Trunk Walk Manhole Inspections:
Obstacles and Challenges Require Unique Solutions
John Gresh, RJN Group, Inc. (jgresh@rjnmail.com)

206 • TREATMENT AND REGULATION

8:30 AM – 9:00 AM

True Grit: Retribution in the Wild West Grit Chamber
at DC Water's Blue Plains Advanced Wastewater Treatment Plant
Chanda Albrittain, DC WATER - Blue Plains Advanced WWTP (chanda.albrittain@dcwater.com)

WEDNESDAY, AUGUST 28, 2019

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

9:00 AM – 10:00 AM

America's Water Infrastructure Act of 2018
Requirements Now and into the Future
Patti-Kay Wisniewski, EPA Region III

206 • STORMWATER MANAGEMENT

1:00 PM – 1:30 PM

Second Mouse Gets the Cheese –
Maryland Phase II MS4s Should Benefit from Phase I Experience
Rebecca Winer-Skonovd, Biohabitats (rwinerskonovd@biohabitats.com)
Jennifer Missett, Biohabitats

1:30 PM – 2:00 PM

A Zero Sum Game? Testing out the new Maryland Nutrient Trading Program
Bill Meinert, OBG, a part of Ramboll (bill.meinert@obg.com)

2:00 PM – 2:30 PM

A Flexible Framework for Process-Based
Hydraulic & Water Quality Modeling of Best Management Practices
Arash Massoudieh, The Catholic University of America (massoudieh@cua.edu)

3:30 PM – 4:00 PM

Assessing a Full Delivery of Water Quality
Improvements Approach Three Years In: Lessons Learned
Erik Michelsen, Anne Arundel County Watershed Protection & Restoration Program (pwmich20@aacounty.org)

4:00 PM – 4:30 PM

Rising Waters: Protecting Fairfax County's Huntington Neighborhood
James O'Shaughnessy, Arcadis (james.o'shaughnessy@arcadis.com)
James Peaco, Arcadis

4:30 PM – 5:00 PM

Incorporating Stream Restoration Techniques in Stormwater Management
Meghan Gloyd, Biohabitats, Inc (mgloyd@biohabitats.com)
Doug Streaker, Biohabitats

THURSDAY, AUGUST 29, 2019

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

201 • ASSET MANAGEMENT

8:30 AM – 9:00 AM

Detecting High Risk Zones Using a Spatial Clustering of Pipe Breaks
Kate Zhao, Pure Technologies, Inc (kate.zhao@puretechltd.com)
Craig Daly, Pure Technologies
Thomas Chen, University of Michigan

9:00 AM – 9:30 AM

A Tiered Criticality Approach –
Developing a Rehabilitation Plan Using InfoMaster
Gert van der Walt, DC Water (gert.vanderwalt@dcwater.com)
Richard Luettchau, Mott MacDonald

9:30 AM – 10:00 AM

A Non-Revenue Water Tale of Five Cities
Tory Wagoner, P.E., Cavanaugh & Associates, P.A.
(tory.wagoner@cavanaughsolutions.com)

11:00 AM – 11:30 AM

Transitioning Stormwater Facility Maintenance from Reactive to Proactive:
An Experiment in Risk Assessment and Predictive Analytics
Eric Caldwell, Fairfax County Stormwater Maintenance
(eric.caldwell@fairfaxcounty.gov)

11:30 AM – 12:00 PM

Western Branch Denite Process Optimization –
A Step Beyond a Business Case Evaluation
Ann McPherson, Black & Veatch (mcphersona@bv.com)
Adebola Fashokun, Washington Suburban Sanitary Commission
Mike Hanna, Black & Veatch

12:00 PM – 12:30 PM

Optimization of WSSC's Water Main Replacement Program
Adolfo Carpio, Washington Suburban Sanitary Commission
(adolfo.carpio@wsscwater.com)
Ahmet Ozman, Black & Veatch
Brian Halloran, Washington Suburban Sanitary Commission
Joshua Cantone, Optimatics

THURSDAY, AUGUST 29, 2019

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

2:00 PM – 2:30 PM

Budget vs Needs – The Secret of Pipeline Renewal Defect Prioritization

Sonia Oton, Mott MacDonald (sonia.oton@mottmac.com)

Alireza Parhami, DC Water

Gert van der Walt, DC Water

Bisrat Abebe, DC Water

William Darrow, Mott MacDonald

2:30 PM – 3:00 PM

What Goes Down, Must Get Pumped Back Up – How Pump Station Asset Evaluation Helps to Optimize Performance & Pay for Capital Improvements

Andrew Casolini Dal Bo, Wendel (lglose@wendelcompanies.com)

3:00 PM – 3:30 PM

Leveraging Analytics to Make Risk-Based Capital Investment Decisions

Kevin Slaven, Arcadis (kevin.slaven@arcadis.com)

4:00 PM – 4:30 PM

Vallejo Flood and Wastewater District's
Pragmatic Asset Management Journey

Charles Card, GHD (charles.card@ghd.com)

Mert Muftugil, GHD

Gage Muckleroy, GHD

Johnson Ho, Vallejo Flood and Wastewater District

4:30 PM – 5:00 PM

The Cost Benefits of In Situ Electric Motor Testing

Jay Marchi, ProPump Services (jmarchi@propumpservices.com)

5:00 PM – 5:30 PM

Incorporating the Lateral Sewer Asset Registry into GIS: Supporting the Enterprise Infrastructure

Doug Adams, Baltimore County Department of Public Works (dadams@baltimorecountymd.gov)

Ed Carpenetti, Baltimore County Department of Public Works

THURSDAY, AUGUST 29, 2019

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

202 • UTILITY MANAGEMENT

8:30 AM – 9:00 AM

EPC Advantages and Why Should Utility Owners Consider It

Elik Livay, Gannett Fleming, Inc. (elivay@gfnet.com)

9:00 AM – 9:30 AM

Critical Separation:
AlexRenew's Solution to a Fast-Track CSO Remediation Program

Liliana Maldonado, Alexandria Renew Enterprises (liliana.maldonado@alexrenew.com)

Caitlin Feehan, Alexandria Renew Enterprises

Bridget Kocot, Brown and Caldwell

Justin Carl, Brown and Caldwell

9:30 AM – 10:00 AM

10 Years of Progress – WSSC's GHG Inventory Report Card

Miranda Santucci, Jacobs (miranda.santucci@jacobs.com)

Paula Sanjines, Jacobs

Robert Taylor, Washington Suburban Sanitary Commission (WSSC)

Carolyn Meisner, Jacobs

202 • EMERGENCY PREPAREDNESS & RESILIENCY

11:00 AM – 11:30 AM

Emergency Bypass Procedures
for Arlington County's Wastewater Pump Stations

Daniel Gilroy, CDM Smith (gilroyd@cdmsmith.com)

Armin Vakili, CDM Smith

Joseph Cogswell, Arlington County

11:30 AM – 12:00 PM

Preparing for the Silver Tsunami:
A Place in the Water Workforce for GED to PhD

Morgan Brown, Water Environment Federation (mbrown@wef.org)

Bri Nakamura, Water Environment Federation

THURSDAY, AUGUST 29, 2019

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

12:00 PM – 12:30 PM

Pipeline Resiliency to Survive L.I.D – An Endurance Test by Design?
Steve Bian, DC Water and Sewer Authority (steve.bian@dcwater.com)
Mark Babbitt, DC Water and Sewer Authority
Brian McDermott, DC Water
Tahir Qureshi, DC Water

202 • UTILITY MANAGEMENT

2:00 PM – 2:30 PM

Get Ready to Rumble! Alternative Delivery Panel Discussion from Three Different Perspectives
Paul Delphos, AECOM (paul.delphos@aecom.com)

2:30 PM – 3:00 PM

The Smart Start: Workforce Gaps in Intelligent Water Systems
Brianne Nakamura, Water Environment Federation (bnakamura@wef.org)

3:00 PM – 3:30 PM

Outreach & Communication for Today's Water Customer
Carita Parks, HDR (carita.parks@hdrinc.com)

4:00 PM – 4:30 PM

Sun Shines Brightly on Latest Cecil County Solar Project
Chris Mansfield, GHD Inc. (chris.mansfield@ghd.com)
Phil Muzik, Cecil County Department of Public Works
Thor Young, GHD Inc.
Mark Durrett, Department of Public Works

4:30 PM – 5:00 PM

A Best-Practice Approach to Affordability:
How WSSC is Re-tooling its Customer Assistance Programs to Better Meet the Needs of its Low-income Customers
Crystal Knight-Lee, Washington Suburban Sanitary Commission (crystal.kight-lee@wsscwater.com)
Jay Sakai, 4Tenets Consulting, LLC

5:00 PM – 5:30 PM

How to Score when Planning Your Capital Program Projects
Robert Krallinger, Stantec (robert.krallinger@stantec.com)
Nathan Griffin, Prince William County Service Authority
Chengyan Zhang, Stantec

THURSDAY, AUGUST 29, 2019

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

203 • NUTRIENT REMOVAL & PROCESS OPTIMIZATION

8:30 AM – 9:00 AM

Aerobic Granular Sludge Bioaugmentation in Low-SRT Flocculent Activated Sludge: Bench-Scale Demonstration and Pilot Testing

Bryce Figdore, HDR (bryce.figdore@hdrinc.com)

9:00 AM – 9:30 AM

Why Consider P Recovery and How to Select the Right Technology for Your WRRF

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

Bryan Coday, Carollo Engineers

9:30 AM – 10:00 AM

Starting of the DEMON

Christopher Cusic, DC Water (christopher.cusic@dcwater.com)

Miguel Miranda, DC Water

Shawna Martinelli, DC Water

Christopher Cusic, DC Water

203 • DISINFECTION

11:00 AM – 11:30 AM

Comparative Inactivation of Norovirus and MS2 Bacteriophage by Peracetic Acid & Monochloramine in Municipal Secondary Wastewater Effluent

Joseph Jacangelo, Stantec and The Johns Hopkins University (joseph.jacangelo@stantec.com)

Kellogg Schwab, The Johns Hopkins University

11:30 AM – 12:00 PM

Evaluation of Peracetic Acid as an Alternative Disinfectant at WSSC's Parkway WRRF

Yerman Saavedra, Washington Suburban Sanitary Commission (yerman.saavedra@wsscwater.com)

Malcolm Taylor, WSSC

Beth Maloney, Stan Tec

Caroline Nguyen, WSSC

Joseph Jacangelo, Stan Tec

THURSDAY, AUGUST 29, 2019

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

12:00 PM – 12:30 PM

Consistent Compliance with Low Level Nutrient Limitations, Extreme Flow & Load Variation Using a Small System Membrane Bioreactor
Laura Marcolini, Laura Marcolini & Associates, Inc. (laura@lmainc.us)
Brandon Friedland, Innovative Treatment Products LLC

203 • WATER RESOURCE RECOVERY

2:00 PM – 2:30 PM

What Are My Options When I Need a Solids System Upgrade Focused on Maximizing Biogas Production & Use?
John Revette, Wendel (lglose@wendelcompanies.com)

2:30 PM – 3:00 PM

Optimizing Plant Performance with "Smart" Operations
Kacey King-McRae, Alexandria Renew Enterprises (kacey.king-mcrae@alexrenew.com)
James Atkinson, Alexandria Renew Enterprises
Paula Sanjines, Jacobs Engineering

3:00 PM – 3:30 PM

Alternative Advanced Treatment Approaches for Reduced Capital and Operating Costs – Technologies & Case Studies
Jeremy Koch, AECOM (jeremy.koch1@aecom.com)
Grant Davies, AECOM
Paul Delphos, AECOM
Beverly Stinson, AECOM

203 • BIOSOLIDS MANAGEMENT

4:00 PM – 4:30 PM

Worthless Dust or Valuable Resource?
Drying Thermally Hydrolyzed Solids the Right Way
Stephanie Spalding, HDR (stephanie.spalding@hdrinc.com)
Sebastian Smoot, HDR

4:30 PM – 5:00 PM

Conversion of Conventional Aerobic Digesters to an Autothermal Thermophilic Aerobic Digestion (ATAD) process for Class A Biosolids
John Cannon, GHD (john.cannon@ghd.com)
Thor Young, GHD

THURSDAY, AUGUST 29, 2019

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

5:00 PM – 5:30 PM

From OIG to PFAS and Beyond:
Understanding the Current State of Biosolids
Patrick Dube, Water Environment Federation (pdube@wef.org)

204 • WATER SYSTEM INFRASTRUCTURE

8:30 AM – 9:00 AM

Shedding Light on Getting Power to Remote Sensor... the Solar Option
Michael Mulcare, Mott MacDonald (michael.mulcare@mottmac.com)

9:00 AM – 9:30 AM

Evaluation of Acoustic & Satellite Leak Detection Technologies and Preliminary Development of Large-Scale Leak Detection Program
Sara Titus, WSSC (sara.titus@wsscwater.com)
Keith Tyson, WSSC
James Haldeman, WSSC
Blen Jimma, WSSC

9:30 AM – 10:00 AM

Flow by Night: Keep a SCADA Outage From Shutting Down Your System
Jonathan Reuther, Mott MacDonald (jonathan.reuther@mottmac.com)
Kenrick St. Louis, DC Water
Craig Benson, Mott MacDonald

11:00 AM – 11:30 AM

Frazil Ice Intake Challenges –
Balancing Environmental Impacts with Plant Operations
Meric Selbes, Hazen and Sawyer (mselbes@hazenandsawyer.com)
Jeremy Hise, Hazen and Sawyer
Aaron Duke, Hazen and Sawyer
Priscilla To, Washington Sanitary Suburban Commission

11:30 AM – 12:00 PM

Water Treatment Intake System Investigation and Upgrade Design –
Case Study: The City of Havre de Grace Water Intakes System
Christopher Overcash, EA Engineering, Science, and Technology, Inc., PBC (covercash@eaest.com)

THURSDAY, AUGUST 29, 2019

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

12:00 PM – 12:30 PM

Modeling Framework to Support
Water Resource Appropriations and Dam Operations
Josh Weiss, Hazen and Sawyer (jweiss@hazenandsawyer.com)
Jeremy Hise, Hazen and Sawyer
Nancy Hausrath, City of Hagerstown
Mike Spiker, City of Hagerstown

2:00 PM – 2:30 PM

Trenchless Success Story for Water Main Rehabilitation
Christopher Garrett, Brown and Caldwell (cgarrett@brwncald.com)
Scott Farmer, Greenville Utilities Commission

2:30 PM – 3:00 PM

Considerations for Tunneling Water Conduits through Rock Formations
James Parkes, Schnabel Engineering (jparkes@schnabel-eng.com)

3:00 PM – 3:30 PM

Rehoboth HDD Ocean Outfall
Craig Camp, GHD (craig.camp@ghd.com)

4:00 PM – 4:30 PM

Flushing of Premise Plumbing After Full Lead Service Line Replacements: Field Studies in Washington, D.C.
Kai Loon Chen, DC Water (kailoon.chen@dcwater.com)
Maureen Schmelling, DC Water
Richard Brown, Cornwell Engineering Group

4:30 PM – 5:00 PM

Introduction of Equipment and Methods for Flow/Pressure Testing Hydrants
Pat Burke, Ferguson Waterworks (pat.burke@ferguson.com)

5:00 PM – 5:30 PM

Lessons Learned from Urban On-Call Emergency Water Main Repairs
Jeb Bortz, Dewberry Engineers Inc. (jbortz@dewberry.com)
Daniel Sullivan, City of Baltimore Department of Public Works

205 • PROJECT DELIVERY - 1

8:30 AM – 9:00 AM

PS-6 Design and Construction: How to Build a
28 MGD Self-Cleaning Wet Well Pumping Station in 14 Months
Anthony Elberti, Gannett Fleming, Inc. (aelberti@gfnet.com)

THURSDAY, AUGUST 29, 2019

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

9:00 AM – 9:30 AM

Rehabilitation of 125' Deep Leaking Brick Manhole Leading to Degraded 350', 78" x 66", Egg-Shaped Brick Culvert Utilizes Geopolymer Mortar & Precision Application Processes

Steve Henning, Vortex Companies (stevehenning@vortexcompanies.com)

9:30 AM – 10:00 AM

Influent Junction… What's Your Function!? [A Complex Collaboration Effort under a CMAR]

Joshua Rodgers, HDR (josh.rodgers@hdrinc.com)

Monty Simon, JMT

205 • PROJECT DELIVERY - 2

11:00 AM – 11:30 AM

Forensics of a Successful Stream Restoration &
Sewer Asset Protection Project – Design, Construction, and Reality

Lawrence Latour, Hazen and Sawyer (llatour@hazenandsawyer.com)

Paul Le Bel, Hazen and Sawyer

11:30 AM – 12:00 PM

Relining the Four Mile Run Relief Sewer Line:
Construction Management Challenges

Hisham Wahdan, Arlington County (hwahdan@arlingtonva.us)

Carla Alayon, Arlington County

12:00 PM – 12:30 PM

Keeping it Clean – Hydraulic Advantages of
Self-Cleaning Trench Style Sewage Pumping Stations

Robert Geist, GHD (bob.geist@ghd.com)

Steven Carter, GHD

Thor Young, GHD

205 • PROJECT DELIVERY - 3

2:00 PM – 2:30 PM

Protecting the Susquehanna River:
Upgrades to the Front Street Pumping Station

Ben Asavakarin, Johnson, Mirmiran & Thompson (basavakarin@jmt.com)

Paul Deardorff, Johnson, Mirmiran & Thompson

Sarah Bunk, Johnson, Mirmiran & Thompson

Jeff Bowra, Capital Region Water

THURSDAY, AUGUST 29, 2019

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

2:30 PM – 3:00 PM

AlexRenew's Drop Shaft Design and Physical Modeling
Liliana Maldonado, Alexandria Renew Enterprises (liliana.maldonado@alexrenew.com)
Kelvin Coles, Brown and Caldwell
Caitlin Feehan, Alexandria Renew Enterprises
Justin Carl, Brown and Caldwell

3:00 PM – 3:30 PM

Collaborative Construction Scheduling
Expedites Successful Pump Station Start-up
Ted Denny, HDR Engineering Inc. (theodore.denny@hdrinc.com)
Eddie Abisaab, Hampton Roads Sanitation District
Jason Kerns, HDR Engineering
Christopher Painter, HDR Engineering

205 • SSO & BASEMENT BACKUP

4:00 PM – 4:30 PM

Collection System Challenges in Urban Settings and Innovative Solutions
Carlos Espinosa, Baltimore City DPW – Office of Asset Management (carlos.espinosa@baltimorecity.gov)

4:30 PM – 5:00 PM

Looking Back to Look Forward:
Getting to the Root Causes of BBKs and SSOs
Jessica Shiao, WSSC (jessica.shiao@wsscwater.com)
Cece Nguyen, Brown and Caldwell
Ramesh Alajangi, Environ-Civil Engineering

5:00 PM – 5:30 PM

Reaching Across the Aisle to Address
Basement Backups & Street Flooding in our Nation's Capital
Anthony Laufik, Greeley and Hansen (alaufik@greeley-hansen.com)
Sri Gadiparthi, DC Water

THURSDAY, AUGUST 29, 2019

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

206 • WATER TREATMENT

8:30 AM – 9:00 AM

Two Centuries of Fighting Waterborne Disease: The Battle Rages On
John Moore, RK&K (jmoore@rkk.com)

9:00 AM – 9:30 AM

UCMR4 – What Are We Seeing for the First Half and What Are the Issues?
William Lipps, Eurofins Eaton Analytical, Inc. (williamlipps@eurofinsus.com)

9:30 AM – 10:00 AM

Getting the Lead Out – Dealing With Our Country's Lead Pipe Legacy
Paul Nyffeler, AquaLaw PLC (pnyffeler@aqualaw.com)
Chris Pomeroy, AquaLaw PLC
Paul Calamita, AquaLaw PLC

11:00 AM – 11:30 AM

Investigating Water Quality & Microbiological Parameters Related to the DC Water Free Chlorine Disinfection Period
Garrett Stillings, DC Water (garrett.stillings@dcwater.com)
Katherine Alfredo, DC Water

11:30 AM – 12:00 PM

Simultaneous Manganese Control and DBP Treatment Strategy at WSSC's Potomac Water Filtration Plant
Dinesh Bahadursingh, Washington Suburban Sanitary Commission (dinesh.bahadursingh@wsscwater.com)
Caroline Nguyen, Washington Suburban Sanitary Commission
Priscilla To, Washington Suburban Sanitary Commission

12:00 PM – 12:30 PM

Comprehensive Piloting of Innovative Process Combinations to Control Disinfection By-Products & Manganese
PJ Crow, OBG, a part of Ramboll (pj.crow@obg.com)
Narayan Venkatesan, OBG, a part of Ramboll

2:00 PM – 2:30 PM

When Algaecides Can't Cut It: Algae Treatment by Air and Sonication
Kelsey Kenel, HDR (kelsey.kenel@hdrinc.com)
Christina Alito, HDR

THURSDAY, AUGUST 29, 2019

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

2:30 PM – 3:00 PM

Preoxidation Strategies for Reducing Disinfection Byproducts – Don't Forget About Disinfection!

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

Aron Griffin, Hazen and Sawyer

Meric Selbes, Hazen and Sawyer

Craig Lambert, City of Frederick

Robert Rosenberg, City of Frederick

3:00 PM – 3:30 PM

P-F-What? Unregulated Contaminants and the Path to Regulation

Paul Nyffeler, AquaLaw PLC (pnyffeler@aqualaw.com)

Chris Pomeroy, AquaLaw PLC

Paul Calamita, AquaLaw PLC

4:00 PM – 4:30 PM

The Waters of Life – Protecting Our Veterans with a State of the Art Membrane Plant

John Civardi, Mott MacDonald (john.civardi@mottmac.com)

Brian Aylaian, Mott MacDonald

4:30 PM – 5:00 PM

Comparing the Microbial Community and Water Quality Changes During Biofilters Acclimation Period

William Morales-Medina, Rutgers University (william.morales8@upr.edu)

Priscilla To, Washington Suburban Sanitary Commission

Malcolm Taylor, Washington Suburban Sanitary Commission

Caroline Nguyen, Washington Suburban Sanitary Commission

5:00 PM – 5:30 PM

Using Zeta Potential to Achieve Optimum Water Treatment Performance

Nicolle Boulay, Stantec (nboulay@stantec.com)

FRIDAY, AUGUST 30, 2019

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

201 • UTILITY MANAGEMENT

8:30 AM – 9:00 AM

How to Eat an Elephant… A Phased Approach to Implementing an Asset Management Plan – Napa Sanitation, Napa, CA

Kathleen Zynda, GHD (kathleen.zynda@ghd.com)

Robin Gamble, Napa Sanitation District

9:00 AM – 9:30 AM

Challenges of Developing a Sewage Pump Station Asset Inventory Program

John Van Ness, Baltimore County DPW, Bureau of Utilities (vanness@baltimorecountymd.gov)

Paul Sayan, Louis Berger

9:30 AM – 10:00 AM

Implementing and Challenges Involved in Conducting AWWA Water Audit

Golnaz Khorsha, PhD, Baltimore City Department of Public Works (golnaz.khorsha@baltimorecity.gov)

10:00 AM – 10:30 AM

Resiliency Planning for Water and Wastewater Utilities – Effective Preparation

Craig Benson, Mott MacDonald (craig.benson@mottmac.com)

Michael Mulcare, Mott MacDonald

201 • UTILITY MANAGEMENT

10:30 AM – 11:00 AM

Howard County Exposed Pipeline Rehabilitation, Prioritization and Protection

Silver Chai, Howard County (schai@howardcountymd.gov)

Shannon Lucas, KCI Technologies, Inc.

11:00 AM – 11:30 AM

Managing Aggressive Project Delivery

William Gilman, Brown and Caldwell (bgilman@brwncald.com)

202 • UTILITY MANAGEMENT

8:30 AM – 9:00 AM

What It Really Takes to Implement Remote Water Quality Monitoring

Michael Mulcare, Mott MacDonald (michael.mulcare@mottmac.com)

Essey Woldemariam, DC Water

FRIDAY, AUGUST 30, 2019

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

9:00 AM – 9:30 AM

Addressing America's Water Infrastructure Act
of 2018 with Asset Management Tools
Timothy Taber, Barton & Loguidice, DPC (ttaber@bartonandloguidice.com)

9:30 AM – 10:00 AM

Of the People, By the People, For the People –
Data Democratization at Newport News Waterworks
Aditya Ramamurthy, Hazen and Sawyer
(aramamurthy@hazenandsawyer.com)

10:00 AM – 10:30 AM

Have We Gone Too Far? Improving the
Engineering Consultant Industry by Balancing Risk & Judgment
Paul Sayan, Louis Berger (psayan@louisberger.com)
Tom Kiefer, Baltimore County Department of Public Works

10:30 AM – 11:00 AM

The New Validation Standard for AWWA Water Auditing –
Evolutions in Water Audit Validation & Regulatory Requirements
Will Jernigan, Cavanaugh & Associates, P.A.
(will.jernigan@cavanaughsolutions.com)

11:00 AM – 11:30 AM

How Much Flow? Determining Wastewater
Flow Factors From Water Billing and Land Use Data
Charles Moore, CDM Smith (mooreci@cdmsmith.com)
Anna Neugebauer, CDM Smith
Thomas Hilton, Washington Suburban Sanitary Commission

203 • TECHNOLOGY APPLICATIONS & IMPLEMENTATION

8:30 AM – 9:00 AM

Saving Energy and Money through Better Wastewater Treatment Plant Mixing
Michele Braas, Xylem, Inc. (mlbraas@gmail.com)

9:00 AM – 9:30 AM

Case Study of Blending Blowers for Optimum Efficiency
Paul Petersen, Atlas Copco Compressors
(paul.petersen@us.atlascopco.com)

FRIDAY, AUGUST 30, 2019

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

9:30 AM – 10:00 AM

A Case Study on the Moorefield Wastewater
Treatment Plant System Upgrade with the MOB™ Process
Jason Calhoun, Nuvoda US (jason@nuvodaus.com)
Sage Chang, Nuvoda US

10:00 AM – 10:30 AM

Be the Dog Not the Tail – Control the Process
Robert Hindt, Little Patuxent Water Reclamation Plant (rhindt@howardcountymd.gov)

10:30 AM – 11:00 AM

How Diverting Organic Materials from Landfills
affect Water Resource Recovery Facilities in California
Engin Guven, Black & Veatch (guven.engin@gmail.com)
Joerg Blischke, Black & Veatch
Scott Carr, Black & Veatch

11:00 AM – 11:30 AM

Peak Flow Dual-Use Filters Also Help Meet Dry-Weather Goals
Jim Fitzpatrick, Black & Veatch (fitzpatrickjd@bv.com)
Mike Hanna, Black & Veatch
Bob O'Bryan, Black & Veatch
Bently Green, Black & Veatch

204 • WATER SYSTEM INFRASTRUCTURE

8:30 AM – 9:00 AM

Cranking Up the Pressure in DC –
Lessons Learned from Starting Up a New Pressure Zone in DC
Jason Garz, Mott MacDonald (jason.garz@mottmac.com)
Deidre Saunders, DC Water
Getachew Melsew, DC Water

9:00 AM – 9:30 AM

Streamlining System Analysis Through Optimization –
Integration of Hydraulic & Optimization Models
Aman Tuteja, Arcadis (atuteja1@gmail.com)
Patrick Parault, Arcadis
Kimberly Six, WSSC

FRIDAY, AUGUST 30, 2019

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

204 • WATER SYSTEM INFRASTRUCTURE

9:30 AM – 10:00 AM

A Unique Solution to Flooding Removal in the CSX Howard Street Tunnel
Justin Kirk, Clark Construction Group, LLC
(justin.kirk@clarkconstruction.com)

10:00 AM – 10:30 AM

Implementing Innovative Stormwater
Capture and Infiltration for Groundwater Stabilization
Fernando Pasquel, Arcadis (fernando.pasquel@arcadis.com)

10:30 AM – 11:30 AM

Ethics, Discipline, and Protecting the Public:
A Discussion of Engineering Ethics for P.E.s
Paul Nyffeler, AquaLaw PLC

205 • MODELING APPLICATIONS

8:30 AM – 9:00 AM

Long-Term Corrosion Prevention Program
Eyasu Yilma, DC Water (eyasu.yilma@dcwater.com)
Abhiram Satyadev, DC Water

9:00 AM – 9:30 AM

Delaware's Next Top (Hydraulic) Model
Carl Rios, JMT (crios@jmt.com)

9:30 AM – 10:00 AM

Using Next Century Tech to Solve Last Century's Problems
Jennifer Steffens, EmNet, a Xylem Brand (jsteffens@emnet.net)

10:00 AM – 10:30 AM

The Million Dollar Question –
What to Do with Waste from Wastewater Pump Stations?
Sarah Taylor, Gannett Fleming, Inc. (sntaylor@gfnet.com)
Elik Livay, Gannett Fleming, Inc.

10:30 AM – 11:00 AM

Design, Startup and Operation of New Effluent Filters, UV, and Lime
Stabilization Processes at the Salisbury WWTP
Peter Schuler, Brown and Caldwell (pschuler@brwncald.com)
Amanda Pollack, City of Salisbury
George Anipsitakis, Brown and Caldwell

FRIDAY, AUGUST 30, 2019

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

11:00 AM – 11:30 AM

Enhanced and Simple Wet Weather Treatment with Pile Cloth Media Filtration

John Dyson, Aqua-Aerobic Systems, Inc. (jdyson@aqua-aerobic.com)

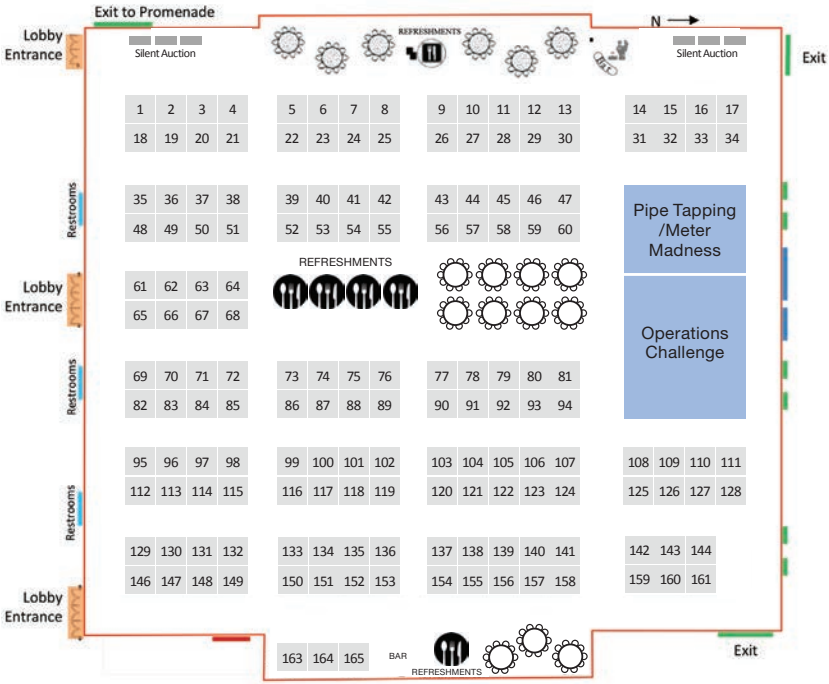

EXHIBIT HALL HOURS:

Tuesday, August 27
Exhibitor Move-In
8:00 AM – 7:00* PM
*New Time!

Wednesday, August 28
7:30 AM – 5:30 PM

Thursday, August 29
7:30 AM – Noon

Thursday, August 29
Exhibitor Move-Out
Noon – 4:00 PM

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

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Conference Management ..... Rob Penman
CTA Board Liaison ..... Eric Held
Delaware Events ..... Joe Nattress
Diversification Management ..... Rebecca Jimenez
Government Affairs ..... J. Scott Shipe
Manufacturers/Engineers Resource Council (MERC) ..... Eric Held
MDE Liaison ..... Jay Price
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Spring Meeting ..... Abbie Smith
Strategic Outreach ..... Aaron Duke
Student Activities ..... Anna Kazasi
Tri-Con Technical Program ..... Sophia Liskovich
US EPA Small Systems Training ..... John Moore
Utilities ..... Chein-Chi Chang
Water Distribution ..... Nick Lewis
Water For People ..... Carrie Kruger
Water Quality ..... Jeremy Hise
Water ReUse (Joint with CWEA) ..... Kelly Landry
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Bylaws Chair ..... Alan Will
Collection Systems Chair ..... David Rockacy
Collection Systems Vice Chair ..... Chris Korpman
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Delaware Trustee .....Prabhu Chandrasekeran
MD Trustee..... Clarence Beverhoudt
WEF Delegate.....James Shelton

The Conference Committee has negotiated competitive pricing for room blocks with several Ocean City hotels for the 2019 Tri-Association Conference. Conference rates are available Monday, August 26 through Thursday, August 29, 2019 (Friday checkout). **Room blocks at each hotel are limited, and most room blocks close July 26, 2019, so make your reservations early to get your choice of hotel.** To obtain the Conference rate, you must call the hotel directly and ask for the "Tri-Association Conference" rate. Many of the hotels have offered reduced rates before and/or after the Conference but you must ask them specifically for this reduced rate.

IMPORTANT – Maryland school systems are still on summer break during the conference, so please book your rooms as early as possible!

Hotel & Location	Miles to Convention Center	Room Type*	Conference Rates	Hotel Phone Number & Website
Aloft Ocean City 4501 Coastal Hwway	1.1	H	$249	800-228-2800
Beach Plaza Hotel 1301 Atlantic Avenue	1.9	H, E, C	$129, $139, $159	410-289-9121 800-492-5834 *www.beachplazaoc.com*
Best Western OC Hotel & Suites 55th Street	1.0	H, S	$140 (hotel); $160 (suite)	443-664-4001 866-664-4004 *www.bestwesternocsuites.com*
Clarion Resort Fontainebleau Hotel 101st Street	3.4	H, C	$157–$187 (hotel); $200–355 (condo)	410-524-3535 800-638-2100 *www.clarionoc.com*
Comfort Inn Gold Coast 112th Street	4.1	H	$109	410-524-3000 *www.comfortgoldcoast.com*
Commander Hotel & Suites 14th Street & Boardwalk	1.8	H, S	$249–$269	888-289-6166 410-289-6166 *www.commanderhotel.com*
Dunes Manor Hotel 28th Street	1.0	H	$219	410-289-1100 800-523-2888 *www.dunesmanor.com*
Dunes Boardwalk Suites 2716 Atlantic Avenue	0.9	S	$199	410-289-1100 800-523-2888
Grand Hotel 21st Street	1.4	E	$138–$168	410-289-6191 800-447-6779 *www.grandhoteloceancity.com*
*H - Hotel, E - Efficiency, S - Suite, C - Condominium				

HOTEL INFORMATION

Hotel & Location	Miles to Convention Center	Room Type*	Conference Rates	Hotel Phone Number & Website
Holiday Inn Oceanfront Hotel 67th Street	1.6	E	$219–$299	410-524-1600 800-837-3588 *www.holidayinnoceanfront.com*
Hyatt Place 1 16th Street	1.7	H	$259–$399	410-213-5333
Marriott Residence Inn 61st Street Bayside	1.8	H, S	$259–$419	410-723-2222 877-688-8057
Princess Bayside 48th Street	0.5	H, E	$99–$149	410-723-2900 800-854-9785 *www.princessbayside.com*
Princess Royale (Host Hotel) 91st Street	3.0	S, C	$149 (hotel); $399 (condo)	410-524-7777 800-4ROYALE *www.princessroyale.com*
Quality Inn Oceanfront 54th Street	1.0	H	$169–$259	410-524-7200 800-827-3586 *www.qioceanfront.com*
Doubletree Oceanfront 33rd Street	0.8	S	$269–$349	410-289-1234 *www.qibeachfront.com*
Sea Bay Hotel 60th Street	1.0	H	$100–$146	410-524-6100 800-888-2229 *www.seabayhotel.com*
CG – Carousel Oceanfront Hotel & Condos 117th Street	4.2	H, C	$135–$255	800-641-0011 *www.carouselhotel.com*
CG – Atlantic Ocean-front Inn 46th Street	0.7	H	$135–$215	800-641-0011 *www.carouselhotel.com*
CG – Bonita Beach Hotel 82nd Street	2.6	H	$95–$115	800-641-0011 *www.carouselhotel.com*
CG – Crystal Beach Oceanfront Hotel 25th Street	1.4	H	$95–$235	800-641-0011 *www.carouselhotel.com*
CG – Coastal Palms Inn & Suites 121st Street	4.4	H, S	$85–$125	800-641-0011 *www.carouselhotel.com*
CG – Tidelands Caribbean Hotel & Suites 5th Street	2.5	H, S	$95–$195	800-641-0011 *www.carouselhotel.com*
*H - Hotel, E - Efficiency, S - Suite, C - Condominium				

EARLY BIRD REGISTRATION RATES

(Early Bird Registration ends August 6, 2019 at 11:59 PM, after which time Standard Rates apply. Standard Rates are $75.00 more than Early Bird rates shown in the table.)

Registration Options	Member	Certified Operator	Non-Member	Full-Time Student	Retiree
Full Conference: Complete Package	$290	$240	$360	N/A	N/A
Full Conference: No Ticketed Events	$240	$190	$310	$65	$125
One-Day Registration: Wednesday	$190	$140	$260	$25	N/A
One-Day Registration: Thursday	$190	$140	$260	$25	N/A
One-Day Registration: Friday	$90	$90	$150	$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 2019 Tri-Association Conference online. You can access registration through the conference website: www.ChesapeakeTriCon.org

Early Bird Registration ($75 savings) ends: August 6, 2019 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.

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 (CSAWWA, CWEA, or WWOA).

Full Conference: No Ticketed Events

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

One-Day Registration

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

ADDITIONAL SELECTIONS

Pre-Conference Workshops – Tuesday, August 27, 2019

- **Lessons Learned: Insider Advice on MS4 Permit Compliance from MS4s Around the Region (MDE):** 1:00 PM to 5:00 PM. *Early Bird Registration Cost: $35/Standard Registration Cost $45*
- **Cross Connection Programs – Keeping Your Water Safe (UF TREEO):** 1:00 PM to 5:00 PM. *Early Bird Registration Cost: $35/Standard Registration Cost $45*

Golf at the Ocean City Golf Club – Tuesday, August 27, 2019

The Pre-Conference Golf Outing will be held on Tuesday at the Ocean City Golf Club. Sign-in 10:30 AM to 12:00 PM with Shotgun start at 12:00 PM. Golf registration is handled separately from conference registration. Register online at: *www.ChesapeakeTricon.org. Cost: $100 per individual and $360 for a foursome.*

5K Water For People Fun-Run/Walk – Wednesday, August 28, 2019

The 5K WFP 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*

Operator Process Classes – Wednesday, August 28, 2019

Hypochlorite Disinfection (TRE 5456-13-11: All Operators – Process) or Applied Process Mathematics (TRE 6026-16-11: All Operators – Process)

The Tri-Association Conference will sponsor two training classes for operator process credits on Wednesday, August 28 from 8:00 AM to 4:00 PM. The classes will be conducted by MCET and are approved for operators and superintendents. Attendees will earn 7 hours of process credit plus additional 3.5 hours of process credit with a passing Post Test (must attend the entire class to receive any credit). Please note: You must first register for the conference in order to attend this training. Classes are limited to 40 students each. Cost: $35 per ticket.

Women's Networking Event – Wednesday, August 28, 2019

Never have I ever… Tri-Con Edition! Join us for a game-themed women's networking happy hour on Wednesday, August 28, 2019 starting at 5:00 PM! We'll feature interactive discussions with female water infrastructure experts, at various career stages, sharing their experiences in the water/wastewater industry. Share your story and photo on LinkedIn, Twitter, Facebook or any other social media network using #WomenImpactingWater.

Fun Night at Seacrets – Wednesday, August 28, 2019

Note: Seacrets tickets must be purchased by Tuesday, August 27, 2019. NO INDIVIDUAL TICKETS WILL BE SOLD AT THE CONFERENCE ON WEDNESDAY OR AT THE DOOR. Must be 21 years or older to enter. *Cost: $65 per ticket.*

Business Luncheons/Meetings – Thursday, August 29, 2019

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. *Cost: $40 per ticket.*

Young Professionals Happy Hour – Thursday, August 29, 2019

Back again this year! All are welcome to join the Young Professionals on Thursday, August 29, 2019 for a fun night of networking! We will be enjoying happy hour and appetizers at Skye Bar on 66th Street from 6:30 PM to 9:30 PM. Registration cost is $10 and includes one happy hour drink andappetizers. Walk-ins are welcome to come and pay your own way.

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: $125 per guest.* Guest tickets are intended for those 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 2019 Tri-Association Conference name badge between Tuesday, August 27, 2019 at 2 PM and Friday, August 30, 2019 at noon.

THE FINE PRINT

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 (see "Contact the Registrar" for email address) and received by the Registrar no later than August 6, 2019 at 11:59 PM. Refunds will be issued minus a 20% administrative fee for cancellations received before August 6, 2019 at 11:59 PM. No refunds will be issued for requests received after August 6, 2019 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 Cyber Café or at the On-Site 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 *tricon2019@rcsreg.com* or (805) 654-0171.

For all other general conference information, please email us at *info@ChesapeakeTricon.org*. We will respond within one business day.

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

CONFERENCE NOTES

Our team at

Craig Kelman & Associates

is proud to partner with CSAWWA, CWEA, and WWOA to publish the official

Tri-Association Conference

program each year.

We wish you a successful conference this August in Ocean City, Maryland!

Craig Kelman & Associates

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