Optimizing Wet-Weather Flow Management: Insights from a Business Case Evaluation
Wednesday 8/27/2025, 8:30:00 AM, Room 201

Primary Author: Elizabeth Shearn, Project Manager, WSSC Water

The Western Branch Water Resource Recovery Facility (WRRF) faced severe wet-weather events, leading to significant rainfall-dependent inflow and infiltration. A Business Case Evaluation was initiated, assessing various alternatives and selecting the best-fit technology. A Lifecycle Cost Analysis and Risk Reduction Analysis were utilized to inform the selection of the final alternative. This presentation will dive into the strengths, weaknesses, and key considerations of each alternative, and the process to select the technology that would best mitigate Western Branch WRRF's high flows.

Elizabeth Shearn is a seasoned professional with over 15 years of experience in wastewater and chemical engineering. Her career began with hands-on internships at the University of Nebraska-Lincoln, where she honed her technical expertise and developed a passion for sustainable engineering solutions. Following her academic foundation, Elizabeth expanded her skills through consulting work in Richmond, Virginia, tackling complex projects and contributing to innovative approaches in water resource management.

In 2021, Elizabeth joined the team at the Western Branch plant, where she has played a pivotal role in optimizing operations and implementing advanced engineering practices. Currently, she works in asset management with WSSC Water, leveraging her experience to ensure the reliability and efficiency of critical water and wastewater infrastructure. Elizabeth's commitment to excellence and her dedication to sustainable water solutions have made her a respected leader in her field.

Innovative collaborative engineering restores primary treatment capacity without extending the construction duration
Wednesday 8/27/2025, 9:00:00 AM, Room 201

Primary Author: William Wagner, Sr. VP, Whitman, Requardt & Associates, LLP

The audience will learn about the collaboration planning and implementation of emergency repairs for restoring treatment capacity as part of a design-bid-build construction contract without the need to extend construction duration.

Bill Wagner is a Senior Vice President at Whitman, Requardt & Associates with over 35 years of experience in planning and design of wastewater treatment facilities in the mid-Atlantic region. He received his B.S degree in Mechanical Engineering and received his M.S. degree in Environmental Engineering both from the University of Maryland. He is a licensed professional engineer in MD, DE, DC and 6 other states.

Lead and Copper Rule Improvements (LCRI) - What water systems need to know:
Wednesday 8/27/2025, 9:30:00 AM, Room 201

Primary Author: Laura Vidal, Association Programs Manager, 120Water

The Lead and Copper Rule Improvements (LCRI) have added another layer of complexity to compliance planning for water systems. This training session will focus on the most up-to-date requirements so key water personnel can stay on track with their compliance efforts. We will dive into best practices and key points to note after the 10/16/2024 service line inventory deadline as well as what to focus on in preparation for the LCRI proposed effective date in 2027. We will also discuss trends from the nation's largest "service line inventory" database and what those trends mean for verification and replacement efforts, as well as communication requirements and strategies to be thinking about.

Jonathan Cuppett

Jonathan Cuppett is the Director of Water Quality Compliance for 120Water. With over 15 years of experience in the water sector, Jonathan ensures that the solutions offered by 120Water comply with various regulatory requirements. For the past decade, Jonathan has been active in research and policy related to Lead and Copper Rule issues and is a collaborator on various national LCR related initiatives. He holds a Master of Science from Virginia Polytechnic Institute and State University, and a Bachelor of Science from The Pennsylvania State University.

AI-supported Maintenance Planning of Work Orders: 10 Use Cases
Wednesday 8/27/2025, 1:00:00 PM, Room 201

Primary Author: John Rickermann, VP, Jacobs

Case studies and lessons learned from full deployment and daily use of AI and digital platforms to support maintenance work order scheduling, as a way to augment and not replace existing CMMS database

John is a vice president of Jacobs O&M division, which includes 3,000 operators and mechanics at over 200 sites. His current focus is on digitizing O&M functions to improve efficiency, as well as serving as the technology and innovation interface between the O&M and engineering divisions of Jacobs. He has 34 years of design, operations and management experience in the industry, with his PE in mechanical engineering originally in Virginia, and an MBA from Boston University. He is a licensed wastewater treatment plant operator, and Certified Maintenance and Reliability Technician.

Digital Twin - Duckett Dam
Wednesday 8/27/2025, 1:30:00 PM, Room 201

Primary Author: Manoharan Chelladurai, Deputy Director, IT Application Services, WSSC Water

A digital twin of a dam is a virtual replica of the physical dam, created using advanced technologies like 3D modeling, sensors, and real-time data. This digital version allows engineers to monitor, analyze, and predict the dam's behavior under various conditions.

A visionary leader with over 25 years of experience. The primary responsibilities include refining and implementing WSSC Water's strategic technical vision and leading significant aspects of the Commission's information technology development by fostering innovation, prioritizing technology initiatives, and coordinating the evaluation, deployment and management of current and future technology systems across the organization.

BIM Enterprise Implementation - Lessons Learned when Scaling Solutions
Wednesday 8/27/2025, 2:00:00 PM, Room 201

Primary Author: Michael Skerritt, Principal Engineer - Water, Mott MacDonald

This presentation describes the Program implemented at DC Water to scale the use of 3D Models integrated with asset and facility data.

Michael Skerritt is a Civil Engineer in Mott MacDonald's Water and Wastewater Division. His education includes a BSc in Civil Engineering and a MSc in Infrastructure. Michael has 15 years' experience in the planning, design, construction, and management phases of multiple projects. These projects are in the areas of potable water storage and distribution, stormwater management, WWTP Upgrades, earthworks and retaining structures, and road construction.

Condition Assessment 2.0 - Beyond the Visual: When Data Management Meets Facility Operations
Wednesday 8/27/2025, 3:30:00 PM, Room 201

Primary Author: Chrissie Swann, Project Manager, Carollo

We have programmed ourselves that condition assessments are visual inspections of our physical assets - identifying weaknesses, failures and defects - while putting action plans together to mitigate the root cause of these issues. TRUE! However, in focusing solely on the visual side, we often lose sight of the maintenance of our operational documentation and data. It is crucial to remember that document and data management are also part of condition assessment. To properly understand a facility's current condition, predict potential issues and plan necessary maintenance or repairs, operational information needs to be accurate!

Chrissie Swann is a Project Manager at Carollo Engineers, Inc. where she leads design teams and works collaboratively across disciplines on a variety of industry projects. She has over 16 years' experience in the design of water and wastewater treatment service projects. She holds a Master's degree from Virginia Tech in Civil and Environmental Engineering.

Infrastructure Intelligence – Advanced Pipeline Assessment Using Autonomous Robots for Rapid Baseline Sewer Condition Assessment
Wednesday 8/27/2025, 5/15/2025 4:00:00 PM, Room 201

Primary Author: Sam Cancilla, Vice President Business Development, RedZone Robotics Inc

The complexities of modern sewer systems require innovative approaches to ensure their functionality, safety, and sustainability. RedZone Robotics leverages cutting-edge autonomous robotics technology to revolutionize pipeline assessment, providing municipalities and utility managers with rapid, accurate, and actionable infrastructure intelligence.

RedZone's advanced robotic systems are designed to navigate and inspect large-diameter pipelines and sewer networks with minimal disruption. These autonomous robots are equipped with high-resolution cameras, laser profilers, and sonar systems, enabling a comprehensive baseline condition assessment of sewer infrastructure. By automating the inspection process,

Sam Cancilla is the Vice President of Business Development at RedZone Robotics, Inc., a pioneer in advanced pipeline inspection technologies and asset management solutions for the water and wastewater industry. With over three decades of experience in trenchless technology, infrastructure assessment, and utility services, Sam has been at the forefront of delivering innovative inspection solutions that help utilities make smarter, data-driven decisions about their underground assets.At RedZone Robotics, Sam has played a pivotal role in the development and market expansion of breakthrough technologies such as the Solo® autonomous inspection robot, the HD Profiler®, and multi-sensor inspection (MSI) platforms. These technologies have revolutionized the way utilities evaluate condition, manage risk, and prioritize maintenance on aging wastewater systems. He also champions the use of Integrity®, RedZone's cloud-based asset management software, which helps clients visualize, analyze, and act on inspection data efficiently.Sam is a recognized leader in the water sector and frequently collaborates with engineering firms, public agencies, and asset owners to support long-term planning and capital improvement strategies. His work has helped advance best practices in condition assessment, optimize cleaning and rehab efforts, and support regulatory compliance in systems facing capacity, overflow, and funding pressures.In addition to his leadership at RedZone, Sam remains an active participant in industry organizations including WEF, NASSCO, AWWA, and NASTT, contributing to technical knowledge-sharing, standards development, and training initiatives. He is a regular speaker at regional and national conferences, where he presents on topics such as sonar inspection, siphon assessments, and integration of inspection data into asset management frameworks.Sam holds a Bachelor of Science from the University of Pittsburgh and is known for his collaborative approach, technical insight, and long-standing commitment to improving public infrastructure through innovation and partnership. His passion for advancing the industry continues to drive RedZone's mission to modernize how critical underground assets are inspected, understood, and maintained.

DC Water's Use of Machine Learning as an Additional tool to Document Non-Lead Service Line Records
Wednesday 8/27/2025, 4:30:00 PM, Room 201

Primary Author: Andrew Welter, Division Officer, Ramboll Americas Engineering Solutions

The purpose of this presentation is to demonstrate how DC Water leveraged machine learning as a tool to document non-lead service line materials in their inventory. DC Water serves over 600,000 customers through approximately 128,000 service lines. In 2019, DC Water launched the Lead Free DC Program with the goal to remove all lead service lines in the District. Since the start of the Program, DC Water has replaced over 7,500 lead service lines and verified the material of over 20,000 service lines via test pits. As of December 2024, over 80,000 service lines require additional material documentation. Approximately 60,000 of these are classified as Suspected Non-Lead, however an additional data point of verification is required.

Andrew Welter is a Division Officer with Ramboll, leading Ramboll Water America's Program and Construction Management practice. His career has been devoted to implementing the delivery of capital improvement projects and programs for municipal water clients in the US for the last 19 years. For DC Water, Andrew is currently serving as the Deputy Program Manager for the Lead Free DC Program.

Silent Sentinels: Guardians of the Flow
Wednesday 8/27/2025, 8:30:00 AM, Room 202

Primary Author: Manoharan Chelladurai, Deputy Director, IT Application Services, WSSC Water

Our Fire Hydrant Inspections Application is designed to enhance urban safety through rigorous and efficient fire hydrant monitoring and maintenance. This user-friendly platform empowers WSSC Water to perform thorough inspections, ensuring that every hydrant is in optimal working condition, ready to serve the community in times of emergency.

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A Week Becomes a Day: New Ideas and O&M Collaboration Leads to the Shortest THP Shutdown on Record
Wednesday 8/27/2025, 9:00:00 AM, Room 202

Primary Author: Dylan Woolard, , HRSD

The audience will learn from HRSD how fostering a culture of collaboration between Operations and Maintenance is absolutely necessary in order to maintain successful operations of complex equipment and treatment processes, such as thermal hydrolysis. Additionally, innovative ideas for improving processes can come from staff at all levels, and everyone benefits when there is receptiveness to potential changes in established practices that can offer labor and cost savings to the WRF.

Construction Without Disruption: Keeping Your Facility Online During a Major Electrical System Upgrade and Facility Renovation
Wednesday 8/27/2025, 9:30:00 AM, Room 202

Primary Author: Ian Smith, Electrical Engineer, CDM Smith

A detailed overview of a water treatment plant upgrade project from design through construction, emphasizing on the plannings and techniques used during the design and construction to maintain the facility's operations during construction and minimizing power outages throughout the electrical system replacement. It also highlights practices used to improve the system's reliability, resiliency maintainability and safety. All this resulted in avoiding the need to purchase costly water from neighboring jurisdictions during entire construction phase.

Ian Smith is an Electrical Engineer with 8 years of experience with the design of electrical systems and supporting construction projects. Ian has completed designs for electrical systems of all sizes including medium-voltage distribution systems for water, wastewater, federal client, and industrial clients. Ian also is well experienced in the design and construction of solar PV system, microgrid, standby power as well as telecommunications and SCADA systems.

Shutdown Simulation Tool
Wednesday 8/27/2025, 1:00:00 PM, Room 202

Primary Author: Manoharan Chelladurai, Deputy Director, IT Application Services, WSSC Water

This abstract outline the development and functionality of a "Shutdown Simulation App" designed to streamline water utility maintenance operations and minimize service disruptions. Built using Python and leveraging its rich ecosystem of open-source libraries and functions, the app offers a cost-effective and readily deployable solution for water utilities of all sizes.

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Advancements in Genome Analysis, Bioinformatics, and the Application to Wastewater Biology
Wednesday 8/27/2025, 1:30:00 PM, Room 202

Primary Author: Howie Pearson, CTO, Quorym

Functional genome instrumentation has advanced rapidly in the last five years. This session reviews advancements in the technology, how genetic data can be collected, and how the data can be interpreted for analysis, and to troubleshoot wastewater biology.

Howie is cofounder and CTO of Quorym, leading the research and development team. An avid environmentalist with a strong desire to improve the natural landscape, he implements these ideals through scientific analysis and development in private industry. Howie has an undergraduate degree in Biochemistry from Millersville University and is currently attending the graduate program in Biochemistry and Biotechnology at Johns Hopkins University. His prokaryotic environmental research focuses on wastewater biology metagenomic characterization/treatment, and eukaryotic research is on apoptosis inflammatory signal inhibition for tissue regeneration. He has research experience in areas such as biochemistry, molecular biology, polymer chemistry, genetics, microbiology, and bioinformatics. Howie also has extensive experience in electrical engineering, and mechanical engineering through rigorous training and experience in the United States Marine Corps.

HydroWatch: Real-Time Water Health Monitor
Wednesday 8/27/2025, 2:00:00 PM, Room 202

Primary Author: Manoharan Chelladurai, Deputy Director, IT Application Services, WSSC Water

The Water Quality Information Management System (WQIMS) implemented by WSSC's Water Quality Division represents a forward-thinking approach to monitoring and managing water quality across distribution systems. By centralizing and digitizing data from diverse sources—such as real-time sensor data, laboratory information, and customer reports—this system addresses critical challenges in water resource management. The WQIMS was designed to empower stakeholders, unlock operational efficiencies, and drive innovation in water quality monitoring.

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Raising Resilience for Washington, DC with an Integrated Flood Model
Wednesday 8/27/2025, 3:30:00 PM, Room 202

Primary Author: Christine Estes, Vice President, AECOM

This presentation will discuss both the technical development of the DC Integrated Flood Model (IFM) as a comprehensive tool to depict flood risk from a combination of sources and the processes that led to the creation of the District's first Flood Risk Framework Plan that will guide the District's investments in resilient infrastructure over the next ten years.

Christine Estes is a Vice President at AECOM in Washington, DC. Christine has over 20 years of experience working in the civil engineering industry, with a focus in water resources. Christine's work has focused on floodplain and stormwater management, watershed planning, and hydrologic, hydraulic, and coastal modeling. Prior to joining AECOM, Christine obtained an M.S. in Civil and Environmental Engineering from Virginia Tech and B.S. in Civil Engineering from University of Virginia. She is passionate about helping communities plan and prepare for current and future flood risk.

From Flood Zone to Resilient Streetscape: The Construction Management Approach to Cleveland Park
Wednesday 8/27/2025, 4:00:00 PM, Room 202

Primary Author: Barry Lucas, PE, EVP, Sr. Director of Infrastructure, FOXXSTEM

In the vibrant Cleveland Park neighborhood of Washington, DC, stormwater drainage issues came to a head with a dramatic flood event on June 21, 2016, where floodwaters poured down into the Cleveland Park Metro Station. In this session, construction management team members will share how this project not only improved drainage through the utilization of Low Impact Development technologies but also elevated awareness of the need for urban resiliency, improved public safety and fostered strong relationships with project stakeholders in the community. Join us to explore the specific project challenges, broader applications for urban stormwater management, and lessons learned from this award-winning project!

Barry Lucas, PE currently serves as the Executive Vice President and Senior Director of Infrastructure for FOXXSTEM, a Washington D.C. based program management, construction management, engineering design and planning firm. Mr. Lucas has more than 20 years of experience in the public and private sector and has delivered projects from the planning phase to design and through construction completion. Mr. Lucas currently serves as the Chairman of the NCEES District of Columbia Board of Professional Engineering and has previously held roles in public service at DC Water and the Port Authority of New York & New Jersey, managing large-scale capital programs of up to $500 million.

Ghost Stream Makeover: Trenchless Edition
Wednesday 8/27/2025, 4:30:00 PM, Room 202

Primary Author: David Gleason, Associate, Hazen and Sawyer

Explore renewal options for two 50+ year old “ghost streams”: large (6- and 14-ft), severely degraded corrugated metal arch culverts. Above them are a hospital, a health facility, a business, and roadways. Learn how NEORSD and Hazen will minimize community disturbance using a custom sliplining solution and by engaging stakeholders.

Dave Gleason is a civil and water resources engineer with Hazen, where he helps clients address stormwater and conveyance-related challenges including aging infrastructure, flood reduction, and water quality improvements. His experience includes master planning through construction, and ranges from stream restoration and permitting to CSO tunnels and pump stations.

PFAS: Navigating the Shifting Landscape - A 2025 Update
Wednesday 8/27/2025, 8:30:00 AM, Room 203/204

Primary Author: Mary Baker, Executive Director, Mid-Atlantic Biosolids Association

The ever-evolving regulatory landscape surrounding PFAS continues to present complex challenges for public utilities, water and sewer authorities, and the biosolids sector as a whole. This must-attend session will equip attendees with the latest information and tools to effectively address these challenges.

Building upon the 2024 overview of national and state updates, this presentation will provide a comprehensive update on the latest regulatory developments, cutting-edge research, and practical guidance.

Mary Baker is the Executive Director of the Mid-Atlantic Biosolids Association (MABA). Previously, Mary worked with several statewide member associations including the Pennsylvania Funeral Directors Association, the Pennsylvania Newsmedia Association, and the Pennsylvania Chiropractic Association. In addition, Mary is a violist and composer, active in the string ensemble Sempre Dolce, and she instructs private lessons on violin and viola. Mary resides in the Harrisburg, Pennsylvania area.

Holistic PFAS Management in Wastewater & Biosolids
Wednesday 8/27/2025, 9:00:00 AM, Room 203/204

Primary Author: Kelly Landry, Senior Principal Engineer, Hazen and Sawyer

This paper will provide insights into best practices for mitigating PFAS as related to management of water resource recovery facilities. A three-pronged approach is proposed, 1) Source monitoring and control to effectively divert and treat PFAS to minimize entry into WRRFs, (2) accumulation of PFAS from the aqueous phase into a more concentrated waste stream and (3) terminal destruction of PFAS from concentrated waste streams. Three case studies will be used to provide practical insights into how these strategies may be implemented at full-scale WRRFs.

Kelly Landry is a professional engineer in Virginia and has worked at Hazen and Sawyer since 2017. Kelly has worked on several key wastewater projects focused on wastewater process design, integrated planning, PFAS management, and Envision for providing holistic evaluations of wastewater treatment projects.

WRF 5107 Understanding Gasification for PFAS Removal and Destruction
Wednesday 8/27/2025, 9:30:00 AM, Room 203/204

Co-Author: Mohammad Abu-Orf, Biosolids Practice Leader, Hazen

The work of this presentation focuses on destruction or removal of PFAS from municipal solids through advanced thermal processes per WRF project Understanding Gasification for PFAS Removal. PFAS sampling and analysis were conducted at the full scale, 30 wtpd gasification facility in Edmonds, WA. Nine samples (solids, water and air) were collected and analyzed. The five solids and two water samples were analyzed for measurable PFAS, TF of TOF. Two air tests were conducted on site at two different locations, one before carbon filtration and the second right before emitting to the stack. Only measurable PFAS was conducted on the two air samples. This is the first full scale PFAS air sampling study for a gasification process.

Dr. Mo Abu-Orf is Vice President of Hazen

Upcycling an industrial byproduct for phosphorus and sulfur sequestration.
Wednesday 8/27/2025, 1:00:00 PM, Room 203/204

Primary Author: Jonathan Teaford, CEO, Green Steel Environmental

Our pilot work conducted at the University of Colorado has demonstrated that steel slag, a low-value byproduct of steel manufacturing, is an effective and efficient material for sequestering phosphorus and sulfur from anaerobic digesters. Today, we present an update on our research showing the impacts of using steel slag to remove phosphorus and sulfur from industrial and agricultural digesting sludge, and on the impact of steel slag on processes that are downstream from a digester.

Jonathan Teaford is the Co-Founder and CEO of Green Steel Environmental and serves as an Entrepreneur in Residence at the University of Colorado, Boulder. He is a regular speaker at environmental and academic conferences on subjects including turning waste into energy and efficient agricultural practices. Mr. Teaford lives in Boulder, Colorado with his wife and two children.

High Energy Savings in Wastewater Treatment With Low DO Resulting in Simultaneous Nitrification and Denitrification
Wednesday 8/27/2025, 1:30:00 PM, Room 203/204

Primary Author: Eric Li, CEO, BDP ENVIROTECH LLC

Biological Double-Efficiency Process (BDP) is an important breakthrough in wastewater technology that combines state of the art and easy to maintain aeration technology, airlift circulation/dilution technology, and an integrated all-in-one bioreactor technology. This is based on simultaneous nitrification/denitrification principles, resulting in substantial savings: on average, 50 percent energy, 30 percent capital, 50 percent land footprint, 30-50 percent operation and maintenance (O&M), and 15 percent water savings opportunities. It is the world's first and only full range mainstream process that has a low DO condition in the entire process and in a single basin structure with aeration and clarification.

Eric Li is the Founder and CEO of BDP EnviroTech LLC. He has over 20 years of experience in R&D of wastewater treatment and recycling of wastewater technology.

In the past, he held positions as Project Manager with Oppenheimer Inc., as General Manager with Bundesdruckerei GmbH and as CEO with Business Dada Inc.

He has a degree in BS, Post and Telecommunication University of Beijing.

His achievements include:

- Leading inventor and CEO/founder of BDP (Biological Double-efficiency Process) wastewater treatment technology
- 23 years of experience in charge of research and development of wastewater treatment and recycled wastewater technological development
- 17 years of general management of full-scale applications of BDP technology
- Managed 68 full-scale applications of BDP technology in the US, Europe, China, India and Taiwan.

In 2002, he led and started the early stage BDP process technologies with number of other engineers in Europe. This was followed up with two test pilot programs in Germany, to prove the concepts. He then led the team to start 2 small scale application in 2005 in mainland China. This led the team to start BDP's first 2 full scale applications in China for Sinopec and SNPC in 2007. In 2010 he the team to build the world's largest textile industrial Wastewater Treatment Plant in China.

He has worked with US EPA experts to publish BDP technology on the US EPA website in 2013 and led the team which applied for and was awarded, a special grant for promoting a full scale application of BDP technology in 2016 by the State of California Energy Commission.

He has led the BDP team to realize 68 full scale projects by 2024.

CFD Modeling Streamlines Scale Physical Modeling of Pump Intake Hydraulics
Wednesday 8/27/2025, 2:00:00 PM, Room 203/204

Primary Author: Edward Wicklein, Chief Technologist, Carollo Engineers, Inc.

Some cavitation damage had been observed in existing backwash pumps, which is commonly caused by approach. As the pumps were being replaced with new 40 mgd backwash pumps, a combination of CFD and scale physical modeling was used to evaluate and optimize approach conditions to minimize future cavitation risk. The modeling allowed for overall optimization of the pump system and let to a design that met Hydraulic Institute recommended intake conditions.

Ed Wicklein has 25 years of experience in design and analysis of hydraulic facilities using numerical and scale physical models. He has managed or performed hundreds computational fluid dynamic (CFD) studies of municipal and industrial water treatment facilities that have evaluated hydraulics through of most of the major water and wastewater treatment components. He is actively involved in the Hydraulic Intitule Pump Intake Hydraulics Committee.

Low-Cost Strategies to Reduce Nitrous Oxide Emissions, a potent Green House Gas
Wednesday 8/27/2025, 3:30:00 PM, Room 203/204

Primary Author: Jay Surti, Wastewater Treatment & Recycling Service Line Lead, GHD, Inc.

N2O emissions from WRRFs can be a major contributor to Scope 1 direct process emissions during wastewater treatment. Such emissions arise primarily from less-than-ideal operating conditions during nitrification and denitrification processes. This presentation will leverage the insights from the Halton Region (Ontario, Canada) Study to elucidate the operating conditions that contribute to N2O generation. The information presented will be highly beneficial for WRRF owners, operators, and engineers who are assessing strategies to mitigate N2O emissions and thereby reduce Scope 1 process emissions in WRRFs.

Mr. Surti is a Professional Engineer with 20 years of experience serving the water industry, providing innovative solutions to solve challenges related to the environment and public safety, aging infrastructure, sustainability, and contaminants of emerging concern such as PFAS. Mr. Surti has a Bachelor of Engineering and Master of Engineering degree in Environmental Engineering.

Development of Design Criteria for Partial Denitrification Anammox (PdNA) Systems for Sustainable Nitrogen Removal
Wednesday 8/27/2025, 4:00:00 PM, Room 203/204

Primary Author: Christine deBarbadillo, Plant Optimization Practice Leader, Black & Veatch

The development of Partial Denitrification-Anammox (PdNA) systems has provided a next-generation option for nitrogen removal that achieves capacity benefits as well as reductions in energy, carbon dosing, and alkalinity supplementation. Over the past five years, process development research has continued, and this emerging technology has been demonstrated at several full-scale facilities. This presentation will focus on development of practical design criteria for applying PdNA to full scale denitrification filters, tertiary moving bed biofilm reactors (MBBR), and integrated fixed-film activated sludge (IFAS) systems.

Chris has over 30 years of wastewater experience including process evaluations, troubleshooting, pilot testing, and design. As a process engineer, Chris performed detailed assessments for over 50 plants to optimize performance and develop upgrades, including many with low nutrient permit limits. She is also a licensed operator, having worked for 9 years at a large facility with stringent nutrient limits. Chris is active in research for next-generation nutrient removal processes such as deammonification including work on several WRF projects.

How Back River WWTP was brought back, an insiders perspecytive
Wednesday 8/27/2025, 4:30:00 PM, Room 203/204

Primary Author: Bill Farrell, President, Professional Starup & Operating Services, Inc

This presentation will detail the fall and rise of the back River WWTP and the reasons for the deterioration of the plant process during the late teens and early 2020's that led to NPDES violations, the Consent Decree, and the $ 4.75 M fine. We will outline the process decisions, operation and maintenance assistance, and funding needed to rebuild the internals of the plant processes. We will detail the successes that have followed and the path to future of Back River

Bill Farrell is the President an Founder of professional Startup & Operating Services, Inc (PROSTART). Bill has worked in the Chesapeake Bay region for 51 years in municipal and private operations, commissioning, contracting, training, equipment sales, and contract operations. He is a graduate of Penn State University, BS-Civil/Sanitary Engineering (1973), and the Johns Hopkins University, MS- Environmental Engineering (1979). He holds multiple State of Maryland, Water, Wastewater, and Industrial treatment licenses WW-4,5,S,A; W-4; I- 2,6. Bill is eminently knowledgeable of the reasons for the deterioration of the Back River WWTP and was instrumental in the remedies that brough the plant back into compliance

Tanks, Pipes, Panthers, and Progress: Navigating Construction Challenges in Infrastructure Development
Wednesday 8/27/2025, 8:30:00 AM, Room 207/208

Primary Author: Nicholas D'Angelo, Project Engineer, RK&K

Howard County's 2.5-million-gallon composite elevated water storage tank project demonstrates innovative engineering solutions, including geopiers for foundation stability and a coordinated approach to roadway and utility design. The project addressed challenges such as welding deficiencies, weather-related delays, and overflow pipe relocation, offering valuable lessons in adaptability and communication. By emphasizing clear shop drawings and efficient RFI management, this initiative serves as a model for successfully delivering complex infrastructure projects.

Mr. D'Angelo is a Project Engineer with RK&K, with over six years of experience in project management, condition assessment, water asset prioritization and planning, and external corrosion control and cathodic protection program management. Mr. D'Angelo has a Bachelor's degree in Corrosion Engineering and is a registered Professional Engineer in Maryland.

Benefits of Water Storage Tank Maintenance: Extended Service Life, Lowest Life-Cycle Costs & Most Sustainable Approach
Wednesday 8/27/2025, 9:00:00 AM, Room 207/208

Primary Author: Toby Butler, Water Tank Maintenance Specialist, Viking Industrial Painting

One of the water utility's most valuable assets are their water storage tanks. Regular routine comprehensive tank inspections along with a planned preventative tank maintenance program will extend the service life, yielding the lowest life-cycle cost and most sustainable strategy. This presentation will demonstrate how a comprehensive tank maintenance program aligns with the utility's asset management and sustainability goals.

Toby is a Water Tank Maintenance Specialist with Viking Industrial Painting. He has 14 years of experience in protective coatings and water infrastructure. Toby partners with municipalities to create realistic solutions in maintaining some of their most valuable pieces infrastructure - water tanks.

Water Tank Coatings Failures – A Deep Dive Into the Causes and Effects of Poor Painting
Wednesday 8/27/2025, 9:30:00 AM, Room 207/208

Primary Author: Bernie Wigginton, Sr Construction Manager, Gannett Fleming TranSystems

Water storage tank condition assessment and tank rehabilitation are critical tasks for tank owners that inevitably require coating removal and replacement. Contractors and construction Inspectors closely monitor the quality of surface cleaning and coating application to ensure standards are adhered to and to comply with contract specifications. Thus, what could go wrong, right? Mr. Wigginton will present the details of several case studies involving coatings failures on tank interior surfaces observed over the last 10 years. Failures caused by disbondment, osmotic blistering, surface contamination issues, and intercoat adhesion will be presented from recent tank rehab projects. Methods used to identify the issue will be explained along w

Bernie Wigginton, NACE CIP 3, is a Senior Construction Manager at Gannett Fleming with 50+ years' experience in the coatings and water tank rehabilitation industry. As the owner of a small business, Mr. Wigginton spent many years as a contractor rehabilitating water tanks before transitioning to engineering consulting. As a Construction Manager with Gannett Fleming TranSystems, Bernie oversees multiple tank rehabilitation projects and performs tank condition assessments for tank owners across the mid-Atlantic region. His extensive knowledge and experience with means and methods in coatings application enables him to confidently advise clients on the causes of coatings failures in water tanks.

CFD Modeling at the City of Baltimore's Oldest WFP's to Aid in Informed Decision Making
Wednesday 8/27/2025, 1:00:00 PM, Room 207/208

Primary Author: Hana Litwin, Senior Principal Engineer, Hazen and Sawyer

This presentation reviews the CFD modeling efforts performed at the City of Baltimore's Montebello I water treatment plant.

Transforming Water Treatment: Innovative Solutions for Emerging Contaminants
Wednesday 8/27/2025, 1:30:00 PM, Room 207/208

Primary Author: Vanessa Nedrick, Principal, Regional Manager, Remington & Vernick Engineers

RVE collaborated with the Merchantville-Pennsauken Water Commission (MPWC) to enhance water quality at their Woodbine Avenue facility by addressing emerging contaminants like PFOA, PFOS and 1,4-dioxane. A comprehensive feasibility study led to the installation of an Advanced Oxidation Process (AOP) and Granular Activated Carbon (GAC) systems to treat these contaminants. The project, which included significant infrastructure upgrades, set a new regional standard for water treatment. The Woodbine Avenue plant, operational since April 2022, is the first in the state to use these advanced processes. RVE is now assisting MPWC with securing funding for future upgrades.

Vanessa Nedrick, PE, is a Principal and Regional Manager of RVE's Water/Wastewater Division with over 25 years of experience in municipal water, wastewater and stormwater engineering. A Drexel University alumna, she began her career at the Philadelphia Water Department, specializing in water, stormwater and trenchless technology design. Vanessa has authored technical papers for major industry conferences and serves as 2nd Vice President of the Pennsylvania Water Environment Association (PWEA).

Disinfection By-Product (DBP) Control Strategies for Challenging Operational Conditions in the Town of Ocean City, MD
Wednesday 8/27/2025, 2:00:00 PM, Room 207/208

Primary Author: Allyson Merola, Associate, Whitman, Requardt & Associates, LLP

Focus on the technology review, planning, operational strategies, bench and full-scale testing, results, and selection/implementation of Ferric Chloride for coagulation for Disinfection By-Product (DBP) precursor removal at the Town of Ocean City, MD's Gorman Avenue Water Treatment Plant.

Allyson Merola, P.E. is an Associate at Whitman, Requardt & Associates, LLP with over 16 years of experience in water and wastewater infrastructure design, planning, and hydraulic modeling. She has a B.E. in Environmental Engineering from the University of Delaware and an M.S. in Environmental Engineering from Johns Hopkins University. She is a licensed Professional Engineer in the states of Maryland and Texas.

Under Pressure: Efficiently Executing Your PFAS Pilot Program on Surface Water Treatment Plants
Wednesday 8/27/2025, 3:30:00 PM, Room 207/208

Primary Author: Joe Nattress, Drinking Water Discipline Leader, CDM Smith

With the new PFAS MCLs being promulgated in 2024, many utilities are facing decisions on meeting the 2029 deadline for compliance. With this fast approaching deadline, utilities are working to quickly collect site-specific performance data to make decisions on what treatment process(es) to implement for PFAS.

Pilot testing is a critical part of the planning and project development process for reliable and cost-effective PFAS treatment, including consideration of site-specific operational and water quality parameters. This presentation will discuss critical planning, design, and implementation issues specific to PFAS treatment pilot testing, and discuss specific real-world case studies, outcomes, and lessons learned.

Joe serves as a Drinking Water Discipline Leader and Associate at CDM Smith. With over 25 years of experience, he has expertise in pilot testing, designing, constructing, and commissioning water treatment facilities across various sources and capacities. In recent years, he has focused on PFAS treatment in drinking water, leading numerous studies and testing to evaluate and implement treatment technologies for groundwater and surface water treatment plants in the Mid-Atlantic and Northeastern US. Joe is a registered professional engineer in several states and actively volunteers with AWWA.

Operations and Water Quality Dashboarding and Assessing Facility Cost Share in a Complex System
Wednesday 8/27/2025, 4:00:00 PM, Room 207/208

Primary Author: Hana Litwin, Senior Principal Engineer, Hazen and Sawyer

The City of Baltimore is the major water supplier for the Baltimore region, supplying drinking water to over 1.8 million residential and business consumers in the City and surrounding Counties1. Given the complexity and scale of the City's water distribution operation, dashboarding is being utilized to help data management. Two specific areas where dashboarding has proven useful are managing cost allocation amongst all parties and consolidating operational data.

How good are you at multitasking? Operating to exceed finished water standards while optimizing residuals production.
Wednesday 8/27/2025, 4:30:00 PM, Room 207/208

Primary Author: Gerardo Castaneda, Mid-Atlantic Drinking Water Treatment Lead, HDR

This presentation will provide insight into the evaluations and design of residuals thickening and dewatering processes at the Lake Manassas Water Treatment Plant. Among the challenges is that drinking water operators are being asked to optimize residual processing in addition to their mandate of producing high quality finished water.

Gerardo Castaneda is a professional engineer registered in VA, FL and NC. He has over 22 years of experience in water/wastewater projects, including studies, design, construction and operations. Gerardo currently serves as the Mid-Atlantic Drinking Water Lead for HDR.

Sharing Your Water Story on Capitol Hill - Yes, YPs Too !
Wednesday 8/27/2025, 8:30:00 AM, Room 215

Primary Author: Peter Garvey, Vice President, Dewberry Engineers Inc.

The National Water Policy Fly-In takes place in April each year and is a great opportunity for clean water professionals to 'get on the radar' and share water stores with legislators. For us at CWEA its generally a 'drive in'. The presentation aims to demystify the 'Fly-in', describe the logistics leading up to and during the event and share the benefits. And the Fly-In is not just for 'seasoned professionals' - did you know WEF has scholarships for Young Professionals to participate?

Peter Garvey is a Vice President and Growth officer with Dewberry. He has over 30 years' experience in the clean water industry with a focus on resilience, collection systems and asset management. A recent arrival in the Mid Atlantic, Peter has been involved in WEF for much of his career. He recently served as NEWEA Delegate to WEF, and is currently a WEF Delegate-at-Large representing WEF's Water Advocates program.

The Road to Affordability: Using Data and Metrics for Sound Approaches
Wednesday 8/27/2025, 1:00:00 PM, Room 215

Primary Author: Kishia Powell, General Manager, WSSC Water

The focus of this presentation would be a discussion of the data and the metrics used to guide affordability efforts including assessment of customer class delinquencies, mapping efforts, time to pay data, and delinquency analysis. Additionally, the discussion would include a high-level view of WSSC Water's strategies to balance affordability with required investments in infrastructure and workforce which we have called the three-legged stool: affordable yet adequate rates, customer assistance programs, and leveraging external funding. Innovative solutions and approaches include spatial analysis, PromisePay tool, implementation of cross-department revenue recovery team.

Kishia L. Powell is a dynamic force in the global water sector with 25 years of experience in both the public and private sectors across the U.S. and London, England.

She leads a team of 1,730 strong and manages the day-to-day operations of the largest water utility in Maryland – the 8th largest in the country – and ensures water and water

resource recovery services are safely provided to 1.9 million customers throughout a 1,000-square-mile service area. WSSC Water's annual budget exceeds $1.5 billion

with a 6-year capital program of $6.4 billion. GM Powell was appointed to serve on President Biden's National Infrastructure Advisory Council's Subcommittee for Workforce Development. She also serves on the board of the National Association of Clean Water Agencies, (formerly as President), representing over 400 clean water agencies across the country. She also serves on the Morgan State University School of Engineering Executive Council. In May 2023, the Maryland Society of Professional Engineers honored her with the Industry Icon Award. Before being selected to lead WSSC Water, Kishia served as DC Water's Chief Operating Officer and Executive Vice President. While at DC Water, Kishia had the honor of testifying before both houses of Congress in support of water sector funding and the Infrastructure Investments and Jobs Act, known as the Bi-partisan Infrastructure Law with historic levels of federal water funding. In September 2023, she was invited to return to the Senate Environment and Public Work Committee to provide testimony on the BIL implementation and progress. Before DC Water, Kishia was the City of Atlanta's Commissioner of Watershed Management, overseeing $644 million in annual operating expenditures and a five-year capital improvement plan of $1.26 billion. Other previous appointments include the City of Jackson, Mississippi's Public Works Director and Bureau Head of Water and Wastewater for the City of Baltimore, where she was recognized by the Chesapeake Water Environment Association as a Water Hero in 2010. A licensed Professional Engineer in Maryland, Virginia and the District of Columbia, she holds a Bachelor of Science in Civil Engineering from Morgan State University's Clarence M. Mitchell, Jr. School of Engineering.

Water Modeling for the Future - The Only Constant is Change
Wednesday 8/27/2025, 1:30:00 PM, Room 215

Primary Author: Mathew Roder, Principal Project Manager, Arcadis

This presentation describes how Harford County updated its water model to account for service area growth that would upend its current distribution. Some parts of the County will almost double in population and some parts will drop in population.

Matt Roder is a Principal Project Manager at Arcadis. He earned a Bachelor's degree from the University of Notre Dame and a Master's degree from the Illinois Institute of Technology. He has over 25 years experience in treatment plant design, collection systems, and asset management. Matt lives in Bowie, Maryland with his wife, his four children, and his two dogs.

Evaluation of how to get system reliability, enhanced water quality, and adequate pressure in the City's First and Second Zone
Wednesday 8/27/2025, 2:00:00 PM, Room 215

Primary Author: Sophia Liskovich, Senior Project Manager, Gannett Fleming

The presentation will give the audience the evaluation criteria and associated cos for several items that were evaluated by the City to enhance water quality, add reliability, and add addition costumers in the first and second zone.

Sophia is a Senior Project Manager in the Water Department of Gannett Fleming, located in the Baltimore, Maryland office. She has 23 years of experience

with water treatment and storage. She is a past Chair of the Chesapeake Section of AWWA and is a recipient of the Carl J. Lauter Award for distinguished service in the water supply field. Sophia is a registered PE in Maryland, Florida, Virginia, and Wisconsin.

WSSC Water's Strategic Plan Drives Realignment of Asset Management Program
Wednesday 8/27/2025, 3:30:00 PM, Room 215

Primary Author: Frederick King, Project Manager, WSSC Water

WSSC Water has embarked on a holistic valuation journey with its recent asset management gap analysis and maturity assessment. This initiative provided a powerful opportunity to identify past achievements and deficiencies while setting the course for a best in class Asset Management Program that remains aligned with the current and future needs of WSSC. In this presentation, we will dive into the innovative methodology behind our analysis, share compelling findings, and outline a dynamic pathway for elevating the asset management program to new heights.

Frederick King is a project manager at WSSC Water in the Asset Management Division.

Baltimore City Hydraulic Model Expansion and Charting a Course for 2050
Wednesday 8/27/2025, 4:00:00 PM, Room 215

Primary Author: Alexis Lipovich, Assistant Engineer I, Hazen and Sawyer

Hazen and Sawyer has developed and validated a cohesive hydraulic model for the City of Baltimore and the surrounding Baltimore County area water distribution system. This presentation will briefly discuss the model validation process and then focus on three hydraulic analyses performed on the model: available fire flow, system water quality, and system reliability, redundancy, and criticality. We will also focus on how the hydraulic model can be used to identify in-field deficiencies and provide real-world examples.

Alexis Lipovich E.I. has been with Hazen and Sawyer in the Baltimore since March 2024. Graduating with Civil Engineering from the University of Florida, Lipovich has experience in water and wastewater utility future-planning as well as water and wastewater hydraulic modeling. Lipovich has over 2 years of experience in the water and wastewater engineering industry.

Buck the Traditional and Jump into the Cloud
Wednesday 8/27/2025, 4:30:00 PM, Room 215

Primary Author: Kevin Stock, CEO, STREAMETRIC

Even though traditional digital water solutions are a large part of the water market, “Cloud-based solutions will experience rapid double-digit growth driven by the push for more flexible, scalable, and data-centric approaches to water management*.” Utilities are recognizing the time and money-saving benefits of Cloud-based solutions and are making the switch from traditional solutions. One such utility is in Dripping Springs, Texas.

*Bluefield Research article: U.S. & Canada Digital Water Market to Surge 107% by 2033 as Utilities Accelerate Their Own Transformations - Bluefield Research

Kevin Stock has 30+ years of experience in the Water & Wastewater industry. His expertise is in SCADA (Supervisory Control and Data Acquisition), controls, and IoT technologies. In 2003, Kevin founded Scadata and developed a signature turnkey SCADA (SaaS) software. He is a leader in the Water/Wastewater emerging digital technology platform and holds a US Patent. Currently, Kevin is the CEO at STREAMETRIC, a MANN + HUMMEL company, helping Water and Wastewater professionals, internationally, achieve better systems performance through Artificial Data intelligence via digital technology platforms.

A Sewer Model for the Future!
Wednesday 8/27/2025, 8:30:00 AM, Room 215

Primary Author: Mathew Roder, Principal Project Manager, Arcadis

This abstract describes Harford County's effort to update its sewer model ahead of major growth and population shifts within the County. It discusses updating the model, verifying the elements of the model, and calibrating it using measured flows.

Matt Roder is a Principal Project Manager at Arcadis. He earned a Bachelor's degree from the University of Notre Dame and a Master's degree from the Illinois Institute of Technology. He has over 25 years experience in treatment plant design, collection systems, and asset management. Matt lives in Bowie, Maryland with his wife, his four children, and his two dogs.

All Aboard: Fast-Track Design of Sewer Relocations for a Railroad Track Expansion Project
Wednesday 8/27/2025, 9:00:00 AM, Room 215

Primary Author: Christopher Mata, Project Manager, CDM Smith

The proposed railroad track expansion project in Northern Virginia required relocating existing sanitary sewer mains. This involved moving two sewer segments that converged before crossing multiple railroad tracks. The new alignment includes placing a manhole within a stream, abandoning 500 feet of existing sewer main, and installing 600 feet of new sewer main at depths up to 15 feet. A bypass system was needed to manage sewer and stream flow during construction. This presentation will provide an overview of the project, discuss challenges, and highlight the planning, coordination, and technical analysis performed to meet requirements and minimize environmental impacts. The project is on track for completion by March 2025.

Christopher Mata is a seasoned Project Manager at CDM Smith, specializing in water and wastewater projects from planning through construction. With over a decade of experience in the private and public sectors, Chris has honed his expertise in the industry. He holds a degree in Environmental Engineering from Florida International University and a Master of Science in Civil and Infrastructure Engineering from George Mason University. Christopher is also a Certified Construction Manager and a registered professional engineer in the Commonwealth of Virginia.

Forced Maintenance: A case study on Wastewater Force Main Inspection
Wednesday 8/27/2025, 9:30:00 AM, Room 215

Primary Author: Patricia Dubyoski, Project Engineer, GHD

After numerous breaks and financial losses, and with the looming potential for cutbacks or capital improvement delays, Cecil County DPW needed to make a decision about an aging piece of critical infrastructure. As they sought further information about the condition of their aging force main, built in 1968, the utility hoped to invest strategically and prepare for projected growth in the area. After an eventful inspection that did not answer the questions the utility was looking to answer, the group was left with more question marks than clear paths forward. The results left open the question – was the costly inspection "worth it," and what should they do next?

Patricia Dubyoski has a B.S. in Chemical Engineering from UMBC and has five years of experience in condition assessment, modeling, and rehabilitation of water and wastewater infrastructure. She has been involved with condition assessment and rehabilitation for pipelines and structures ranging in diameter from 8 inches to 100 inches in urban and suburban environments. Her experience on condition assessment projects across Maryland, DC, Virginia, Delaware, and South Carolina has included confined-space entry into manholes, water meter vaults, and air release valve vaults for assessment; surface-level collection and review of camera footage for condition assessment of manholes before and after rehabilitation; and planning and sequencing of inspections for over 100,000 linear feet of sewers, force mains, and inverted siphons. Patricia has been NASSCO MACP, PACP, and LACP certified since 2019 and has a proven ability to synthesize large amounts of data to assist clients in decision-making based on condition of existing assets. Patricia has 5 years of experience in hydraulic analysis and modelling of water, gravity sewer, and force main systems. Her experience on hydraulic modeling projects has included modeling of large portions of a sanitary sewer system to predict downstream capital improvement needs following upgrades to pump stations in the system; modeling of complex force mains to determine supplemental pumping needs; and modeling of water distribution systems to provide recommendations for various improvements to level-of-service. Patricia Dubyoski is a Project Engineer at GHD and served in that capacity for the project being presented.

The Rehabilitation of DC Water's Northwest Boundary Trunk Sewer
Wednesday 8/27/2025, 1:00:00 PM, Room 215

Primary Author: Anna Pridmore, Senior Vice President of Municipal Infrastructure, Structural Technologies

DC Water's Northwest Boundary Trunk Sewer, built in the 1800s, is a key infrastructure located near Embassy Row. During a 2023 inspection, missing bricks were found at a junction, and by July 2024, a significant void was discovered with 470 cubic feet of washed-out soil, exposing a nearby watermain. DC Water shut down the road and engaged contractors to address the issue. Challenges included high live flow, humidity, adjacent utilities, and complex geometry. After several rain events, including Hurricane Debby, a reinforced shotcrete solution was implemented to restore the sewer's capacity, and cellular concrete filled the void. The project involved collaboration between DC Water, contractors, and DDOT to quickly address the situation.

Dr. Anna Pridmore is the Senior Vice President of Municipal Infrastructure for Structural Technologies. She has her PE in California and has over 18-years of interdisciplinary experience working with pipeline condition assessment and rehabilitation, with over 400 projects implemented to date. Anna is Vice-Chair of DBIA's Water/Wastewater Committee and actively involved in technical committee activities including ASCE, AWWA, ASME, and ASTM. She assists clients with options analysis, technical support, engineering, specifications, collaborative delivery efforts, and projects related to pipeline inspection and rehabilitation.

Pollutant H&H Model Prioritizes Improvements & Cost Savings
Wednesday 8/27/2025, 1:30:00 PM, Room 215

Primary Author: Mark Delisio, Senior Project Manager, Verdantas

The City of Lakewood Ohio's Sewer Collection System Model was utilized to prioritize sewer improvements based upon water quality results in addition to CSO discharge occurrences and volumes. This approach followed the USEPA Integrated Planning Framework and Saved the City Hundreds of Millions of Dollars.

Mark is a Midwest North Water Group Leader at Verdantas overseeing staff focused on wet weather collection systems, drainage, modeling, planning, and design. Verdantas is an employee focused organization providing integrated solutions for a sustainable future. The company has grown from 200 to 1,700 employees in the past 4 years, and is focused primarily on environmental, water, and energy transition problems.

WORLD RECORD HDD under the Deepest Water Harbor on the East Coast
Wednesday 8/27/2025, 2:00:00 PM, Room 215

Primary Author: Mark Peters, Project Manager, Garney Construction

Collaboration was key to achieving technical excellence and innovation in the Boat Harbor Treatment Plant Conversion projects, part of SWIFT program. The Force Main Section 1 Subaqueous Project, also known as the James River Crossing (JRX) project, exemplifies this principle through its fixed-price design-build delivery method. The project scope includes installing a new force main beneath the Newport News Shipping Channel, using over four miles of High-Density Polyethylene (HDPE) pipe ranging from 42 to 54 inches in diameter. This project set a record for the longest horizontal directional drilling (HDD) installation of large-diameter HDPE pipe, placed over 100 feet below the channel at a depth of -170 feet.

As a Construction Manager, Mark's responsibilities include daily management of operations in the field, client engagement, material procurement and approval, submittal development and management, site preparation, subcontractor management and documentation, scheduling deliveries, and attending progress meetings. He also oversees project administrative duties, including all safety and quality documentation. Mark has been involved in the construction industry since 2005 experienced with projects involving subaqueous open cut, trenchless river crossings, HDPE, and HDD installation. His skill set includes building and managing relationships across multiple clients, industries, municipalities, and all levels of the organization. He has experience managing multiple non-union and union subcontractor trades including electricians, insulators, sheet metal, boilermakers, plumbers, HVAC techs, carpenters, and concrete laborers, over multiple job sites.

From Trunk Lines to All-Pipe Models: Advancing Sewer System Analysis at WSSC Water
Wednesday 8/27/2025, 3:30:00 PM, Room 215

Primary Author: Pradeep Reddy Sudini, Project Technical Leader | Senior Water Resources, CDM SMITH

Discuss benefits, challenges, and solutions for all-pipe dynamic sanitary sewer system modeling applications with examples from WSSC Water's multi-year sewer system model update projects.

As a Water Resources Engineer with over 17 years of experience, I specialize in the modeling, planning, and optimization of hydraulic structures, focusing on wastewater and stormwater collection systems. My expertise spans hydrologic and hydraulic modeling, flow monitoring, sewer flow projection, pump station design support, and large pipe design. I am an active contributor to the Modeling Technical Planning Group within the WEF Collection Systems Committee and a member of the WEFTEC Program Community and Collection System symposia.

SC941 - Commissioning of a Large Diameter Pressure Sewer Relief System
Wednesday 8/27/2025, 4:00:00 PM, Room 215

Primary Author: Eric Dymond, Associate, Hazen and Sawyer

The Jones Falls Sewershed located in downtown Baltimore was identified as a priority in the 2002 EPA Consent Decree with the US EPA. In particular a portion of the sewershed along the Jones Falls waterway was prone to overflows and backups that polluted waterways, damaged property and made roadways unusable. To mitigate these issues and to satisfy the terms of the Consent Decree, Hazen provided a design that included expansion of an existing sanitary siphon, sealing of problem manholes and construction of a new 42" sanitary force main to convey wet weather flows of up to 50 MGD.

Mr. Dymond is an Associate Engineer with the Baltimore office of Hazen and Sawyer. He specializes in trenchless construction, water and wastewater pipelines and pipeline and structure rehabilitation in the mid-Atlanic region.

DC Water's MH31 Replacement Project: A Case Study of DBIA Best Practices
Wednesday 8/27/2025, 4:30:00 PM, Room 215

Primary Author: William Elledge, Director, Engineering and Technical Services, DC Water

This is a case study of a project that used multiple best practices as defined by the Design Build Institute of America (DBIA). The presentation will focus on implementation of five best practices and how they increased the likelihood of project success.

William Elledge is the Director of Engineering and Technical Services at DC Water. His experience includes water, sewer, & storm projects for >25 years across 8 states. His projects include pipelines with up to 24' in diameter, flows >1000 mgd, and lengths >20 miles. At DC Water, he and his team are responsible for project delivery of a portion of the 10-year CIP worth $3 Billion. William is also a certified career coach who loves delivering top-grade work while motivating and retaining staff.

Evolution of the Water Capital Improvement Plan Strategy within Detroit Water and Sewerage Department
Thursday 8/28/2025, 8:30:00 AM, Room 201

Primary Author: Jim O'Dowd, Infrastructure Asset Manager, AECOM

Determining the desired levels of service targets for capital improvement and the resultant annual capital reinvestment/replacement cost can appear daunting to many utilities. Since 2017, the Capital Improvement Program Management Organization (CIPMO) has taken a programmatic and collaborative approach to renew water infrastructure in Detroit. Following almost seven years of lessons learned, DWSD and CIPMO took a fresh look at the assumptions made in the early days of the program and the realities of project drivers and execution. The purpose of this presentation is to clearly describe and demystify the components, processes and strategies used to develop a defensible condition assessment and capital improvement program for water utilities.

Jim O’Dowd is a professional engineer with over thirty years of experience in water and wastewater consulting. He has been working with AECOM for over six years. He holds a bachelor’s degree in Civil Engineering from University College Cork, Ireland. He is the current Chair of the ASCE Utility Asset Management Division’s Practical Data Analysis Committee. He has presented papers at National and International conferences with a primary focus on hydraulic modeling and asset management.

Crawl, Walk, Run – Building Your Asset Management Program
Thursday 8/28/2025, 9:00:00 AM, Room 201

Primary Author: Alison Barton, Environmental Engineer, EA Engineering

This presentation will cover the steps to build an asset management system focusing on existing technology resources and using a phased approach to encourage end-user adoption. Using Fauquier County Water and Sanitation Authority as a case study, the presentation will cover the configuration and migration of existing data into an asset management software solution, with specific steps taken to minimize the technical strain on existing resources and maximize the end-user adoption. This includes how asset data in GIS was initially managed, the benefits of migrating the asset data into a software solution, how the asset data was transferred, end-users engagement and adoption strategies and overcoming the challenges faced during the asset data

Ms. Barton is an environmental engineer with 10 years of experience in the environmental field including engineering design, environmental permitting, operational support, construction oversight, and asset management. She has spent the majority of her career addressing Maryland local government needs across a wide array of subjects, and has supported multiple municipalities and water/sewer utilities in asset management software implementation, workflow configuration, and end-user training.

Implementation of Life Extension for Aging Infrastructure
Thursday 8/28/2025, 9:30:00 AM, Room 201

Primary Author: Erin Nelson, Engineer III, Corrpro Companies Inc

The following presentation is a case study that includes the retrofit of cathodic protection galvanic anodes onto an existing 51 yr old ductile iron pipeline. This pipeline was experiencing failures and replacement was not a viable option. This case study will depict the difference between the conceptual design vs the pilot program and how priority areas of the alignment were designed based on field data collected during the pilot program. The case study will show how the cathodic protection system has been performing since the original installation in 2022 and lessons learned to help improve the installation of the cathodic protection system along the remaining length of the alignment.

Erin Nelson, EIT, CP3, CIP Level 1, of Corrpro Companies, Inc. has been involved in condition assessment and corrosion control since 2008. Ms. Nelson has worked in the Baltimore/Washington DC/Virginia area for the last 12 years. Ms. Nelson's experience for cathodic protection and corrosion control is concentrated to the water and wastewater municipalities. Ms. Nelson has extensive field and design experience in both engineering and construction of corrosion control measures including cathodic protection systems. A particular emphasis on underground piping including corrosion evaluation of buried pipes based on statistical analysis of site data, and design of cathodic protection systems for buried pipes. Ms. Nelson has extensive experience in pipeline failure analysis including soil environments and metallurgical analysis.

Other engineering experience includes testing, evaluation, design and troubleshooting of both impressed and galvanic cathodic systems for water piping systems. Ms. Nelson has conducted field surveys, commissioning and troubleshooting of cathodic protection systems designed for water and sewer pipelines, natural gas transmission pipelines, and oil pipelines. Ms. Nelson has been involved with the stray current control aspects of AC mitigation along gas pipelines in the high voltage AC corridor. This experience has included monitoring of AC current density, DC current density, and the level of cathodic protection along the gas pipelines, as well as assisting in the development of specifications and recommended design packages.

Risky Business: Prioritizing System-Wide Water Main Renewal with Data-Driven Precision
Thursday 8/28/2025, 11:00:00 AM, Room 201

Primary Author: Nicholas D'Angelo, Project Engineer, RK&K

Anne Arundel County Department of Public Works (DPW) launched a Water Main Renewal Prioritization Program that uses a risk scoring methodology combining likelihood and consequence of failure factors for a data-driven approach to prioritizing maintenance and renewal. Leveraging the VUEWorks asset management system, the program integrates GIS connectivity to evaluate water main assets using five Likelihood of Failure (LoF) and five Consequence of Failure (CoF) attributes. Stakeholder workshops addressed data gaps, refined attributes, and calibrated scoring for real-time risk updates. This approach enhances asset management, prioritizes maintenance, and informs capital planning, while enabling extension to other infrastructure systems.

Mr. D’Angelo is a Project Engineer with RK&K, with over six years of experience in project management, condition assessment, water asset prioritization and planning, and external corrosion control and cathodic protection program management. Mr. D’Angelo has a Bachelor’s degree in Corrosion Engineering and is a registered Professional Engineer in Maryland.

Resilience and Innovation: Inspecting and Assessing the Anacostia Force Main to Safeguard DC's Critical Wastewater Infrastructure
Thursday 8/28/2025, 11:30:00 AM, Room 201

Primary Author: Getachew Melsew, Senior Manager, DC Water

The DC Water team faced numerous challenges in inspecting and assessing the Anacostia Force Main (AFM) – a 108-inch, 6.25 mile long, prestressed concrete cylinder pipe (PCCP). The team deployed the INGU Piper, a neutrally buoyant 3-inch spherical multi-sensor device, to conduct a screening inspection. The insights gained from the inspection have significant implications for the AFM's rehabilitation, scheduled to begin in Fiscal Year 2025. The planned capital investment is expected to be reduced by approx. 60%, focusing on areas affected by biogenic corrosion. This presentation highlights the innovative technologies and methodologies used by the DC Water team, showcasing their resilience and commitment to maintaining critical infrastructure.

Getachew is the Senior Manager of the Department of Engineering and Technical Services at DC Water. He is a licensed professional engineer, program management professional, and Associate DBIA. With over 25 years of experience in consulting, project management, and program management, he has worked across the US, Africa, and the Middle East. His expertise includes the design of water and wastewater systems, development of master and facility plans, conducting condition assessments of water and sewer assets, asset management, and creating capital improvement plans.

Emergency Response for 30-Inch PCCP at Anacostia Drive: Leveraging Pipeline Assessment Technology for DC Water
Thursday 8/28/2025, 12:00:00 PM, Room 201

Primary Author: Ali Alavi, Conveyance Subsector Leader, Stantec

The reliability of large-diameter potable water mains is critical for consistent water delivery. This project focused on the emergency response for a 30-inch PCCP trunk main along Anacostia Drive in Southeast Washington, D.C. Using Pure Technologies' Robotic EM technology, the inspection covered 1.45 miles and took 11 days. The inspection combined HD CCTV and EM technology to identify defects and locate broken wire wraps. Despite stringent permitting requirements, the project swiftly identified leakage points, supporting urgent repairs and contributing to the long-term sustainability of the water distribution system.

Ali has 25 years of consulting, academic, and management experience. He specializes in structural, mechanical engineering, and infrastructure. With a strong focus on innovation, Ali has harnessed his extensive technical knowledge and expertise to develop resiliency and digital innovation tools that can be readily implemented by clients worldwide. His expertise includes analyzing and designing complex structures, seismic analysis, real-world failure investigation, condition assessment, failure risk analysis, and repair of deteriorated infrastructure. He provides technical leadership for projects across North America and has played a pivotal role in supporting major water supply projects and programs, resulting in estimated savings of over $10 billion in repair and replacement costs for utilities. Ali is actively involved in the American Water Works Association (AWWA) Pipeline Rehabilitation and American Society of Civil Engineers (ASCE) Seismic Design committees.

Climate Resilience Assessment at the Back River Wastewater Treatment Plant: A Collaborative approach using Design Based Education
Thursday 8/28/2025, 2:00:00 PM, Room 201

Primary Author: Chris Overcash, Johns Hopkins University

Abstract and Bio forthcoming

Patuxent Reservoirs Watershed Protection using GIS
Thursday 8/28/2025, 2:30:00 PM, Room 201

Primary Author: Manoharan Chelladurai, Deputy Director, IT Application Services, WSSC Water

To protect the Patuxent Reservoirs watershed effectively, the Washington Suburban Sanitary Commission (WSSC) and the Patuxent Reservoirs Watershed Protection Group (PRWPG) embarked on a GIS-enabled digital transformation. The redesigned Patuxent TAC GIS Application serves as a centralized geospatial platform, meeting the critical needs of watershed protection by addressing specific challenges, driving innovation, and providing actionable insights.

A visionary leader with over 25 years of experience. The primary responsibilities include refining and implementing WSSC Water's strategic technical vision and leading significant aspects of the Commission's information technology development by fostering innovation, prioritizing technology initiatives, and coordinating the evaluation, deployment and management of current and future technology systems across the organization.

Collaborative Water Supply Modeling to Support Loudoun Water Planning and Operations
Thursday 8/28/2025, 3:00:00 PM, Room 201

Primary Author: Abby Bollinger, Assistant Engineer II, Hazen and Sawyer

This presentation outlines the development and benefits of an integrated water supply model for Loudoun Water. Loudoun Water invested in an OASIS model, a mass balance model that simulates their water system, and committed to long-term modeling collaboration with consultant support. The presentation highlights how collaboration refined the model and supported planning and operations and showcases three use cases: converting retired quarries into reservoirs, calculating the safe yield of the system and evaluating regulatory scenarios for water withdrawals. The presentation demonstrates the value of collaborative modeling in enhancing water supply reliability and navigating permitting challenges, serving as a blueprint for other utilities.

Abby Bollinger is an Assistant Engineer with Hazen and Sawyer's Water Resources Practice Group. Abby holds a BS in Civil Engineering with a focus in environmental and water resource engineering from the University of Maryland, College Park. Since joining Hazen in 2022, she has specialized in water supply modeling and integrated planning while also assisting source water protection planning, drought plan management and emerging contaminant analyses.

Secondary Treatment Intensification: MOB Process Trial to Enhance Capacity and Improve Sludge Settleability at Midwest WWTP
Thursday 8/28/2025, 4:00:00 PM, Room 201

Primary Author: Erik Anderson, Wastewater Process Engineer, Nuvoda

This presentation will cover the goals, challenges, and solutions explored during the pilot study of the MOB process at the Winona, MN Wastewater Treatment Plant. It will feature both historical and trial data, providing insights into the facility's current operational performance. Key topics will include operational hurdles, SVI improvements, and alleviating process upset impacts. There will be emphasis on the ambitious goal of transforming a plant with no ammonia permit to a facility with year-round, complete nitrification.

Erik has been in the wastewater industry for six years in roles from consulting, process engineering, and project management. He joined the Nuvoda team in 2023 as a project and process engineer responsible for designing, modeling, and supporting existing and new installations of mobile organic biofilm processes. He holds a master's degree in civil engineering from Marquette University. His master's research and thesis studied sludge pre-treatment methods to reduce phosphorus release during anaerobic digestion.

Got a Need for Speed? Using (Ultra)Sonic Technology to Mitigate Algal Blooms Now
Thursday 8/28/2025, 4:30:00 PM, Room 201

Primary Author: Rachel Dermer, Staff Professional, Carollo Engineers

The Porter Filter Plant (PFP) is one of two water plants serving the City of Wilmington, DE (City). In recent years, the PFP has experienced algal blooms within their open-air, raw water Porter Reservoir at greater frequencies. These blooms have resulted in taste and odor complaints and required the City utilize extra chemical dosing for treatment. Mitigating these blooms is beneficial to maintaining effective operations of the existing processes downstream of the reservoir and is a critical first measure toward future PFAS treatment upgrades. This presentation will provide a background on algal blooms and their impact on water treatment processes, discuss the alternatives evaluation process, and implementation results.

Rachel Dermer is a staff professional with experience in a diverse range of water and wastewater projects, including water treatment, stormwater management, condition assessment, asset management, and master planning. Her work has included conducting alternative analysis efforts and vendor outreach for several technical solutions, working closely with technical experts and the client to meet their needs best.

Community Engineering Corps - Supporting Sustainable Community-Driven Water & Wastewater Infrastructure Solutions Through Equity
Thursday 8/28/2025, 5:00:00 PM, Room 201

Primary Author: Heather Mullen, Program Engineer - Community Engineering Corps, American Water Works Association

The Community Engineering Corps program works to strategically pair technical volunteers with underserved communities to work together to identify and recommend solutions that work best for the community's needs and constraints. This allows for the communities to receive engineering services pro-bono, eliminating the concerns around the affordability of preliminary engineering. By providing these pro-bono consulting services, the program is able to assist communities in unlocking funding that can then be used to design and construct their infrastructure improvements while providing a meaningful way for technical professionals to give back.

Heather Mullen graduated from the University of Colorado Boulder in December 2021 where she received a BS in their Engineering program - focusing on Environmental Engineering and an emphasis in Environmental Policy. Heather's background is in private consulting where she focused on collection systems flow monitoring, and GIS mapping. In her role at AWWA, Heather manages program involvement with the Sections, as well as individual projects and volunteer teams participating in the program.

Transformation of Crownsville's Water and Sewerage Systems from Historic State Institution to a Reimagined Premiere Multiuse Park
Thursday 8/28/2025, 8:30:00 AM, Room 202

Primary Author: Joe Burns, Senior Project Engineer, RK&K

This presentation provides a summary of the work by Anne Arundel County and RK&K to urgently transform water and wastewater systems to serve a reimagined Crownsville Hospital Memorial Park. The 485-acre Crownsville State Mental Hospital was abandoned and conveyed to the County in July 2022. The Crownsville site has water and sewerage systems whose original development was overseen by Abel Wolman and today serves 13 private tenants. When the County took over operation of these facilities, most of the water and wastewater assets were in very poor operating condition and inadequate for serving existing conditions. This presentation will highlight the specific actions that have resulted in a dramatic transformation of antiquated assets.

Mr. Burns is a Senior Project Engineer with RK&K, with 50 years of experience in project management, condition assessment and design of all aspects of water and sewerage systems. Mr. Burns has a bachelor's degree in civil engineering and is a registered Professional Engineer in Maryland and several other states.

From Workshops to Results: Effective Collaboration in Control System Upgrades
Thursday 8/28/2025, 9:00:00 AM, Room 202

Primary Author: Seth Rang, Project Manager, KCI Technologies, Inc.

The Broadwater Water Reclamation Facility in Maryland upgraded its 2.0 MGD Process Control System to enhance reliability by transitioning from outdated hardware and SCADA to a modern ControlLogix and VTScada system. The upgrade included fault-tolerant fiber optics, dual servers, and managed switches. Careful planning, field verifications, and collaboration with County staff ensured smooth integration and alignment with concurrent upgrades, such as blower replacements. The result is a scalable, reliable system with intuitive SCADA for operators, robust equipment for maintenance, and future-ready infrastructure.

Mr. Rang is a licensed electrical and control systems engineer with 13 years of experience with instrumentation, controls, and power system designs associated with water and wastewater facilities throughout the Mid-Atlantic Region. He is responsible for conceptual design, development and final design, preparation of plans, specifications, cost estimating, construction admin services, and startup assistance during facility commissioning. He is currently a Project Manager at KCI Technologies in their Sparks, MD office.

Innovative Turbidity Monitoring: How the Swan AMI Turbiwell Eliminates the Need for Recalibration
Thursday 8/28/2025, 9:30:00 AM, Room 202

Primary Author: Garrett Figley, Technical Market Development Lead, Swan Analytical USA, Inc

The Swan AMI Turbiwell has been meticulously designed to function without the need for traditional formazin calibration, offering a reliable and approved alternative method to US EPA 180.1, for continuous measurement of turbidity. This presentation will explore the innovative design behind the system, highlighting how its unique components work to achieve precise turbidity measurements without the complications of calibration. Attendees will gain an in-depth understanding of the necessary steps for end users to maintain compliance, as well as the underlying theory of the non-contact nephelometer.

Garrett Figley (B.S. Biological Chemistry and Molecular Biology, Wayne State University) Garrett's position at Swan Analytical Instruments USA Inc. is Technical Market Development Lead. He is responsible for Swan's technical documentation, writing, presenting at conferences, and operator training. Garrett joined Swan Analytical USA Inc. as a Service Technician. This position provided Garrett with exposure to a wide range of industries and helped strengthen his technical background.

Cybersecurity 101 for Water Engineers
Thursday 8/28/2025, 11:00:00 AM, Room 202

Primary Author: Gabriel Agboruche, Executive Director, OT & Cybersecurity, Jacobs

As water facilities increasingly integrate digital systems into their operations, understanding cybersecurity fundamentals has become essential for water engineers and system owners. This presentation will equip engineers and leaders with a foundational knowledge of cybersecurity tailored to the unique demands of water infrastructure.

Gabriel Agboruche is a seasoned OT cybersecurity leader with over a decade of combined engineering and cybersecurity expertise. Currently serving as the Executive Director of OT & Cybersecurity at Jacobs, Gabriel is at the forefront of delivering comprehensive cybersecurity solutions across critical infrastructure sectors. He has developed and implemented strategic initiatives, including direct client consulting, managed services, and third-party vendor partnerships, to drive excellence in the Jacobs OT cybersecurity practice.

Gabriel has spearheaded global incident response efforts for some of the most significant industrial cyber incidents, including leading the technical response for a major oil and gas event. He also developed Jacobs' proprietary OT threat hunting and assessment methodologies, strengthening the resilience of critical industrial environments.

A visionary technical leader, Gabriel is a frequent speaker at prominent cybersecurity conferences, such as the SANS ICS Summit and the Oil & Gas Cybersecurity Summit. He has shared insights on topics ranging from threat hunting to OT incident response and network defense. His role extends beyond technical leadership to representing Jacobs in public forums, advocating for cybersecurity innovations, and promoting awareness.

Gabriel holds a BSc in Electrical Engineering from Michigan Technological University and an MSc in Cybersecurity Technology from the University of Maryland Global Campus. His credentials include multiple SANS certifications, such as GICSP, GRID, and GSLC, reflecting his deep technical acumen.

A passionate advocate for cybersecurity education, Gabriel regularly mentors early career professionals and contributes to the growth of the cybersecurity community. He has served on advisory boards, participated in podcasts, and volunteered with the Michigan Cyber Civilian Corps, underscoring his commitment to enhancing cybersecurity resilience nationwide.

Holistic Process Optimization of Water Resource Recovery Facilities using Reinforcement Learning
Thursday 8/28/2025, 11:30:00 AM, Room 202

Primary Author: Henry Croll, Wastewater Data Scientist and Process Engineer, HDR

This study found that machine learning has the potential to optimize plant operation, reduce resource consumption, and increase capacity, but also help with addressing staffing shortages and the loss of experienced operators to retirement.

Henry Croll is a wastewater data scientist and process engineer at HDR. With a PhD from Iowa State University, Henry's work bridges traditional wastewater engineering and cutting-edge data science. Henry leverages machine learning techniques to holistically optimize wastewater treatment processes and help develop decision support tools to assist operators.

Digital Twin of Warehouse Operations
Thursday 8/28/2025, 12:00:00 PM, Room 202

Primary Author: Manoharan Chelladurai, Deputy Director, IT Application Services, WSSC Water

This abstract introduces a "Digital Twin of Warehouse Operations" dashboard application designed to revolutionize warehouse management for water utilities. This innovative tool provides near real-time visibility into warehouse activities, enabling enhanced operational efficiency, optimized resource allocation, and data-driven decision-making.

A visionary leader with over 25 years of experience. The primary responsibilities include refining and implementing WSSC Water's strategic technical vision and leading significant aspects of the Commission's information technology development by fostering innovation, prioritizing technology initiatives, and coordinating the evaluation, deployment and management of current and future technology systems across the organization.

Regional Cooperation and Coordination for Water Resource Planning and Management for Drinking Water Sources Supply within the Metr
Thursday 8/28/2025, 2:00:00 PM, Room 202

Primary Author: Joel Caudill, Regional Water and Wastewater Manager, WSSC Water

For over 40 years the Washington metropolitan area major water suppliers have worked together under a number of agreements to effectively manage the source water resources to maximize availability of supplies during times of drought helping to ensure a reliable water supply for the nation's capital and its suburban jurisdictions. This regional cooperation is anchored through two agreements, the Low Flow Allocation Agreement and the Water Supply Coordination Agreement. This presentation will review the history leading to the agreements, summarize key provisions of the agreements, look at how things have worked out as a result the agreements, and the challenges ahead for the metropolitan area water supply.

Joel Caudill is a licensed professional civil engineer with over 39 years of experience including consulting, water and wastewater utility operations, and utility management. Currently, Joel is the Regional Water and Wastewater Manager for WSSC Water where he supports WSSC's regional water supply planning. Joel also manages interjurisdictional agreements between WSSC and surrounding utilities and is a technical resource and subject matter expert providing input and analysis for various state regulatory and legislative issues that could impact the Commission. Joel is the current president for the Maryland Association of Wastewater Agencies (MAMWA).

Additional info:

BSCE, 1986, University of Maryland

MS, 1996 University of Maryland, Civil and Environmental Engineering Department

Professional Engineer, MD # 19338

Member ASCE, Member AWWA, WEF

Baltimore's Comprehensive Watershed Management Plan: A Template for Regional Source Water Protection
Thursday 8/28/2025, 2:30:00 PM, Room 202

Primary Author: Phoebe Aron, Senior Principal Scientist, Hazen and Sawyer

The City of Baltimore's Department of Public Works provides drinking water to over 1.8 million customers. Raw water is sourced from Prettyboy, Loch Raven, and Liberty Reservoirs and treated at two water plants. The City has initiated a multi-year comprehensive watershed management plan that addresses policy options for watershed protection, water quality trends, spill response, dam infrastructure evaluation, and drought preparedness. The presentation will share the City's progress, lessons learned, and ways other utilities can adopt similar collaborative, integrated water protection strategies.

Phoebe Aron is a Senior Principal Scientist at Hazen and Sawyer based in Baltimore, MD. She has extensive expertise in source water protection, watershed management, and water quality projects in the Mid-Atlantic and around the country.

Advancing Master Planning Techniques: Demand Forecasting for Comprehensive Infrastructure Planning
Thursday 8/28/2025, 3:00:00 PM, Room 202

Primary Author: Emily Keller, Staff Professional, Carollo Engineers

This presentation will explore the demand forecast model developed to support water, wastewater, recycled water, and long-range water supply planning for Loudoun Water.

Emily Keller is a staff professional with experience in hydraulic modeling of distribtion and collection systems, and wastewater asset management. She has developed and updated hydraulic models, including providing system calibration, evaluations, improvement planning, and alternatives evaluation using various software. She also has experience in developing risk models using InfoAsset Planner, interagency coordination, and asset renewal prioritization.

Without the Labs You Are Only Guessing: Why Lab Data is Also Front Line in Operations for the Department of Public Works
Thursday 8/28/2025, 4:00:00 PM, Room 202

Primary Author: Sadi Thomas, Laboratory Technical Administrator, City of Baltimore

City of Baltimore utility municipal laboratories are often overlooked, despite being central to the operations of several divisions within the Department of Public Works. Our labs exist on the data front-line, where critical information is generated and analyzed. However, laboratory subject matter experts (SMEs) are rarely included as scientific consultants in operational, permit, and legislative decisions at the municipal level, unlike lawyers who are frequently involved in high-level decision-making. Despite the paramount importance of the Chemistry and Biology of urban water maintenance, the scientific input in decision-making processes can often be neglected.

Sadi Caldarazzo is a Laboratory Administrator for the City of Baltimore's Department of Public Works, Laboratory Operations Division. She has 22 years of experience with water and wastewater analysis and management. She holds a B.S. in Biology with a minor in Chemistry, M.B.A with a concentration in Leadership.

Using CMAC Technology to Meet Chesapeake Bay TMDL Goals in Montgomery County, MD
Thursday 8/28/2025, 4:30:00 PM, Room 202

Primary Author: Jason Murnock, Mid-Atlantic Account Representative, OptiRTC, Inc.

While all states and localities within the Chesapeake Bay drainage area continue to work diligently toward achieving their respective TMDL requirements, Montgomery County, a highly urbanized Phase I MS4 with relatively high goals, has found it useful to employ novel, new technologies, namely that of the Continuous Monitoring and Adaptive Control (CMAC) of stormwater, to assist in these challenges.

Jason Murnock, CPESC, CPSWQ has been assisting clients with solutions to water quality and stormwater management issues here in the Chesapeake Bay area since 2002. Representing OptiRTC and their CMAC technology has been a great addition to this history, providing an innovative way for communities and owners of stormwater management facilities to see how the facility is functioning in real-time and enabling greater quality and quantity benefits over passive configurations.

Creating a Stormwater Authority – Everything You Need to Know
Thursday 8/28/2025, 5:00:00 PM, Room 202

Primary Author: Vanessa Nedrick, Principal, Regional Manager, Remington & Vernick Engineers

RVE serves as the Stormwater Engineer for Warminster Municipal Authority (WMA) in Bucks County, PA. In 2021, WMA expanded to manage stormwater facilities, creating a stormwater utility. This transition improved efficiency and reduced competition with other services. The presentation will explore WMA's journey from a water and sewer authority to managing a $3 million stormwater program. Attendees will learn about the administrative, engineering, regulatory, financial, operational, and legal aspects of forming and running a stormwater utility, with real-world examples highlighting challenges, successes, and lessons for municipalities considering similar initiatives.

Vanessa Nedrick, PE, is a Principal and Regional Manager of RVE's Water/Wastewater Division with over 25 years of experience in municipal water, wastewater and stormwater engineering. A Drexel University alumna, she began her career at the Philadelphia Water Department, specializing in water, stormwater and trenchless technology design. Vanessa has authored technical papers for major industry conferences and serves as 2nd Vice President of the Pennsylvania Water Environment Association (PWEA).

Design and Construction To Incorporate A New 360 MGD Headworks At ALCOSAN WWTP
Thursday 8/28/2025, 8:30:00 AM, Room 203/204

Primary Author: Robert McLean, Associate Vice President, Whitman, Requardt and Associates, LLP

This presentation will focus on the collaborative work between the plant, contractor and engineer before the shutdown occurred, how the shutdown performed, and where we are now. We will also focus on lessons learned for future shutdowns still needed to fully integrate the new headworks.

With more than 20 years of experience, Bob specializes in the detailed design of pump stations, transient analysis, conveyance and storage systems, process design, rehabilitation of existing facilities, preparation of contract drawings, specifications, cost estimates, and engineering services during construction.

Innovative Water Resource Recovery: Cutting-Edge Practices at WSSC Water
Thursday 8/28/2025, 9:00:00 AM, Room 203/204

Primary Author: Caroline Nguyen, Principal Scientist, WSSC Water

This presentation highlights innovative technologies and practices from WSSC Water's wastewater R&D portfolio and their impact on enhancing operational reliability, resilience, and sustainability. Transformative initiatives include sidestream enhanced biological phosphorus removal at the Parkway WRRF and switching to low dissolved oxygen operations at the Seneca WRRF to substantially cut energy and chemical use. WSSC Water is also leading an innovative DOE project advancing technology development to capture CO2 at the Bioenergy facility and transform into a marketable product for use in nutrient removal. These and other innovations demonstrate how pilot projects initiated 3-4 years ago have evolved into full-scale, impactful solutions.

Dr. Caroline Nguyen is a Principal Scientist at WSSC Water, and has been with the organization 14 years. Dr. Nguyen actively advances, pilots, and implements innovative initiatives aimed to recover more resources from wastewater and reduce operating costs including through efficient nutrient removal and anaerobic digester enhancements. Dr. Nguyen holds a PhD and Master's degree from Virginia Tech, and a Bachelor's degree from NC State in environmental engineering.

Innovative Solution to Meet ENR Limits in the Chesapeake Bay Watershed in a Severely Underloaded Plant
Thursday 8/28/2025, 9:30:00 AM, Room 203/204

Primary Author: Rob Kershner, President and CEO, Innovatreat, Inc.

Decentralized wastewater treatment facilities for housing development that need to meet ENR standards face a unique challenge, they are inherently underloaded at start up but still need to meet permit limits. To achieve this, the system must both be designed for significant turndown and an innovative and precise control strategy must be employed. This presentation is a case study of a facility that started up at 10% of design flow while consistently meeting effluent limits.

Founder

Underground Utility Locating and Potential Benefits Inside the Fence
Thursday 8/28/2025, 11:00:00 AM, Room 203/204

Primary Author: Chris Endryas, Project Engineer, RK&K

The Annapolis WRF is a 13 MGD treatment facility which has undergone several upgrades since the original construction in the 1970s. These upgrades have left some portions of the site congested with underground utilities. RK&K and Anne Arundel County are working to progress three design projects in the same area of the site and agreed to explore underground utility mapping based on knowledge gained from past projects in which as-builts did not accurately reflect the field conditions of underground utilities. The team worked with a specialized underground utility mapping firm to create a 3D map of the underground utilities and better understand the benefits and limitations of these techniques which could be advantageous for many Owners.

Chris Endryas is a Project Engineer in RK&K's wastewater treatment design group. Chris is a graduate from the University of Maryland in 2016 and first started with RK&K as an intern in 2014. Chris has designed a variety of unit processes for small, medium and large wastewater treatment facilities in the mid-Atlantic. Chris' specialty is detailed, complex designs for space constrained or complicated rehabilitations. Chris works on both traditional design-bid-build projects and design-build projects.

Construction Update from Back River WWTP: Egg-Shaped Digester Rehabilitation
Thursday 8/28/2025, 11:30:00 AM, Room 203/204

Primary Author: Maia Tatinclaux, Project Delivery Leader, RK&K

This presentation will provide updates from the Egg-Shaped Digester Rehabilitation and Improvements project which is currently under construction. The presentation will cover challenges encountered during construction along with unique photos and results from the inspection of the interior of the concrete egg-shaped digester. Construction of this project is approximately 50% complete.

Maia Tatinclaux is a project delivery leader at RK&K. She has over 10 years' experience working on design of wastewater treatment systems ranging from the rehabilitation or upgrade of existing systems to brand new municipal wastewater treatment plants. Maia enjoys visiting treatment plants of all types and sizes and learning from operators and plant staff. Additionally, she is a member of the Short Course committee and has been teaching a course on sludge processing for the last 6 years.

Out with the Old, in with the New: Centrifuge Dewatering at the Mauldin Road WRRF
Thursday 8/28/2025, 12:00:00 PM, Room 203/204

Primary Author: Lindsay Diaz, Project Manager, GHD

The transition from belt filter press to centrifuge dewatering at ReWa's Mauldin Road Wastewater Resource Recovery Facility includes key design and operational factors to meet current and future demands as ReWa transitions to full time dewatering operations for greater biosolids management flexibility as part of their biosolids master plan. This presentation summarizes the key parameters used to size the centrifuges including solids and hydraulic loading rates, G-volume, solids feed concentrations, polymer demand, orthophosphate concentration, and capture rate. The presentation also highlights other components of the dewatering upgrade such as physical spacing, solids conveyance, and sludge storage.

Lindsay has over 9 years of experience in wastewater process design and engineering. She received her undergraduate degree in Environmental Studies from UNC Chapel Hill and a master's in civil engineering from UNC Charlotte. Her areas of interest include secondary treatment process optimization, facility planning, and biosolids management. In her spare time, Lindsay enjoys gardening and travelling.

We Will Grit By! An Increasingly Complex Grit System Rehabilitation
Thursday 8/28/2025, 2:00:00 PM, Room 203/204

Primary Author: Grace Wang, Principal Project Manager, Gannett Fleming

The Howard County Little Patuxent Water Reclamation Plant (LPWRP) in Savage, Maryland, with a rated annual average flow of 29 million gallons per day (MGD), is undergoing critical rehabilitation of its aging grit removal facility. The engineering consultant's initial scope involved upgrading this facility to replace outdated equipment and elevate electrical systems above the 100-year floodplain. However, during the design phase, further structural deterioration and an unexpected leak necessitated an expansion of the project scope to include emergency design and construction.

Grace Wang is a principal project manager at Gannett Fleming with over 20 years of experience in engineering consulting. She earned her Ph.D. in Civil Engineering from Virginia Tech and has specialized expertise in wastewater engineering. Throughout her career, she has successfully led complex projects, leveraging her deep technical knowledge and collaborative approach to deliver innovative and sustainable solutions.

Seven Habits of Highly Effective PFAS Source-Trackers
Thursday 8/28/2025, 2:30:00 PM, Room 203/204

Primary Author: Michelle Young, Senior Technologist, Carollo Engineers, Inc.

This presentation will share conclusions of WRF's Project #5082: Investigation of Alternative Management Strategies to Prevent PFAS from Entering Drinking Water Supplies and Wastewater. It is beneficial to characterize PFAS sources and minimize PFAS contamination of water resources. We reviewed PFAS source databases, surveyed utilities, and conducted PFAS mass balances in watersheds and sewersheds.

Michelle Young, PhD, is a Senior Wastewater Technologist with Carollo Engineers. She has more than 15 years of experience as a wastewater treatment researcher and process design engineer. She received her MS and PhD from Arizona State University, focusing on holistic wastewater treatment and modelling. Michelle is one of Carollo's national leads for PFAS in wastewater. Her projects have focused on PFAS source identification and providing solutions for PFAS removal in water and wastewater effluent streams in the near- and long-term based on current and anticipated regulatory status.

Enhancing Wastewater Pump Station Rehabilitation with Advanced Tools and Collaboration
Thursday 8/28/2025, 3:00:00 PM, Room 203/204

Primary Author: Daniel Jeon, Senior Project Manager, Gannett Fleming TranSystems

This abstract highlights the innovative design approaches and collaboration of the Quad Avenue Pump Station, a vital part of Baltimore's sewer collection system since 1979. The project upgraded pumps, bar screens, HVAC, electrical systems, and instrumentation while leveraging advanced tools like drones, 3D radar scanning, and Autodesk Revit BIM Collaborate with AI-enhanced features. These technologies ensured a conflict-free design and included a 3D walkthrough for utility owners to virtually experience proposed improvements. Attendees will learn how cutting-edge tools and collaborative workflows drive efficient, inclusive, and innovative infrastructure solutions while meeting minority business participation goals.

Daniel Jeon is a senior project manager with Gannett Fleming, bringing 20 years of expertise in managing design and design/build projects, including collection systems, pumping stations, and water and wastewater treatment facilities. Daniel holds a bachelor's degree in Civil and Environmental Engineering from Utah State University and a master's degree from Cornell University. Beyond his professional achievements, Daniel remains actively involved in his teenage sons' lives, coaching their baseball and basketball teams. His passion for both engineering and family reflects his dedication to creating lasting impacts in his work and community.

How simple programming changes can lead to significant automation and optimization of plant operations
Thursday 8/28/2025, 4:00:00 PM, Room 203/204

Primary Author: Nate Hovorka, Water/Wastewater Engineer, GHD

The Little Patuxent Water Reclamation Plant had existing instrumentation and equipment that presented an opportunity to automate several areas of the treatment process. In this presentation, Nathan Hovorka (GHD) describes the control narratives used within each unit process, and the benefits / challenges experienced during implementation of the automation programs. Unit processes include flow through Equalization Basins, Primary Clarifiers, and Reactors (Influent / RAS / WAS), along with several others.

Nathan holds a B.S. in Chemical Engineering from Montana State and began his career as a field engineer for a wastewater equipment manufacturer. While working as a Water/Wastewater Engineer for GHD, he has worked on several projects across water distribution systems, wastewater collection systems, and wastewater treatment. He has a particular interest in instrumentation and controls and has had the privilege of assisting the Little Patuxent Water Reclamation Plant with utilizing their existing instrumentation to automate several unit processes throughout the treatment process.

Keeping it Pumping: Replacing an influent pump station while maintaining plant operations
Thursday 8/28/2025, 4:30:00 PM, Room 203/204

Co-Author: Betsy Baldwin, Engineering Manager, Black & Veatch

A major county in Northern Virginia needed to replace its influent pump station at its wastewater treatment plant to handle current and future flows. The design had to factor in the challenges of maintaining influent pumping capacity, staff access to an adjacent office building and adequate parking throughout the 6-year construction and change from existing to new pump stations.

Betsy has led plant design upgrades, developed recommendations for consent decrees, provided construction phase services, process startup and O

Nanobubbles: Intensifying Wastewater Treatment & Nutrient Removal While Mitigating Process Inhibition and Seasonal Upsets
Thursday 8/28/2025, 5:00:00 PM, Room 203/204

Primary Author: Andrea White, Global Director of Water Process Engineering, Moleaer, Inc.

Struggling with nutrient limits & rising costs? Discover how nanobubble technology intensifies wastewater treatment, boosting nitrogen removal (25-40%), reducing energy (15-40%), & increasing biogas (10-25%). See full-scale data & learn how nanobubbles mitigate process upsets for stable, efficient treatment.

Andrea has dedicated her career in environmental engineering to improving water quality through new and emerging technologies. With over 20 years of experience in wastewater treatment process design, she specializes in biological processes, nanobubble treatment, and oxygen transfer. As the Global Director of Water Process Engineering at Moleaer, Andrea leads a team in developing nanobubble applications that enhance treatment efficiency, intensify existing processes, and lower treatment costs.

Bench-Scale Assessment of PFAS Removal Options on Surface Water– a Virginia Story
Thursday 8/28/2025, 8:30:00 AM, Room 207/208

Primary Author: Joe Nattress, Drinking Water Discipline Leader, CDM Smith

The purpose of this presentation is to present the assessment of surface water treatment options for PFAS. The presentation will provide participants with a review of results from bench-scale testing on removal of long and short-chain PFAS compounds, along with how the information is being used to inform future decisions on pilot testing and plant operations.

Joe serves as a Drinking Water Discipline Leader and Associate at CDM Smith. With over 25 years of experience, he has expertise in pilot testing, designing, constructing, and commissioning water treatment facilities across various sources and capacities. In recent years, he has focused on PFAS treatment in drinking water, leading numerous studies and testing to evaluate and implement treatment technologies for groundwater and surface water treatment plants in the Mid-Atlantic and Northeastern US. Joe is a registered professional engineer in several states and actively volunteers with AWWA.

Getting the Treatment Right—Pilot Study for an 80 MGD PFAS Surface Water Treatment Plant
Thursday 8/28/2025, 9:00:00 AM, Room 207/208

Primary Author: Vanessa Nedrick, Principal, Regional Manager, Remington & Vernick Engineers

The Jersey City Municipal Utilities Authority (JCMUA) operates an 80 MGD surface water treatment facility that supplies treated water to Jersey City and surrounding communities. In 2013, PFAS contamination was detected in the source river, requiring the JCMUA to evaluate cost-effective treatment solutions. In collaboration with Veolia and RVE, a pilot project was initiated to test four PFAS removal methods: GAC retrofitting, post-filter GAC contactors, ion exchange units and dual-media contactor systems. This presentation outlines the pilot study process, from planning and testing to final recommendations and examines the site and hydraulic constraints that influenced the chosen treatment option.

Vanessa Nedrick, PE, is a Principal and Regional Manager of RVE's Water/Wastewater Division with over 25 years of experience in municipal water, wastewater and stormwater engineering. A Drexel University alumna, she began her career at the Philadelphia Water Department, specializing in water, stormwater and trenchless technology design. Vanessa has authored technical papers for major industry conferences and serves as 2nd Vice President of the Pennsylvania Water Environment Association (PWEA).

Design, Construction and Startup of a 30 MGD PFAS Treatment Facility
Thursday 8/28/2025, 9:30:00 AM, Room 207/208

Primary Author: Craig Murray, Business Practice Leader, CHA Consulting, Inc.

Veolia Water Delaware (VWDE) owns and operates the 30 MGD conventional Stanton WTP in Wilmington, DE. In May 2022, VWDE initiated a design-build approach for the construction of a PFAS treatment system using granular activated carbon (GAC) pressure vessels. During the design phase evaluations were performed regarding building configuration and siting, plant hydraulics and pumping options, chemical feed usage, backwash management and media installation and removal. This presentation includes an overview of activities required to design and construct the facility, a review of the planning and execution of startup, and graphical representation of the initial performance of the system.

Craig is a licensed professional engineer with 30+ years' experience in planning, design and construction of municipal and industrial water and wastewater projects in the United States and abroad. As a Business Practice Leader at CHA Consulting, Craig is responsible for more than 100 staff across seven offices between New York and South Carolina. Craig is also a past president of the Chesapeake Water Environment Association.

Holistic Approaches to Advanced Water Treatment: Evaluating PFAS Removal and Auxiliary Benefits in Public Utility Systems
Thursday 8/28/2025, 11:00:00 AM, Room 207/208

Primary Author: Michael Peterson, Project Officer, Ramboll

In anticipation of the forthcoming PFAS maximum contaminant level (MCL), WSSC Water a public water system operating a 300-MGD water filtration plant (WFP) has opted to evaluate a suite of treatment options after detecting trace levels of PFAS in their source water, a major metropolitan river. This study presents an integrated approach to designing a pilot study that assesses the effectiveness of various treatment methods targeting not only PFAS but also manganese and Total Organic Carbon (TOC), to reduce Disinfection Byproduct (DBP) formation within the distribution system.

Michael Peterson, PE, has more than 24 years of professional engineering experience throughout the mid-Atlantic region focused on project management and delivery of detailed designs for municipal projects that involve drinking water treatment, pumping stations, water storage, pipelines, and water treatment residuals.

Digital Tools for Advanced PFAS Treatment – Case Study of a Mid-Sized Water Utility
Thursday 8/28/2025, 5/15/2025 11:30:00 AM, Room 207/208

Primary Author: Reid Cagir, Assistant Engineer II, Hazen and Sawyer

This presentation will delve into the application of artificial intelligence (AI) in designing PFAS removal systems and its implementation at a mid-sized water utility. The presentation will introduce an AI tool capable of identifying optimal GAC products and maintenance schedules for PFAS treatment as a function of water quality, helping to limit the need for physical tests. This AI-based PFAS assessment tool offers cost-effective, data driven predictions for treatment longevity for utilities considering GAC based PFAS adsorption. The presentation will also review the different PFAS treatment technologies and techniques to select the right application based on the PFAS sampling results.

Mr. Cagir works on data science and software development projects in the water and wastewater engineering sector. His skills include wastewater design, data analytics, GIS, and drinking water construction management.

Novel Micro-Sorbent Adsorption/Separation Alternative to using RO, GAC and IX for PFAS Removal
Thursday 8/28/2025, 12:00:00 PM, Room 207/208

Primary Author: John Dyson, Product Manager, Aqua-Aerobic Systems, Inc.

The work covers PFAS removal with a novel micro-sorbent capable handling a wide range of influent PFAS concentrations while producing extremely high-quality effluent. The sorbent(s) is designed to reduce operating costs associated with PFAS removal systems. This is achieved by reducing the amount of sorbent required annually and disposal/destruction costs. The sorbent(s) come in a slurry form allowing for automated loading and removal of the sorbent(s) as needed and changeout time less than one hour. The paper and presentation will look at a range of source waters from drinking water to stormwater to brine waste from RO with varying concentration of PFAS levels. The results will compare adsorption rates of this new micro-sorbent to GAC and

John holds a B.S. degree in Chemistry from Longwood College. He has experience working with many treatment technologies in all parts of water and wastewater facilities. In his over the 30 years, worked on many projects and technologies. In addition, he has been involved in the introduction of several new technologies through his career including clarification processes, membranes, filtration technologies and adsorption process.

The Harford County roadmap for Liquid Chromatography/Tandem Mass Spectrometry PFAS testing.
Thursday 8/28/2025, 2:00:00 PM, Room 207/208

Primary Author: William Smith, Laboratory Superintendent, Harford County Government

In 2022, Harford County's Public Works Department sought to analyze PFAS in-house due to challenges with delayed subcontracted lab results. After approval, Agilent Technologies Inc. was chosen to provide an Ultivo Triple Quadrupole LC/MS. The lab was completed, and the instrument installed in July 2024. With no prior LC-MS experience, the lab achieved impressive sensitivity, meeting EPA standards for PFAS. Harford County plans to be among the first to apply for Maryland's PFAS lab certification in 2025. Future studies will focus on PFAS trends, seasonal changes, groundwater reduction, and optimizing activated carbon usage for PFAS control.

William Smith is the Superintendent of Laboratories for Harford County Department of Public Works, Division of Water

PFAS Treatment for Surface Water: Not your Average Groundwater
Thursday 8/28/2025, 2:30:00 PM, Room 207/208

Primary Author: Lori Kappen, Water Process Practice Leader, Gannett Fleming TranSystems

Surface water sources offer unique water quality challenges for PFAS treatment. This presentation will discuss results and observations from pilot testing at several surface water treatment facilities. Tested media included GAC, ion exchange resins, and alternative organoclay media for PFAS removal. Key take aways from pilot testing include observations on bed life, headloss, fouling, impacts of changing water quality, and secondary impacts on water quality. Considerations for evaluating treatment options and designing a full-scale treatment process will be presented.

Ms. Kappen has over 20 years of experience as a Water Treatment consultant with Gannett Fleming. As the Water Process Practice Leader, she is responsible for engineering services related to water treatment processes, including assessing treatment performance and facilities, developing recommendations for improvement, and determining the basis for design of the treatment process in improvements, expansions, and new treatment facilities. Responsibilities include bench, pilot, and full-scale testing; conceptual, preliminary, and final design; permitting; cost estimating; and general technical assistance. Ms. Kappen received her Bachelor's in Environmental Science from Albright College and Master's in Environmental Engineering from the University of Cincinnati.

Development of Flexible GAC/IX PFAS Pilot Skid and Lessons Learned
Thursday 8/28/2025, 3:00:00 PM, Room 207/208

Primary Author: Gayla Fecher, Director of Engineering - MidAtlantic, Veolia Water Inc

Veolia Water Delaware (VWDE) owns and operates the 30 MGD conventional Stanton WTP in Wilmington, DE. In Q1 2025, VWDE will commence start-up activities for the largest US PFAS treatment facility at this location. The initial media fill totals 1.6 million pounds of GAC, representing 15% of the construction cost. VWDE has been operating a PFAS pilot skid to test various media and configurations to optimize media expenditure as more media becomes available and regulations continue to evolve. This presentation includes lessons learned for pilot skid design, fabrication, start-up, and operation and presents data to show how this pilot was used to understand risk and facilitate full scale media savings.

Gayla is a multi-lingual, licensed PE with 20+ years' experience in planning, design, construction, and operation of public, private, and industrial water and wastewater projects in the UK and United States. She also has 8+ years of international development experience facilitating water resource and structural construction programs in Africa and Central America. As a Director of Engineering at Veolia, she is currently responsible for an $80M annual investment portfolio for the Mid-Atlantic Region.

We Deserve the Best – An Introduction to AWWA's New Single Use Ion Exchange Standard and How It Can Be Used for Projects
Thursday 8/28/2025, 4:00:00 PM, Room 207/208

Primary Author: John Civardi, Senior Technologist, Carollo Engineers

This presentation will provide an overview of AWWA's new single use Ion Exchange Standard. The presentation will describe the components of the standard and how it can be implemented for PFAS removal.

John Civardi has 39 of years of experience in the evaluation and design of drinking water treatment facilities. He is the author of AWWA's book "Ion Exchange for Drinking Water Treatment". He is a member of AWWA's Ion Exchange Standard Committee and is a Fuller Award winner. He is chair of AWWA's Water Treatment Facilities Design and Construction Committee

Resilient Ripples: Upgrading Small Water Systems in Virginia for a Sustainable Future?
Thursday 8/28/2025, 4:30:00 PM, Room 207/208

Primary Author: Anna Kazasi, Director of Engineering, Virginia/Maryland American Water

This presentation highlights the importance of small community public water systems. Despite serving fewer residents, these systems require significant attention for essential upgrades. The focus is on seven very small public water systems, each serving fewer than 50 residential connections. Funded by a $1.26M grant from the American Rescue Plan Act (ARPA), upgrades included installing disinfection treatment, increasing storage capacity, and enhancing facility infrastructure. The presentation also covers challenges in community outreach, permitting, and grant management, resulting in 372 people gaining access to safe drinking water.

Anna Kazasi is a Chemical Engineer with a master's degree in Environmental Protection and Sustainable Development and a second one in Environmental Engineering. She is a registered PE, an Envision Sustainability Professional, and a Construction Document Technologist. She is the Director of Engineering for Virginia/Maryland American Water, accountable for providing professional engineering, planning, direction, and coordination of capital investment projects in Virginia and Maryland.

Go with the Flow: Upgrading Phoenixville's Water Intake, One Pipe at a Time
Thursday 8/28/2025, 5:00:00 PM, Room 207/208

Primary Author: Vanessa Nedrick, Principal, Regional Manager, Remington & Vernick Engineers

The Phoenixville Water Treatment Plant (WTP), serving the Borough of Phoenixville, underwent a comprehensive modernization of its aging raw water intake system. Since 1954, the intake structures had deteriorated due to wear and environmental factors. The project included erosion controls, cofferdam installation, raw water main upgrades and the introduction of advanced passive intake screens and hydroburst systems for debris management. The upgrades enhanced water intake efficiency, reduced maintenance and improved sustainability, ensuring long-term water supply resilience. RVE managed the design, permitting and construction, ensuring compliance with PA DEP regulations and successfully revitalizing the system for future needs.

Vanessa Nedrick, PE, is a Principal and Regional Manager of RVE's Water/Wastewater Division with over 25 years of experience in municipal water, wastewater and stormwater engineering. A Drexel University alumna, she began her career at the Philadelphia Water Department, specializing in water, stormwater and trenchless technology design. Vanessa has authored technical papers for major industry conferences and serves as 2nd Vice President of the Pennsylvania Water Environment Association (PWEA).

A Discussion of Resources and Tools Available to Prepare Risk and Resilience Assessments and Emergency Response Plans
Thursday 8/28/2025, 8:30:00 AM, Room 215

Primary Author: Paul Deardorff, Senior Associate, JMT

This presentation will provide a discussion of resources and tools available to utility managers and technical assistance providers to meet the requirements of the American Water Infrastructure Act (AWIA). AWIA requires utilities serving more than 3,300 people to prepare and certify a Risk and Resilience Assessment (RRA) and Emergency Response Plan (ERP) to meet staggered deadlines throughout 2025 and 2026. This presentation will be useful for water system owners and operators who will be required to update and certify RRA and ERP documentation over the next two years.

Paul is a Senior Associate with JMT in the Hunt Valley, MD office. He has 20 years of experience supporting clients operate and maintain their water and wastewater utility infrastructure.

From Revolution to Renovation: Revamping Annapolis's Hidden Infrastructure
Thursday 8/28/2025, 9:00:00 AM, Room 215

Primary Author: Jessie Burneston, Asset Manager/Assistant Superintendent, City of Annapolis

The City of Annapolis modernizes critical water and sewer infrastructure on the coattails of a years-long Baltimore Gas and Electric (BGE) gas main upgrade project. Leveraging a delay to the onset of BGE construction, the City was able to develop an RFP and secure a design-build contract with a pre-qualified design/construction team. Some project constraints included intensely developed areas with minimal parking and a community tired of years of construction while replacing 100+ year-old infrastructure.

Jessie Burneston has 25 years of utility experience and 8 years with the City of Annapolis. He currently serves as the City's Acting Utility Asset Manager and Assistant Utility Superintendent.

Preparing water workforce to advance their skills for digital and AI
Thursday 8/28/2025, 9:30:00 AM, Room 215

Primary Author: Prabhu Chandrasekeran, National Practice Leader, Arcadis U.S. Inc.

Are you the CEO or senior leader, planner, engineer, operator, and or a technician? You feeling the digital/AI fatigue from too much jargon? Then attend this presentation on human-centric principles and less about technology. Learn from your peers on the practical steps through case studies and hand-on activities to plan and advance data-driven initiatives within your organization.

Prabhu applies innovative technologies, managing complex programs, and leading utilities with digital innovation.

Managing and Leading a Hybrid Workforce
Thursday 8/28/2025, 11:00:00 AM, Room 215

Primary Author: Kishia Powell, General Manager, WSSC Water

This presentation would highlight the inter-collaboration of the transition team; use of H2O Stat and Project Stat for performance management; and an organizational approach to developing a high performing team using Lencioni's Model. Additionally, the presentation will share the data assessed to determine the effectiveness of the hybrid workforce posture; a discussion of the equity factors considered to arrive at our hybrid workforce posture; and the workforce development pillars established for our organization.

Kishia L. Powell is a dynamic force in the global water sector with 25 years of experience in both the public and private sectors across the U.S. and London, England.

She leads a team of 1,730 strong and manages the day-to-day operations of the largest water utility in Maryland – the 8th largest in the country – and ensures water and water

resource recovery services are safely provided to 1.9 million customers throughout a 1,000-square-mile service area. WSSC Water's annual budget exceeds $1.5 billion

with a 6-year capital program of $6.4 billion. GM Powell was appointed to serve on President Biden's National Infrastructure Advisory Council's Subcommittee for Workforce Development. She also serves on the board of the National Association of Clean Water Agencies, (formerly as President), representing over 400 clean water agencies across the country. She also serves on the Morgan State University School of Engineering Executive Council. In May 2023, the Maryland Society of Professional Engineers honored her with the Industry Icon Award. Before being selected to lead WSSC Water, Kishia served as DC Water's Chief Operating Officer and Executive Vice President. While at DC Water, Kishia had the honor of testifying before both houses of Congress in support of water sector funding and the Infrastructure Investments and Jobs Act, known as the Bi-partisan Infrastructure Law with historic levels of federal water funding. In September 2023, she was invited to return to the Senate Environment and Public Work Committee to provide testimony on the BIL implementation and progress. Before DC Water, Kishia was the City of Atlanta's Commissioner of Watershed Management, overseeing $644 million in annual operating expenditures and a five-year capital improvement plan of $1.26 billion. Other previous appointments include the City of Jackson, Mississippi's Public Works Director and Bureau Head of Water and Wastewater for the City of Baltimore, where she was recognized by the Chesapeake Water Environment Association as a Water Hero in 2010. A licensed Professional Engineer in Maryland, Virginia and the District of Columbia, she holds a Bachelor of Science in Civil Engineering from Morgan State University's Clarence M. Mitchell, Jr. School of Engineering.

Air Quality Monitoring and Testing During CIPP Installation for Water Mains: A DC Water Case Study
Thursday 8/28/2025, 11:30:00 AM, Room 215

Primary Author: Burak Kaynak, Engineer III, DC Water

DC Water rehabilitated century-old cast iron water mains using Cured-In-Place Pipe (CIPP) with a non-styrene-based epoxy resin. Partnering with the Water Research Foundation (WRF), DC Water aimed to research VOC emissions during CIPP. The University of Texas at Arlington implemented the AQMP, focusing on safety and emissions. VOCs were monitored and analyzed. The final report will guide future practices and provide valuable data for utilities nationwide.

Burak Kaynak is a licensed Civil Engineer/Project Manager at DC Water. He holds a Bachelor's and Master's degrees in Civil, Environmental, and Infrastructure Engineering from George Mason University. With over a decade of experience in the engineering sector, Burak has a strong background in the water and sewer industry within Washington D.C and Virginia. His expertise encompasses the planning, design, and management of a multitude of water and sewer projects.

Using Nextdoor for Water Quality Public Notifications: A Case Study
Thursday 8/28/2025, 12:00:00 PM, Room 215

Primary Author: Ameerah Palacios, National Senior Strategic Communications Lead, HDR

Water systems use a variety of ways to reach and engage with customers. New communication tools like NextDoor empower utilities to have more micro-focused communications that are personalized by neighborhood. NextDoor for Public Agencies gives utilities the ability to reach nearly 1 in 3 households in the United States and geotarget posts to neighbors living in smaller, specialized areas, council districts, wards or zones. This case study notes the approaches and lessons learned for the application of NextDoor for boil water notices and other water communications efforts in Jackson, Mississippi.

Ameerah Palacios elevates brands, helping clients solve their most complex challenges through strategic communications, research, change management and advocacy. With a laser-like focus she supports water executives and utilities with advisory consulting services as well as customer experience and staff action plans that transform situations from noisy crises to customer-oriented solutions. She is a Senior Strategic Communications Lead focusing on water programs, pursuits and projects across the nation.

Try Before You Buy – Launching a Successful Employee Mentorship at Your Utility
Thursday 8/28/2025, 2:00:00 PM, Room 215

Primary Author: Simon Scarlett, Sr. Manager of Operations, Virginia / Maryland American Water

Have you ever wondered how to build up your employee pipeline? How might you be able to formally offer development and real-life training opportunities for employees? This session will share a case study from a utility who launched an inaugural mentorship program and the successes that came from it.

Simon Scarlett is an experienced professional with over 20 years' experience in leadership and management roles in the Defense, Offshore Oil and Gas and Utility industries. Simon joined the Water Utility industry in 2018 as the Virginia / Maryland American Water Safety Manager, driving compliance initiatives across two states, increasing reporting, participation and involvement while steadily improving performance. In 2020, Simon moved into the operations group as a Project Manager executing large statewide initiatives and projects. In Simon's current role of Senior Manager of Operations, Simon has direct oversight over the water and wastewater operations in Dale City, The City of Alexandria, and Bel Air Maryland.

WSSC Water's Strategic Planning plus 145 team members and 1,800 employees
Thursday 8/28/2025, 2:30:00 PM, Room 215

Primary Author: Andres VIllarraga, PM, WSSC Water

WSSC Water engaged 145 employees from across the organization to craft a comprehensive strategic plan. This inclusive process included workshops, interviews, and surveys, as well as assessing current processes against industry trends. WSSC Water also intentionally involved external stakeholders like county representatives and customers throughout the process. This collaborative effort led to a plan that will serve as the organization's guiding North Star towards a Smart One Water future, highlighting the significance of inclusion and innovation in utility transformation. This presentation will offer insights and inspiration for other leaders in the sector to develop strategic plans with broad organizational and stakeholder support.

Andres is a Project Manager for the General Manager's Office of Performance & Accountability where he spearheads the creation and implementation of the Strategic Plan, Digital Transformation, and business process improvements across all departments. Before joining the General Manager's Office, he worked for the Engineering and Construction Group for 12 years and served as the Project Manager for Inflow/Infiltration programs and Pilot Programs for data automation and business process improvements and . Andres is a graduate from George Mason University with a BS and MS Degrees in Civil and Environmental Engineering. He has 15 years of experience managing water and sewer infrastructure projects as well as business process improvements.

Introduction to MD WARN (Maryland's Water/Wastewater Agency Response Network)
Thursday 8/28/2025, 3:00:00 PM, Room 215

Primary Author: Jeff Edgin, GIS Group Leader, Howard County Government Bureau of Utilities

Do You Belong? This session Is an introduction to MD WARN, Maryland's Voluntary Water\Wastewater Agency Response Network. MD WARN's Mission is to support and promote statewide emergency preparedness, disaster response, and mutual assistance for public and private water and wastewater utilities for natural and human-caused events. This session will show how MDWARN works, what is to be expected, and how to join. This session is for all public and private Water and Wastewater Utilities within the State of Maryland. The purpose of MDWARN is to provide a method whereby water/wastewater utilities that have sustained or anticipate damages from natural or human-caused incidents can provide and receive emergency aid and assistance in the form of

Biography: Jeff Edgin has 28 years working in the GIS field. And 28 years working in the Water/Wastewater industry. 20 years with WSSC in several Maintenance positions. 15 years with St. Mary's County as their GIS Manager, and currently 8 years with Howard County Bureau of Utilities as the GIS Group Leader.

Buidling a UAS Program to Support Water & Wastewater Operations at WSSC Water
Thursday 8/28/2025, 4:00:00 PM, Room 215

Primary Author: Anthony Dowell, Associate Vice President, AECOM

Unmanned Aircraft Systems (UAS), also referred to as Unmanned Aerial Vehicles (UAV) or drones, are becoming an increasingly important tools to support asset and utility management. The rapid advancement of UAS technologies and new developments in the regulations governing commercial operations continue to open up new opportunities for UAS technologies to be applied in the water/wastewater industry. Since 2018, the Washington Suburban Sanitary Commission (WSSC Water) has been utilizing UAS systems and sensors to support a variety of critical needs. This presentation will explore WSSC Water's journey and discuss best practices and lessons learned that may be valuable for other utilities.

Mr. Dowell is an experienced water infrastructure, geospatial and engineering technology professional who serves as an Associate Vice President and AECOM’s Area Business Line Leader for Maryland Water, based in Baltimore, Maryland.

Smart Program Management – Digital Solutions Through a Single Source of Truth
Thursday 8/28/2025, 4:30:00 PM, Room 215

Primary Author: Tia Kirby, Water Resources Engineer, Ramboll

DC Water has developed a custom digital solution to maximize program delivery and project excellence for the Lead Free DC program. In this presentation, we will discuss how DC Water has developed a relational database to power user applications with data validation, automated workflows, and interactive dashboards to identify efficiencies, mitigate risks, and increase customer and stakeholder engagement.

Tia Kirby is a Water Infrastructure Engineer at Ramboll in Arlington, VA. She graduated from Carnegie Mellon University Civil Engineering. In her role at Ramboll, she works on a range of drinking, storm, and sanitary linear projects providing engineering design support and coordination with data management teams. Tia is working towards her Professional Engineer License and aims to grow her career into project management in the future, with an interest in climate adaptation and sustainability.

Aligning Organizational and Facility Assessments to Holistically Plan for the Future
Thursday 8/28/2025, 5:00:00 PM, Room 215

Primary Author: jonathon sprague, Senior Asset Management and Operations Consultant, HDR

Kent County, DE Department of Public Works (DPW), having completed the infrastructure buildout of a twenty-year utilities master plan and eager to chart a course for the future, embarked on a maturity assessment of DPW's organization and rapid condition assessment of the Kenty County Regional Resource Recovery Facility (KCRRRF). The concurrence of recommendations emerging from these seemingly different assessments brought immediate attention to the need for an Inflow and Infiltration evaluation and a business case for additional staff.

Jon Sprague is a Senior Asset Management and Operations Consultant with HDR and a former utility exec. Jon has performed a number of organizational and asset management assessments and CMMS implementations. His operations and IT systems background has allowed him to coach clients on utilizing information to drive change. Jon is a PE and has a BSEE from the University of Akron and an MBA from the College of William and Mary.

Taking Innovation and Collaboration to the Next Level – The Story of the Innovation District Pump Station
Thursday 8/28/2025, 8:30:00 AM, Room 217

Primary Author: Don Miller, Construction Manager, Gannett Fleming TranSystems

To accommodate significant residential, commercial, and institutional growth in the North Potomac Yard (NPY) area in the city of Alexandria, VA, the wastewater collection system was needed to be expanded. The area, which includes Virginia Tech's new Innovation Campus, will be a hub for technology, education, and environmentally sustainable. A new sewage pumping station was essential to managing and transporting wastewater from NPY to the Alexandria Renew Enterprises (AlexRenew) wastewater treatment plant. But this wouldn't be any ordinary pumping station. After all, it would be located in the area's Innovation District.

Don is a professional engineer and senior construction manager who has worked in the industry for over 40 years. He has a diverse background, having served as Engineer-of-Record on many infrastructure projects, as a project manager and estimator for a regional water/wastewater construction firm, and as a construction manager for Gannett Fleming TranSystems for over 13 years. Don has particular experience in sewage pumping stations, having been directly involved in well over 20 projects.

Reducing Combined Sewer Overflows with Inflatable Dams
Thursday 8/28/2025, 9:00:00 AM, Room 217

Primary Author: Annie Ding, , Ramboll

The purpose of this presentation is to educate the audience on inflatable dams, design and construction considerations, and how they can be used to manage combined sewer overflows (CSOs) within DC Water's combined sewer system (CSS). This presentation will focus on the history of inflatable dams at DC Water and the current projects underway to improve these systems.

Annie Ding has experience in buried infrastructure and vertical assets as a field and project engineer. She has worked on-site at large pumping and treatment facilities in addition to working on water/wastewater infrastructure design, distribution and collections system modeling, and tank rehabilitation projects in the DC Metro area.

An Innovative Approach to Pump Station Pipeline Inspections Using Rope Access
Thursday 8/28/2025, 9:30:00 AM, Room 217

Primary Author: Kevin Weeks, VP Sales & Marketing, PICA Corp

This presentation will focus on an innovative approach to inspecting pump station piping, utilizing rope access techniques in combination with advanced Non-Destructive Examination (NDE) technologies. Attendees will learn how this method addresses the unique challenges of pump station inspections, such as confined spaces, elevated structures, and operational constraints, while maintaining safety, efficiency, and cost-effectiveness. During the presentation a case study will be presented demonstrating the effectiveness of rope access and NDE technologies being utilized to inspect multiple pump stations in Southern California.

Kevin Weeks is a distinguished professional with over a decade of expertise in the water and wastewater industry. Throughout his career, Kevin has excelled in areas such as technology integration, business strategy, financial analysis, and client retention, driving measurable outcomes for organizations and communities alike.

Kevin's contributions to the industry include leading transformative projects that have enhanced operational efficiency and sustainability. His strategic approach to process improvement and his ability to foster strong customer relationships have consistently delivered impactful results. Known for his leadership and vision, Kevin has successfully guided diverse teams, enabling them to overcome complex challenges and achieve ambitious goals.

With a proven track record of innovation and growth, Kevin's work has not only advanced industry standards but also strengthened the alignment of technical solutions with client needs. His dedication to creating long-term value and his commitment to excellence have established him as a trusted leader in the field of water and wastewater management.

Heroic Efforts in the Potomac River
Thursday 8/28/2025, 11:00:00 AM, Room 217

Primary Author: Eric Lienhard, Program Manager, TYLin / Greeley and Hansen

The Potomac Interceptor (PI) sanitary sewer system carries about 60 million gallons of wastewater daily from areas near Dulles Airport to the Potomac Pumping Station in Washington, DC and was constructed in the early 1960's. In early 2025, engineers and geologists conducted geological investigations within the Potomac River at Great Fall as part of determining rehabilitation and replacement options for 3500LF of the PI. Following a rock mapping geological reconnaissance investigation, a boring machinery was brought into the Potomac River using a Sikorsky S-64E lift helicopter. Five inclined borings were obtained during the investigation. This presentation will discuss the investigations and the heroic efforts involved.

Mr. Lienhard is a Professional Engineer licensed in 5 States and the District of Columbia. With over 30 years of progressive leadership experience in the water / wastewater industry, Mr. Lienhard has a proven track record of leading multi-disciplinary engineering projects to success, achieving the goals of clients while building a highly functioning team. He currently servers as the Program Manager for the DC Water Potomac Interceptor Rehabilitation Program for TYLin. The 54 mile Potomac Interceptor (PI) carries about 60 million gallons of wastewater daily from areas near Dulles Airport to the Potomac Pumping Station in Washington, DC and was installed in the early 1960's.

The Pipeline Puzzle: Investigating the Performance Issues in the James Run Force Main
Thursday 8/28/2025, 11:30:00 AM, Room 217

Primary Author: Nick Lewis, Senior Project Manager, Gannett Fleming

In 2022, Harford County experienced significant performance issues with the James Run Sewage Pumping Station and force main during startup testing, with pumps operating at only 50% capacity. Initial efforts, including pump test verifications, CCTV inspections, and air release valve installations, failed to resolve the issue. Upsizing pump impellers improved performance temporarily, but concerns about recurring problems remained. The team conducted hydraulic modeling and theoretical analyses, identifying trapped air as the likely cause of restricted flow. This presentation will discuss the evaluation methods and proposed solutions

Nick Lewis is a Senior Project Manager in the water group out of GFT's Baltimore office. Nick provides technical and management support for conveyance and storage projects throughout the country and has served in various roles for the Chesapeake Section of AWWA and Hydraulic Institute.

Richmond Large Diameter Geopolymer Sewer Rehab 2018 to 2024. A Look Back and Current Day.
Thursday 8/28/2025, 12:00:00 PM, Room 217

Primary Author: Scott Naiva, Northeast Region Manager, GeoTree (Geopolymer) Solutions

The City of Richmond's first large scale Geopolymer Lining System (GLS) rehabilitation was their 2018 Marshal Street project consisting of 1900 LF of CSO 60" diameter brick pipe. Flash forward six years, the city determined that Marshal Street was a success and still performing well so they issued their 2024 Geopolymer Sewer Rehabilitation project. (24GSR). 24GSR was ~6,700 LF of CSO pipe rehabilitation located at 10 different sites around the city ranging from 24" wide x 42" tall brick egg to 72" wide x 106" tall stone arches. This presentation will be a case discussion looking back on the original 2018 installation and how it is performing, and an evaluation and discussion of the latest 2024 GLS installation.

Scott Naiva, P.E. is the Northeast Region Manager with GeoTree Solutions (A Henkel Company). (Scott.Naiva@Henkel.com 610-971-0362) Scott is responsible for business development of spray on geopolymer mortar solutions for pipe, MH and structure rehabilitation.Scott has 36 years of engineering consulting and business development experience. He has an Engineering degree from Syracuse and an MBA from Eastern University. He is an active member of 3 WEA collection committees. Scott resides in the Philadelphia area with his wife and daughter and enjoys hiking, skiing and anything outdoors.

Service Line Material Identification Without Excavation: Results from DC Water's Pilot Study
Thursday 8/28/2025, 2:00:00 PM, Room 217

Primary Author: William Elledge, Director, Engineering and Technical Services, DC Water

DC Water will share the results of its pilot study to identify non-invasive techniques to identify service line material. Other water system owners will be able to use the results to identify unknown service line materials faster, with less cost, and improved community trust. Compliance with LCRI and the associated public health benefits will be improved as a result of this presentation.

William Elledge is the Director of Engineering and Technical Services at DC Water. His experience includes water, sewer, & storm projects for >25 years across 8 states. His projects include pipelines with up to 24' in diameter, flows >1000 mgd, and lengths >20 miles. At DC Water, he and his team are responsible for project delivery of a portion of the 10-year CIP worth $3 Billion. William is also a certified career coach who loves delivering top-grade work while motivating and retaining staff.

Threading the Needle: Building Dual 42 Mains in Becks Run Road to Keep Pittsburgh's Water On
Thursday 8/28/2025, 2:30:00 PM, Room 217

Primary Author: Nick Lewis, Senior Project Manager, Gannett Fleming

The Becks Run Raw Water Pumping Station (RWPS) and Intake facility are vital to Pennsylvania-American Water Company's (PAWC) water supply system, delivering 60MGD of raw water to the Hays Mine Water Treatment Plant (WTP). The existing raw water transmission system, consisting of four aging mains, was prone to breaks and leaks. To ensure reliable water supply, PAWC initiated the Becks Run Raw Water Main project, replacing the old pipes with 19,000 feet of parallel 42-inch ductile iron transmission mains. 6,5000 feet of 36-inch HDPE pipeline was also installed at grade to maintain flow during construction. The presentation will discuss challenges such as unmarked utilities, thermal expansion, and an aerial pipe crossing.

Nick Lewis is a Senior Project Manager in the water group out of GFT's Baltimore office. Nick provides technical and management support for conveyance and storage projects throughout the country and has served in various roles for the Chesapeake Section of AWWA and Hydraulic Institute.

Upgrading the Catonsville Pump Station: A Comprehensive Approach to Rehabilitation and Sustainability
Thursday 8/28/2025, 3:00:00 PM, Room 217

Primary Author: Tiffany Harrison, Project Manager, Gannett Fleming

The Catonsville Pump Station is undergoing vital upgrades to improve performance, reliability, and environmental compliance. The project focuses on rehabilitating pumps, replacement of interior and exterior components, and implementing sustainable features such as a sodium hypochlorite disinfection system. Key improvements include motor upgrades, corrosion-resistant materials, and a 600-kW generator for uninterrupted power. The project addresses challenges like aging infrastructure and space constraints through cost-benefit analyses and innovative engineering solutions. It serves as a model for modernizing legacy systems, balancing cost efficiency, sustainability, and operational resilience.

Tiffany Harrison, Project Manager at Gannett Fleming, brings over 17 years of experience leading water and wastewater infrastructure projects across North America. She has managed initiatives from Canada to California, focusing on pipelines, pump stations, and system reliability. Known for her client-focused approach, Tiffany combines technical expertise with efficiency to deliver compliant, sustainable solutions that support community growth.

Get that Pumping Station Out of the Way
Thursday 8/28/2025, 4:00:00 PM, Room 217

Primary Author: Lars Peterson, Senior Project Manager, KCI Technologies

PennDOT's Central Susquehanna Valley Transportation Project (CSVT) along U.S. Route 15 in Pennsylvania is creating a highway bypass between Lewisburg and Selinsgrove, Pennsylvania. As part of the CSVT, Aqua Pennsylvania (Aqua), a private water utility provider, involved KCI to review utility conflicts related to the CSVT in Shamokin, Pennsylvania, with a focus on an Aqua-owned water booster station that conflicts with the path of the new highway. KCI coordinated with PennDOT and other stakeholders to locate and design a new station on a constrained site, as well as with PennDOT and Aqua on cost sharing the relocation efforts.

Mr. Peterson is a licensed mechanical engineer with 25 years of engineering design experience in water and wastewater projects. Experience includes the detailed design of pumping stations, water treatment plants, wastewater treatment plants, rehabilitation of existing facilities and construction administration. He is currently a Senior Project Manager at KCI Technologies in their Sparks, MD office.

City of Elyria - Transmission Mains Condition Assessment
Thursday 8/28/2025, 4:30:00 PM, Room 217

Primary Author: Edward Carpenetti, Condition Assessment Lead, Black & Veatch

This presentation will focus on the condition assessment planning, technology selection, inspection, and inspection results used to develop the evaluation of The City of Elyria's aging water transmission main infrastructure. This includes the condition assessment of transmission main valves, large diameter cast iron pipe (CIP), and large diameter prestressed concrete cylinder pipe (PCCP).

As a Program Director with over 20 years of engineering experience, Edward has supported a variety of water and wastewater programs with the development of comprehensive Capital Improvement Plans (CIPs); and condition assessment, rehabilitation, and asset management plans. In addition to his professional work, Ed is very active in the industry and volunteers his time to support WEFs Collection System Committee and NASSCOs AM Committee. Additionally, Mr. Carpenetti is also a certified NASSCO PACP/LACP/MACP Trainer.

Collaborative Problem Solving between Owners and Contractor for a Win-Win outcome: The Allentown Water Main Replacement Project
Thursday 8/28/2025, 5:00:00 PM, Room 217

Primary Author: Immanuel John Samuel, Dr, Garney Construction

The Allentown Road Transmission Watermain Replacement project in Prince George's County, Maryland, focuses on enhancing local water infrastructure. It involves installing over 19,000 linear feet of ductile iron pipes, nine valve vaults, and additional systems. The project was managed by Garney Construction and faced challenges such as material shortages, design issues, and traffic control conflicts. Stakeholders worked together to find solutions, including redesigning the alignment to accommodate utility structures and adjusting the construction sequence. Extensive collaboration with local agencies ensured smooth progress, even with disruptions like a concrete duct bank. The project reflects effective teamwork and problem-solving.

Dr. Immanuel Samuel is a Project Engineer at Garney Construction and a technology enthusiast with a passion for BIM and AR applications in construction and asset management. Specializing in project management, scheduling, cost estimating, and planning, Dr. Samuel is currently working on significant projects such as the Allentown and Clinton Zone Watermain Replacement for WSSC. His expertise and dedication to integrating advanced technologies make him a valuable asset to the industry.

Biogas/RNG Project Lifecycle - From study to clean energy production
Friday 8/29/2025, 9:00:00 AM, Room 201

Primary Author: John Maley, Mid-Atlantic Digestion and Biogas Lead, HDR Inc.

The presentation will detail the typical lifecycle of a municipal RNG project from the facilities planning phase through post startup operation in order to inform those considering such a project. It will delve into the common key decisions that are made along the way as well as specific details about these types of projects. The lifecycle will be broken down into the following major phases:

1. Planning
2. Design
3. Construction
4. Operation

John Maley is HDR's Mid-Atlantic Digestion and Biogas practice lead. He has been with HDR for 10 years and working in the industry for 19. Starting as a process mechanical engineer in 2006, John dove right into wastewater treatment plant design. John's experience covers all corners inside the fence of treatment plant design and many different technologies for various treatment processes. While the early part of John's career was mostly filled with the design and construction of large plantwide ENR upgrade and expansions; the last 12 years have had an increasing focus on biosolids, particularly anaerobic digestion and biogas.

How DC Water's Workforce Development Program Drives their Lead Service Line Replacement Program
Friday 8/29/2025, 9:30:00 AM, Room 201

Primary Author: Rina Dalal, Environmental Engineer, CDM Smith

This session explores how DC Water is meeting both workforce development goals and lead service line replacement program goals by training and employing local residents to perform community outreach. In May 2023, DC Water and the Department of Employment Services (DOES), launched the Lead Free DC Activators Program. This one-year program provides classroom and on the job training in public education and outreach to local residents. The Activators have a significant role in the success of LFDC, as they utilize their local knowledge and training to educate homeowners about the benefits of lead service line replacement to secure participation. Homeowner acceptance and public support have increased significantly since implementation.

Rina Dalal has 15 years of experience in environmental engineering consulting and is skilled in communicating both technical and non-technical information to wide audiences. She has worked alongside utilities and municipalities in NJ and throughout the east coast to develop public education and participation programs for key water infrastructure improvement projects including lead service line replacement programs and long term control plans for combined sewer overflow projects.

Utilizing AI to Improve Continuity in Data Coding, Increase Project Turnaround Time, and Reduce Overall Project Costs.
Friday 8/29/2025, 10:15:00 AM, Room 201

Primary Author: Samantha Pierce, Account Manager, SewerAI

Our underground infrastructure is failing. Aging pipes face deterioration and corrosion, and then there are the added threats of roots, grease, crossboring, cracks, and sometimes, just being lost to time without having adequate record keeping.

Fortunately, the water infrastructure industry is entering an era of technological advances that will aid in our systems' inspection, mapping, predictive analysis, and rehabilitation planning. This session will take a deep dive into AI and automatic defect recognition, which is helping the industry stay on track for less time and money than using antiquated inspection software or traditional expensive camera hardware.

Hi! I am an Account Manager with SewerAI, having been in the industry since 2009, I started with a smaller civil engineering firm. I have a degree in Business Administration, and a passion for the wastewater industry. I am involved with NASSCO, WEF, NC OneWater, and stay active in the organizations' committee work. I stay current in my P/M/LACP certification through NASSCO, though the majority of my career was spent focused on manhole inspections and rehabilitation reports.

Will it work? Piloting new condition assessment technologies. A guideline for utilities
Friday 8/29/2025, 10:45:00 AM, Room 201

Primary Author: BRIAN BALL, Regional Manager, V&A Consulting Engineers, Inc

This presentation will detail the steps the City of St. Petersburg took to pilot a new condition assessment technology and provide a general methodology for utilities to follow.

Brian Ball is the Eastern Regional Manager for V&A Consulting Engineers, Inc. He is a veteran of the United States Marine Corps and a graduate of Temple University. He has over 20 years of experience in engineering and construction along with over 15 years of experience in asset management and condition assessment. Brian has performed condition assessment of 100's of miles of pressure pipe, developed condition assessment programs, and prior to joining V&A was the Chief of Asset Management for the City of Baltimore DPW.

Leveraging the Toolbox to Find Significant I/I
Friday 8/29/2025, 11:15:00 AM, Room 201

Primary Author: Jeffrey Griffiths, Manager of Infrastructure Assessment, RJN Group

After noticing a significant increase in average daily sewerage flows, a consultant analyzed flow meter data where it was clear that a significant source of I/I was increasing average flows from approximately 1 million gallons per day (MGD) to 4-5 MGD. Based on the abrupt increase in flow volume, a field crew was dispatched to walk the trunkline from the WRRF heading upstream looking for obvious signs of inflow. Simultaneously, a field inspection crew was deployed to quickly get “eyes” on the inside of the pipes, looking for major defects. Further analysis of the flow meter data, particularly the recorded temperature data, led to fine-tuned trunk walks to measure instantaneous temperatures in the sewer where the problem was found and fixed.

Jeff brings over 25 years of experience in engineering and client services in the water industry. He is the Manager of Infrastructure Assessment for RJN Group. Prior to joining RJN, Jeff held numerous senior leadership roles with RedZone Robotics and Hydromax USA. He is a former Chair of the Virginia WEA Collection Systems’ Committee and serves on several NASSCO and WEF committees today. He holds a BS in Mechanical Engineering from Virginia Tech and an MBA from The College of William and Mary.

Considerations for Structural lining of 36” and 54” reinforced concrete sewer pipes under Livingston Road
Friday 8/29/2025, 9:00:00 AM, Room 202

Primary Author: Haile Yerdaw, Manager, civil Engineering Support Section, WSSC

Prince George’s County department of transportation and public works was planning to replace an existing two-lane bridge over Livingstone creek in Southern part of the County. The project raises the approach embankments by about 8 ft over the existing WSSC 36” and 54” reinforced concrete sewer pipes. After discussions with the County on multiple methods to mitigate impacts to the pipes, WSSC opted to structurally strengthen the pipes prior to the start of the bridge construction. Carbon fiber reinforced polymer (CFRP) and Cured-in-place pipe (CIPP) were evaluated and CIPP was selected. This presentation discusses factors used in the evaluation of the linings, construction aspects and lessons learned.

Haile Yerdaw, P.E., PMP, is the Civil Engineering Section manager under the Engineering and Construction Department in WSSC. Haile has 23 years of experience in civil engineering design, construction and project management. In his capacity as a section manager, he oversees several programs including pipe forensics, corrosion management, dam inspection, Fiber Reinforced polymer rehabs for large diameter pipes, and inhouse design

Building Resilience and Adapting to Climate Change Impacts for Drinking Water and Wastewater Utilities
Friday 8/29/2025, 9:30:00 AM, Room 202

Primary Author: Audrey Ramming, Natural Resources Specialist, Environmental Protection Agency

EPA's Creating Resilient Water Utilities (CRWU) initiative provides drinking water, wastewater, and stormwater utilities across the country with the tools, training, and technical assistance needed to adapt to climate-related threats, such as extreme storm events, drought, flooding, and sea level rise. This presentation will dive into the free online tools available for understanding local climate trends and projections, assessing climate impact to utility assets, and identifying adaptation measures that can reduce monetized risk to the utility. Case study examples of local Maryland and Delaware utilities that participated in CRWU technical assistance to conduct climate risk assessments will also be included, along with funding strategies.

Audrey Ramming is a member of EPA's Creating Resilient Water Utilities initiative, which provides water utilities with the resources and technical assistance needed to adapt to, and prepare for, changing climate conditions. Audrey joined the EPA's Office of Water in April 2022.

Prior to the EPA, Audrey worked in the corporate governance sector as an ESG Analyst for Institutional Shareholder Services; and before that, as a Climate Research Journalist for the Potomac Conservancy and GlacierHub. Audrey holds a dual degree in Biology and Environmental Studies from Salisbury University and a Master's in Climate Science & Society from Columbia University in the City of New York.

Navigating the Waves of an Advanced Metering Infrastructure Upgrade in Howard County
Friday 8/29/2025, 10:15:00 AM, Room 202

Primary Author: Nirav Shah, Project Delivery Leader, RK&K

This presentation will provide an overview of Howard County's approach and lessons learned from their 15-year program to implement Advanced Metering Infrastructure (AMI) technology. This work presents a milestone update and lessons learned of the successes and challenges throughout the planning and management of Howard County's ongoing meter exchange and AMR to AMI transition.

Nirav Shah is a Project Delivery Leader with RK&K, with more than 20 years of experience in water design and engineering, condition assessment, asset management, program management, emergency response, distribution system quality, and regulatory compliance for small and large systems. Mr. Shah has bachelor's and master's degree in mechanical engineering, is a licensed Professional Engineer in Maryland, DC, Virginia, and Georgia, a certified Project Management Professional, and a certified Associate Water Asset Manager.

Aces in the Hole: The Benefits of Plant Operators on the Design Team for a Major WWTP Process Upgrade
Friday 8/29/2025, 10:45:00 AM, Room 202

Primary Author: Mark Mazzochette, Senior Principal Engineer, Hazen and Sawyer

An atypical and beneficial relationship between the designer and the owner for a major treatment plant upgrade is presented. Operations personnel from the company conducting the design (Hazen and Sawyer) have been on-site daily for several years assisting the Owner's (City of Baltimore) operations personnel and are significant contributors to the design effort. These are the "aces in the hole" which serve as a valuable and streamlined link between operators and designers. Such a relationship provides efficiency in design, generates a substantial degree of information for the design team, and communicates most effectively the design aspects that will lead to operational success.

Mark Mazzochette, PE, contributes to the planning, design, construction, and operations support of water and wastewater infrastructure improvements ranging from large, centralized, municipal clients to smaller, decentralized, private clients. With over 10 years in the industry, he has contributed to a variety of water and wastewater projects, including the design of upgrades to large municipal WWTP headworks, biological process, and solids handling facilities; complete decentralized water and wastewater treatment systems; and raw wastewater pumping stations.

Enhancing Operator Competency: Implementing and Sustaining Skill-Based Learning Programs in Water Utilities
Friday 8/29/2025, 11:15:00 AM, Room 202

Primary Author: Tara Jones, Division Manager, Learning and Development, WSSC

Discover how successful skill-based learning programs can drive operational excellence in water utilities. Learn how to design and sustain effective programs that boost operator skills, enhance regulatory compliance, and improve service quality. Gain insights into performance benchmarks and collaboration strategies to ensure continuous workforce development and long-term success.

Tara is the Division Manager of Learning

Data-Driven Insights: Using Performance Metrics to Drive Operational Efficiency in Wastewater Treatment
Friday 8/29/2025, 9:00:00 AM, Room 203/204

Primary Author: Paula Sanjines, Senior Technologist, Jacobs

Anne Arundel County, MD embarked in a study to benchmark the performance of their facilities to each other and also to other similar facilities in size, process configurations and effluent limits. More than a dozen WRRFs were compared, generating insights into operational efficiency and opportunities for optimization including new technologies that could be piloted. The benchmarking and piloting approach is a natural evolution for utilities in the Chesapeake Bay region that are considering both enhanced treatment and efficiency gains to lower operational costs. Utilities in the region will benefit from learning about optimization approaches and how plant data and KPIs are used to measure and track performance improvements.

Paula Sanjines is a senior technologist for Jacobs Engineering with over 25 years of experience in planning, design, construction and operation of wastewater treatment systems. She lives in Takoma Park Maryland and loves nature and the outdoors.

Developing a Framework for Demonstrating the Viability of Thermal Processing of Biosolids in Anne Arundel County
Friday 8/29/2025, 9:30:00 AM, Room 203/204

Primary Author: Thor Young, ,

Anne Arundel County is transitioning from its current biosolids management approach to a new Centralized Biosolids Facility. This facility will use thermal drying followed by either pyrolysis or gasification to manage biosolids more cost-effectively. The goal is to improve the sustainability and resilience of the County's biosolids management program. This presentation will provide an overview of the planned goals and outline the framework the County is developing to implement the new facility.

Thor Young is GHD's Wastewater Treatment and Recyling Lead. He has been with GHD for over 30 years and is based in their Bowie, MD office.

Strategic Solids Management: A 20-Year Roadmap for Sustainability and Resource Recovery
Friday 8/29/2025, 10:15:00 AM, Room 203/204

Primary Author: Rafael Iboleon, Process Engineer - EIT, Stantec

This presentation summarizes the Solids Master Plan Study (SMPS) at AlexRenew, which evaluated solids handling processes and developed a 20-year roadmap supporting sustainability, resource recovery, and operational excellence. The SMPS provided recommendations for short-, medium-, and long-term improvements, enabling AlexRenew to implement near-term repairs and advance medium-term projects aligned with strategic goals.

Rafael Iboleon, a Virginia Tech alumnus, joined Stantec as a civil engineer in 2022. He focuses on integrating innovative and established technologies to enhance water infrastructure solutions in drinking water and wastewater treatment design.

Evaluating the Future of Biosolids Composting: Market Trends, Challenges, and Strategic Insights from a Regional Case Study
Friday 8/29/2025, 10:45:00 AM, Room 203/204

Primary Author: Patrick Dube, Senior Technology Consultant, Isle Inc.

Composted biosolids are an attractive option for disposal as these nutrient-rich materials can provide many benefits to the environment, including helping to maintain healthy and productive soils and carbon sequestration, yet the practice faces growing scrutiny, prompting WRRFs to reassess their treatment and disposal strategies. This session will highlight the City of Baltimore's biosolids composting program and their recent market assessment which included two main thrusts: an overview of the composting biosolids market and an assessment of market drivers and regulations as they make plans for their program going forward.

Patrick Dube is a senior consultancy leader specializing in emerging technologies and innovative best practices in the water sector. Using his technical expertise, Patrick manages two Technology Approval Groups across the US, serves as the US market's technology scout, and works directly with utility partners on technical projects, including those related to PFAS. With almost ten years of experience in the industry, Patrick brings a strong technical background and an eye for innovation. He is passionate about driving the sector onward, upward and forward.

Decision Science Tools: Knowing When to Take the Road Less Traveled
Friday 8/29/2025, 11:15:00 AM, Room 203/204

Primary Author: Cory Johnson, East Region Drinking Water Lead, HDR, Inc

PFAS regulations are affecting activated carbon supply chains due to high demand from affected utilities compared with limited carbon supplies, creating demand-supply imbalances and pressure on carbon prices and availability. These challenges may impact the water industry's ability to meet PFAS regulatory schedules currently set for April 2029. Reverse osmosis membranes provide a viable option for PFAS treatment, providing as good or better removals in most cases, but the case for RO can at times be difficult to make. Advanced Costing and Decision Science Tools can provide nearly real-time Cost/Benefit analysis and improved outputs to the client and stakeholders so that the time to defensible treatment decisions can be improved.

Cory Johnson is a treatment process engineer and the East Region Drinking Water Lead with HDR currently located in Syracuse, NY. Cory began working in drinking water treatment since 1999 as part of his MS program at Colorado State University and has worked on treatment plant projects ranging from small community systems up to multi-billion dollar treatment plants in his time as a consultant.

Lessons to address PFAS and other emerging contaminants in source water
Friday 8/29/2025, 9:00:00 AM, Room 207/208

Primary Author: Priscilla To, Director, Operational Reliability and Resilience, WSSC Water

WSSC Water has adopted a multi-faceted approach to meet PFAS compliance. Tap monitoring reveals levels of PFOA and PFOS that are just below the compliance limits, pointing to the criticality of source water protection (SWP) to avert or reduce treatment costs. This presentation will highlight how WSSC Water has employed the elements of SWP to address PFAS in our watersheds, with a focus on building out a potential contaminant source inventory and enhancing watershed partnerships.

While PFAS is the current pollutant, all the groundwork to address PFAS in source water has multiplied benefits in the face of future regulations, climate change impacts, spill events, and the next emerging contaminant.

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Small Communities, Big Water Treatment
Friday 8/29/2025, 9:30:00 AM, Room 207/208

Primary Author: Kelsey Kenel, Project Manager, HDR

The purpose of this abstract is to present the efforts the Town of Hampstead, a small community, took to receive adequate funding for the centralization of 15 wells into four main WTPs with advanced treatment for PFAS removal. The presentation will discuss the project approach for receiving the funding necessary to remove PFAS in their community.

Kelsey is a project manager at HDR where she has worked for the past 8+ years. She primarily works on drinking water projects in Maryland and Virginia.

Comprehensive Bench-Scale Study on Multi-Contaminant Removal: Addressing PFAS, TOC, and Algal Toxins for Enhanced Water Quality
Friday 8/29/2025, 10:15:00 AM, Room 207/208

Primary Author: Naomi Souza, ,

This presentation highlights the multi-dimensional approach of bench-scale tests conducted to address various water quality concerns for WSSC Water, focusing on the co-treatment of PFAS, algal toxins, and organic matter removal to reduce the potential for disinfection byproduct formation.

Dr. Souza is an Environmental Engineer and Scientist with experience in water treatment and a focus in water chemistry, particularly with novel materials for PFAS removal and destruction. She serves as a subject matter expert in PFAS related projects and helps public and private sector clients identify and mitigate PFAS in water and wastewater.

Solving Forever Chemicals in Under Five Years: Aqua PA's PFAS Program
Friday 8/29/2025, 10:45:00 AM, Room 207/208

Primary Author: Jonathan Reuther, Senior Principal, Brown and Caldwell

The proposed federal PFAS rule will require mitigation of many surface water and sources throughout the state. Aqua PA recognized that a specialized approach would be needed to plan and execute a compliance strategy within a short timeframe. Rather than advancing individual projects, a group of stakeholders would need to be part of a comprehensive program that included an entirely new planning process.

This presentation outlines the overall approach of Aqua PA's PFAS program and how a diverse group of internal departments, consultants, vendors, and regulatory agencies is working together to deliver on this challenging but critical effort.

Jon Reuther is a consulting engineer at Brown and Caldwell with broad drinking water treatment experience including pilot testing, selection, and design of PFAS treatment and other groundwater and surface water treatment processes. Jon is a graduate of New Jersey Institute of Technology and is passionate about helping water utilities address the growing challenges associated with providing safe and reliable drinking water supplies.

Odor Management at Annapolis WRF: Responding to Community Concerns with Data-Driven Solutions
Friday 8/29/2025, 11:15:00 AM, Room 207/208

Primary Author: Mamatha Hopanna, Water/Wastewater Engineer, HDR

The Annapolis Water Reclamation Facility is addressing odor issues through proactive monitoring and evaluation strategies. Local neighborhoods have raised concerns about odors, with community members actively tracking issues using the Smell My City app. In response, continuous hydrogen sulfide monitoring was conducted onsite and offsite to identify problem areas and guide odor control improvements. This project combined monitoring data analysis, dispersion modeling, and evaluations of odor control technologies . Collaborative efforts included workshops and community meetings to share findings. Targeted ventilation upgrades and process improvements aim to mitigate odors, enhance environmental quality, and strengthen community relationships.

Mamatha is a process engineer specializing in rapid small-scale column testing, bench-scale, and pilot-scale testing for water quality enhancement, process optimization, and emerging contaminant removal, including PFAS and DBPs. She has collaborated with utilities to develop preliminary treatment strategies for PFAS, leveraging source water trend analysis, alternative treatment evaluations, and life cycle cost assessments.

A DC Water EnviroCure® Pilot Study for air quality monitoring and testing during CIPP installation in downtown D.C.
Friday 8/29/2025, 9:00:00 AM, Room 215

Primary Author: Burak Kaynak, Engineer III, DC Water

DC Water is exploring innovative solutions and has proposed an EnviroCure® pilot study at one of the sites, utilizing a styrene-based resin. EnviroCure®, a cutting-edge polymer coating developed by United Felts, is designed to significantly reduce styrene emissions and odors commonly associated with traditional CIPP liners, offering a cost-effective and high-quality alternative to styrene-free resin liners. A third-party contractor, engaged through the Water Research Foundation (WRF), will implement the Air Quality Monitoring Plan (AQMP) during the CIPP installation. This critical study will focus on worker and community safety, as well as the potential for air emissions, with a particular emphasis on Styrene.

Burak Kaynak is a licensed Civil Engineer/Project Manager at DC Water. He holds a Bachelor's and Master's degrees in Civil, Environmental, and Infrastructure Engineering from George Mason University. With over a decade of experience in the engineering sector, Burak has a strong background in the water and sewer industry within Washington D.C and Virginia. His expertise encompasses the planning, design, and management of a multitude of water and sewer projects.

DC Water at Work: Effective Management of Century-Old Collection System
Friday 8/29/2025, 9:30:00 AM, Room 215

Primary Author: STEVE BIAN, Supervisor of Civil and Structural Design, DC Water

This presentation highlights the unique challenges associated with a century-old collection system in a swampy city like Washington, DC. It focuses on the characteristics of masonry trunk lines, showcasing their distinct strengths and weaknesses. Presented from the owner's perspective, it reflects on two decades of evaluating and mitigating issues within the collection system.

Mr. Steve Bian plays a role of integrity manager as the supervisor of civil and structural design in DCWATER. Engineering. His duty in DCWATER covers full spectrum of responsibilities related to planning, design, construction, and emergency response for both vertical and linear assets. So far he spent 20 years of his 39 year professional career in DC Water since 2005.

Howard County's Integrated Strategies for Protecting Linear Infrastructure in Environmentally Sensitive Areas
Friday 8/29/2025, 10:15:00 AM, Room 215

Primary Author: Jess Weron, ,

Howard County's linear infrastructure protection in environmentally sensitive areas demonstrates a robust and collaborative approach to managing critical infrastructure in areas such as streams and wetlands. This program exemplifies coordinated efforts among multiple County bureaus, state agencies, and private organizations to protect linear infrastructure while preserving the environment.

Jess is a professional with extensive experience in the design, analysis, and engineering of water and wastewater (W/WW) infrastructure. They specialize in leading evaluations and collaborating with design teams to develop economical and responsive pipeline routing and design solutions. Jess' expertise includes planning and designing W/WW pipelines, pumping stations, and treatment facilities. Their portfolio spans water and sewer pipeline replacements, rehabilitations, repairs, protection, and new designs for pipelines ranging from 4 to 60 inches in diameter, as well as routing and alignment analyses, and service connections. Jess is skilled in preparing plans, specifications, cost estimates, and permit applications, with additional expertise in civil/site utility design, stormwater management, and erosion and sediment control.

Lessons Learned from the Rehabilitation of a Large Diameter Storm Pipe
Friday 8/29/2025, 10:45:00 AM, Room 215

Primary Author: Moubin Al-Malla, Project Manager, AECOM

The City of Alexandria is required to rehabilitate a large diameter storm pipe to stop the intrusion of a petroleum product into the Potomac River. AECOM was tasked with the design and construction management of this project. There were many lessons learned during the design and construction management of this project which may benefit both owners and engineers.

Moubin Al-Malla is a project manager at AECOM. With over 17 years of experience in the water industry, Moubin has managed a variety of projects across water, wastewater and stormwater ranging from design to construction. Moubin's experience is mostly in Georgia before moving to the Baltimore area 4 years ago.

The Bigger Picture: How Utilities Can Technology and Innovation Landscape Insights To Meet Day to Day Challenges
Friday 8/29/2025, 11:15:00 AM, Room 215

Primary Author: Patrick Dube, Senior Technology Consultant, Isle Inc.

Many utilities across the US are dealing with the same issues as they strive to maintain high standards for their customers and continue to meet the challenges that come with an ever evolving landscape. Day to day there often isn't enough time to take a look at the big picture of the sector and take away learnings and trends that can be implemented. This session will provide an overview of which areas utilities are prioritizing innovation and research and the areas where there is an uptake of novel solutions. There will also be a spotlight on vendors that are providing solutions for localized Chesapeake based problems that save time, money, and improve business as usual.

Patrick Dube is a senior consultancy leader specializing in emerging technologies and innovative best practices in the water sector. Using his technical expertise, Patrick manages two Technology Approval Groups across the US, serves as the US market's technology scout, and works directly with utility partners on technical projects, including those related to PFAS. With almost ten years of experience in the industry, Patrick brings a strong technical background and an eye for innovation. He is passionate about driving the sector onward, upward and forward.

Once upon a pelletizer: the holistic tale of optimizing a contract-operated biosolids drying facility
Friday 8/29/2025, 9:00:00 AM, Room 217

Primary Author: Betsy Baldwin, Engineering Manager, Black & Veatch

This paper will explain the process and progress of the City, Engineer, and facility operator to evaluate and optimize the pelletizer facility operations and provide recommendations for facility improvements.

Betsy has led plant design upgrades, developed recommendations for consent decrees, provided construction phase services, process startup and O

Combining thermal hydrolysis with advanced thermal conversion processes for micro-contaminant destruction
Friday 8/29/2025, 9:30:00 AM, Room 217

Primary Author: Bill Barber, Technical Director, Cambi, Inc.

There is growing concern related to microcontaminants in wastewater treatment. This concern has expanded to include the use of biosolids to land as an alternative to fossil-fuel derived fertilizer. Subsequently, there has been a growth in interest related to the use of thermal based systems such as pyrolysis and gasification. However, these technologies rely on dried inputs and are therefore very energy intensive. Thermal hydrolysis, a popular pre-treatment to anaerobic digestion and installed at WSSC's facility in Piscataway, is known to improve biosolids management especially dewatering. This paper looks at how it can be combined with energy intensive processes to reduce their energy demand and improve their viability.

Dr Bill Barber is a professional engineer with PhD and degree in Chemical Engineering. Bill has worked in consulting for multi-national companies, technical development and sales, and for the UK's largest Water Company, United Utilities. He has worked on projects in the UK, Europe, Asia, Australia, New Zealand and North America. Bill has written the IWA textbook on thermal hydrolysis as well as numerous peer-reviewed articles.

Integrating WARN in RRAs & ERPs
Friday 8/29/2025, 10:15:00 AM, Room 217

Primary Author: Karen Edwards-Lindsey, Enviromental Protection Specialist, U.S. Environmental Protection Agency

In this session, EPA will discuss AWIA Section 2013 / SDWA Section 1433 requirements and deadlines, and then provide examples of how utilities can utilize local mutual aid networks such as WARNs and incorporate these networks into their RRAs and ERPs

Karen Edwards-Lindsey is an Environmental Protection Specialist who joined the U.S. Environmental Protection Agency in 1997. She currently works in the Water Infrastructure and Cyber Resilience Division as the project lead on multimedia outreach to the Water Sector and key stakeholders. She also works on other projects to raise the awareness among other critical sectors, at local and state levels about the importance of water and its role as a lifeline sector. She has a Bachelor of Science from Maryland University.??

Direct comparison between thermal hydrolysis and thermophilic digestion as alternatives for Class A biosolids management
Friday 8/29/2025, 10:45:00 AM, Room 217

Primary Author: Bill Barber, Technical Director, Cambi, Inc.

Whilst thermophilic digestion and digestion preceded by thermal hydrolysis are both viable alternative processes to provide Class A enhanced treated biosolids, there have been no studies directly comparing both technologies with respect to performance of downstream anaerobic digestion. This paper looks at a laboratory study which compares both alternatives with respect to the digestion of both, conventional activated sludge, and also sequencing batch reactor (SBR) sludge. As well as digestion performance, shown by biogas production, other data is collected based on pathogenic marker organisms.

Dr Bill Barber is a professional engineer with PhD and degree in Chemical Engineering. Bill has worked in consulting for multi-national companies, technical development and sales, and for the UK's largest Water Company, United Utilities. He has worked on projects in the UK, Europe, Asia, Australia, New Zealand and North America. Bill has written the IWA textbook on thermal hydrolysis as well as numerous peer-reviewed articles.

Biosolids Management Planning – Evaluating Technologies for the Long-Term
Friday 8/29/2025, 11:15:00 AM, Room 217

Primary Author: Jody Barksdale, Senior Client Services Manager, Carollo Engineers, Inc.

This presentation will describe the complexities of planning for long-term biosolids management in an uncertain regulatory climate. Attendees will also learn how multi-criteria decision analyses can be used to help evaluate and select treatment technologies.

Jody has more than 37 years of experience in the planning and design of water, wastewater, and biosolids management facilities, as well as pumping station and collection system projects. He is a registered professional engineer in 5 states and holds a bachelor's in environmental engineering from the University of Florida and a master's in engineering from the University of Central Florida. Jody focuses on wastewater infrastructure projects and biosolids management strategies.