



ERIE COUNTY WATER AUTHORITY

INTEROFFICE MEMORANDUM

DATE: April 4, 2025

TO: Terrence D. McCracken, Secretary to the Authority

FROM: Sabrina A. Figler, Director of Water Quality

SUBJECT: Travel of Clayton Rumsey, Ph.D., Analytical Chemist, to AWWA ACE 2025
Denver, Colorado

In June 2025, AWWA will be holding its Annual ACE Conference in Denver, Colorado. I'd like to send Clayton Rumsey, Ph.D., Analytical Chemist, as I feel this is an excellent opportunity for him to learn more about the industry in addition to the technical and scientific facets of water treatment and distribution. Clay is also active with the AWWA Young Professionals council, and this conference provides him with a great opportunity to continue to network.

The theme for this year's conference is "Water Solutions, Our Journey to Ensure Clean and Safe Water". AWWA's Annual Conference and Exposition (ACE) is the essential gathering for the water community. The conference provides heightened awareness, elevated standards, and innovative solutions that fuel safe and clean water. Attendees have the opportunity to see advanced technologies in the industry and gain new insights into our industry. The program is attached.

Thank you for your consideration and support.

BUDGET INFORMATION:

UNIT 1030: WATER QUALITY

LINE: 401000 640212 Travel

Remaining balance: \$10,400

UNIT 1030: WATER QUALITY

LINE: 401000 640237 Training

Remaining balance: \$4550

**ERIE COUNTY WATER AUTHORITY
AUTHORIZATION FORM
For Approval/Execution of Board Meeting Documents**

Document Name: _____ **Project No.:** _____

Description: _____

Item Description:

Choose one:

Other: _____

Action Requested:

Choose one:

Other: _____

Approvals Required:

APPROVED AS TO CONTENT:

Chief Financial Officer _____ Date: _____

Chief Operating Officer _____ Date: 04/04/2025

Claims Rep. – Risk Manager _____ Date: _____

Comptroller _____ Date: _____

Director of Administration _____ Date: _____

Director of Distribution _____ Date: _____

Director of Human Resources _____ Date: _____

Director of IT _____ Date: _____

Director of Production _____ Date: _____

Director of Water Quality _____ Date: _____

Executive Engineer _____ Date: _____

General Counsel (Legal) _____ Date: _____

Other: _____ Date: _____

APPROVED FOR BOARD RESOLUTION:

Secretary to the Authority _____ Date: 04/07/2025

Remarks: _____

Resolution Date: _____ **Item No:** _____

TRAINING REQUEST

Date: 3/25/2025

Employee Name	Job Title	Department
Clayton Rumsey	Analytical Chemist	Water Quality

Dates of Training

From: June 8, 2025 To: June 12, 2025 Total number of business days: 4

Training requests which require overnight accommodations must be accompanied by a Travel Request form.

Training Information

Title of Course(s) AWWA ACE 2025

Description the AWWA Ace focuses on water utility management, operational challenges, treatment regulatory compliacne and aging infrastructure

Is this course needed to meet continuing education or contact hour requirements? No
How many credit hours will you receive?
How many credits (per year) required for your license?
How many credits do you have year-to-date?
Are there 2 or more people attending this seminar? no
Are there concurrent sessions? yes
Why is there a need for 2 or more people to attend this seminar?

Estimated Cost

Registration Fee \$ 1000 Mileage & Tolls \$ 650

TOTAL ESTIMATED COST \$ 3350

Balance in the training budget prior to this trip \$ 4550

Unit Number 1030 Primary Number 401000 G/L Number 640237

Approvals

Department Head [Signature] Date 4/4/2025

Chief Operating Officer [Signature] Date 04/04/2025

Secretary [Signature] Date 04/04/2025

TRAVEL REQUEST

Date: 3/25/2025

Employee Name	Job Title	Department
Clayton Rumsey	Analytical Chemist	Water Quality

Destination: AWWA ACE, DENVER COLORODA

Is this training needed to meet professional licensing requirements? no

Description of training or business, and reasons and benefits of attendance: The ACE conference is a great place to get high quality technical and leader training. The ACE Conference focuses on water utility management, treatment and operations challenges, regulatory compliance, aging infrastructure replacement and cultivating an

informed work force

Dates of Travel

From: June 8, 2025 To: June 12, 2025 Total number of business days: 4

Estimated Cost

Transportation \$ 650 Hotel Accommodations \$ 1200 Meals \$ 500


TOTAL ESTIMATED COST \$ 2350 W/ REGISTRATION FEE \$ 3350

Balance in the training budget prior to this trip \$ 10,400


Unit Number 1030 Primary Number 401000 G/L Number 640212

Comments (i.e. spouse traveling, preferences): _____

Approvals

Department Head  Date 4/4/2025

Chief Operating Officer  Date 04/04/2025

Secretary  Date 04/04/2025

Track

- A Focus on PFAS
- Advances in Water Treatment
- Capital Improvement Projects: Design, Construction, and Delivery
- Distribution System Operation and Management
- Infrastructure Management
- Intelligent Water
- Legal, Financial, and Management
- Plenary Sessions
- Poster Session
- Pre-Conference Workshop
- Public Officials Training
- Regulatory & Legislative Actions
- Research
- Reuse
- The Future of Water | Roundtable Sessions
- The Latest on Lead And Copper
- Utility Risk and Resilience
- Water Education and Workforce
- Water Quality Challenges
- Water Resources Planning, Protection & Management
- Water Use Efficiency Practices
- Water Utility Management
- Water in the West

Sunday, June 8, 2025

PCW00 - Hands-On Workshop - Water Distribution Hydraulic Testing

Moderator(s):

Event Type: Educational Sessions

Event Track: Pre-Conference Workshop

08:00 AM - 12:00 PM MDT | Sun | Room 401 - 402

OVERVIEW: Pre-Conference Workshops are an additional cost and require pre-registration.

This Hands-On workshop is intended for water distribution system professionals - operators, engineers, planners and modelers - anyone who needs to collect hydraulic data from a distribution system. We will review data collection procedures such as where best to collect data, types of data collection, test and safety procedures, including a live hydrant flow test and hands-on with field data collection equipment.

PRESENTATIONS:

PCW04 - Filter Surveillance

Moderator(s): [Enoch Nicholson](#)

Event Type: Educational Sessions

Event Track: Pre-Conference Workshop

08:00 AM - 04:45 PM MDT | Sun | Offsite

OVERVIEW: Pre-Conference Workshops are an additional cost and require pre-registration.

This workshop will be off-site at Denver Water Marston Water Treatment Plant

Granular media filters are the final physical barrier to pathogens in water treatment. Filters must perform optimally under all conditions to assure public safety. Attendees will be taught the filtration process and operational considerations. The workshop focuses on how to conduct a filter surveillance program to determine filter performance over time, as well as analyzing ways to optimize treatment efficiency and treated water quality.

PRESENTATIONS:

PCW08 - Partnership for Safe Water Principles & Live Demonstration







Moderator(s): [Angie Brown](#)

Event Type: Educational Sessions

Event Track: Pre-Conference Workshop

08:00 AM - 04:45 PM MDT | Sun | Offsite

Event Type

-  Diversity
-  Educational Sessions
-  Focused Insights
-  General Info
-  International
-  Special Events

OVERVIEW: Pre-Conference Workshops are an additional cost and require pre-registration.

This workshop will be off-site at the Aurora Water Binney Water Treatment Plant

This full-day workshop covers the principles of the Partnership for Safe Water, focusing on strategies for operational excellence. The morning session will provide theoretical knowledge, while the afternoon includes a tour of the Aurora Water Binney WTP to see these principles in action. Attendees will learn to implement PSW principles in daily operations and define steps to achieve operational excellence.

PRESENTATIONS:

PCW01 - Public Utility: Your Toolkit for Best Practices & Industry Standards for Implementing a Capital Improvements Plan & Delivering Projects

Moderator(s): [Aliza Caraballo](#)

Event Type: Educational Sessions

Event Track: Pre-Conference Workshop

09:00 AM - 04:00 PM MDT | Sun | Mile High Ballroom 1ab

OVERVIEW: Pre-Conference Workshops are an additional cost and require pre-registration.

This workshop is an opportunity for both new and seasoned professionals to join owners and practitioners in the same room to discuss the implementation and management of a Capital Improvement Plan in the public water utility sector. The concept of the workshop is a drive-through the life cycle of a project, from validation and prioritization to Procurement methods and resources available to select the best delivery method for the project in-hand. Panelist and presenters will also share experiences and tools utilized by different experts that have guided them through successful completion and commissioning of their projects.

PRESENTATIONS:

PCW02 - Connecting the Dots: Extending the Useful Life of Large Diameter Water Mains Through Innovative Condition Assessment & Rehabilitation

Moderator(s): [Scott Jauch](#)

Event Type: Educational Sessions

Event Track: Pre-Conference Workshop

09:00 AM - 04:00 PM MDT | Sun | Mile High Ballroom 1cd

OVERVIEW: Pre-Conference Workshops are an additional cost and require pre-registration.

The Condition assessment and rehabilitation industry is continuing to advance with new technologies and approaches. This workshop will walk the audience through common water materials and failure modes, available technologies for collecting condition information, and available rehabilitation methods. Case studies by industry leading utilities will be shared to condition assessment projects that led to rehabilitation for multiple water main materials.

PRESENTATIONS:

PCW03 - Key Enablers for Effective Asset Management Programs: Technology and People

Moderator(s): [Celine Hyer](#)

Event Type: Educational Sessions

Event Track: Pre-Conference Workshop

09:00 AM - 04:30 PM MDT | Sun | Mile High Ballroom 2ab

OVERVIEW: Pre-Conference Workshops are an additional cost and require pre-registration.

Successful implementation of Asset Management Programs typically includes answering the five core questions about asset inventory, service levels, risk mitigation and funding needs. However, there are key enablers required for program success including leveraging technology and having people that are supportive of the program and accept changing the way business is done. This workshop will delve into effective technology applications and change management strategies.

PRESENTATIONS:

PCW05 - Scenario Planning for Lead Service Line Replacement Programs

Moderator(s): [William Elledge](#)

Event Type: Educational Sessions

Event Track: Pre-Conference Workshop

09:00 AM - 04:30 PM MDT | Sun | Mile High Ballroom 4ab

OVERVIEW: **Pre-Conference Workshops are an additional cost and require pre-registration.**

A successful lead service line (LSL) replacement program prepares for different scenarios despite a high level of uncertainty in funding, regulations, the number of LSLs, the participation by the public and the cooperation of other city departments. This workshop will incorporate scenario planning and other planning tools to open interactions among participants, identify problems and issues, and perform creative brainstorming of ideas and solutions.

PRESENTATIONS:

PCW06 - Extending the Lives of Old Water Mains--Using Proven, Cost-Effective Methods

Moderator(s): [Dan Ellison](#)

Event Type: Educational Sessions

Event Track: Pre-Conference Workshop

09:00 AM - 04:30 PM MDT | Sun | Mile High Ballroom 4cd

OVERVIEW: **Pre-Conference Workshops are an additional cost and require pre-registration.**

This workshop focuses on the practical applications of water main rehabilitation and is geared to utility managers and engineers at all levels of experience (novice to expert). Participants will gain the tools needed to start or strength a program that accomplishes more infrastructure renewal for fewer dollars, and with minimal public impacts. Includes case studies of large and small programs.

PRESENTATIONS:

PCW07 - Operationalizing Data-driven Decision Support – Data Management, Analytics, and AI/ML

Moderator(s): [Yoko Koyama](#)

Event Type: Educational Sessions

Event Track: Pre-Conference Workshop

09:00 AM - 04:00 PM MDT | Sun | Mile High Ballroom 3ab

OVERVIEW: **Pre-Conference Workshops are an additional cost and require pre-registration.**

Many utilities are just beginning their digital transformation journey, and data management is the key first step. This workshop introduces strategies for data management, leveraging cloud services as well as on-premise tools, and consequently operationalize advanced analytics such as AI/ML with data-driven modeling.

PRESENTATIONS:

CRT1 - Introduction to Water and Sewer Operating Environments

Moderator(s):

Event Type: Educational Sessions

Event Track: Public Officials Training

01:00 PM - 05:00 PM MDT | Sun | Room 303

OVERVIEW: **Public Officials Course are an additional cost.**

This course is optional and offered at an additional cost for public officials only. You must be registered for the conference to purchase courses.

Officials completing this course will acquire a basic understanding of the regulatory environment and water supply concerns surrounding public water systems. The course will discuss the regulatory environment that utilities operate in and why, the rule making process and permitting agencies.

PRESENTATIONS:

PCW09 - From Technical to Relatable: Crafting Clear Messages on Lead and PFAS

Moderator(s): [Alice Fulmer](#)

Event Type: Educational Sessions

Event Track: Pre-Conference Workshop

01:00 PM - 05:00 PM MDT | Sun | Room 401 - 402

OVERVIEW: **Pre-Conference Workshops are an additional cost and require pre-registration.**

The water sector is dealing with significant new regulatory demands relating to lead and PFAS. Utilities are currently navigating the economic and technical difficulties involved in completing Lead Service Line Replacement and implementing appropriate treatment for PFAS. This hands-on workshop focuses on bridging the gap between complex water quality issues related to lead, PFAS and public understanding to improve public outreach and customer engagement strategies.

PRESENTATIONS:

Monday, June 9, 2025

OGS - Opening General Session

Moderator(s): [David LaFrance](#)

Event Type: Educational Sessions

Event Track: Plenary Sessions

09:00 AM - 10:00 AM MDT | Mon | Bluebird Ballroom

OVERVIEW: Opening General Session on Monday, June 9 will begin an impactful conference, highlighting award recipients, remarks from AWWA, and a topical keynote speaker. More details to follow soon.

PRESENTATIONS:

AEESP - Association of Environmental Engineering & Science Professionals Lecture

Moderator(s):

Event Type: Educational Sessions

Event Track: Plenary Sessions

OVERVIEW:

PRESENTATIONS:

CRT2 - Water and Sewer Infrastructure Operations, and Maintenance

Moderator(s):

Event Type: Educational Sessions

Event Track: Public Officials Training

01:00 PM - 05:00 PM MDT | Mon | Room 303

OVERVIEW: **Public Officials Course are an additional cost.**

This course explores the mission and inner workings of water treatment and piping assets, with a focus on the management of these assets to protect public health and reduce outage risk, including maintenance requirements and utility expenditures.

PRESENTATIONS:

MChat - Fireside Chat with EPA

Moderator(s): [David LaFrance](#)

Event Type: Educational Sessions

Event Track: Plenary Sessions

01:00 PM - 01:45 PM MDT | Mon | Four Seasons Ballroom 2-3

OVERVIEW: With an interactive audience discussion moderated by AWWA's CEO, David LaFrance, the Fireside Chat with EPA will cover EPA's perspective a variety of relevant topics in the water sector. You will not want to miss this opportunity for discourse with key EPA regulators and the chance to have your questions addressed.

PRESENTATIONS:

MON000 - Monday Keynote - A.P. Black

Moderator(s): [Kate Nutting](#)

Event Type: Educational Sessions

Event Track: Plenary Sessions

01:00 PM - 02:30 PM MDT | Mon | Mile High Ballroom 4ab

OVERVIEW: This year's winner of the A.P. Black Research Award is Dr. Karl G. Linden. The A.P. Black Award was established in 1967 in honor of Dr. A.P. Black to recognize an individual who has made outstanding research contributions to water science and water supply practices over their career.

PRESENTATIONS:

01:00 PM MDT

Water Treatment at the Speed of UV Light

This talk will track the emergence of UV-based treatment in the water sector from disinfection of *Cryptosporidium* in drinking water to destruction of emerging contaminants in potable water reuse, emphasizing the importance of UV wavelength and the promise of emerging UV sources. Utilization of UV both within centralized treatment facilities and out of the treatment plant in distributed applications, will be discussed, reflecting on Linden's years of research leadership in the sector.

MON001 - Inorganic Contaminants: Prevalence and Treatment

Moderator(s): Nicole Blute

Event Type: Educational Sessions

Event Track: Advances in Water Treatment

02:00 PM - 05:00 PM MDT | Mon | Room 401 - 402

OVERVIEW: This session discusses various strategies for monitoring and managing manganese in water treatment. The prevalence of lithium and potential lithium treatment strategies is covered. The session will highlight innovative approaches for inorganics removal including case studies.

PRESENTATIONS:

02:00 PM MDT

Is Lithium the next NPDR? Don't Worry, Be Happy! There Are Treatment Options!

In 2021, a USGS and USEPA collaboration reported that lithium is a frequently observed contaminant in groundwater supplies. Continuing efforts, such as UCMR5, have produced occurrence information showing it is found in drinking water at levels that may be relevant to human health. The 2021 USGS study found lithium in public supply wells up to 400 µg/L. UCMR5 data to date confirms the wide occurrence of lithium in drinking water sources with more than 80% of reported samples over the HBSL of 10 ug/L. Utilities will need reliable treatment technologies to meet potential regulatory decisions for lithium. This paper will highlight the available and ongoing studies on treatment and waste stream management.

Speaker(s): Christine Owen, Hazen and Sawyer

02:30 PM MDT

More Tools in the Toolbox: Manganese Control Strategies at Houston's New 320 MGD Water Treatment Plant

The presentation will focus on treatment strategies such as biological filtration, chlorine dioxide, and ozone to control manganese naturally present in the source water, as well as in the recycle streams at the water treatment plant.

Speaker(s): Greg Pope

03:00 PM MDT

Always Room for Innovation - Optimizing Iron and Manganese Removal at An Existing 1.4 MGD WTP with Challenging Groundwater Quality

Iron and manganese are common constituents that can be successfully removed from groundwater, but challenging water qualities may significantly disrupt its treatment performance. The Schomberg WTP is a 1.4 MGD (5.4 ML/d) groundwater treatment facility faced with elevated levels of iron, manganese, methane, ammonia, and organics. This project examined alternative treatment technologies followed by a one-year pilot study including the testing of catalytic media. The pilot was optimized to achieve simultaneous removal of iron and manganese and explored innovative operational modes to extend filter media service life. This presentation will provide details on the technology evaluation, pilot results, and proposed plant upgrades.

Speaker(s): Chris Jiang, AECOM

03:30 PM MDT

Innovative In-Line Aeration System for Iron Removal in Drinking Water Treatment

This presentation introduces an innovative in-line aeration system that has been successfully implemented at water treatment facilities to oxidize iron prior to multimedia filtration, as an alternative to traditional draft aerators. The system consists of a sidestream injection skid and a pipeline flash reactor (PFR). The skid uses a booster pump and venturi injector to draw in atmospheric air, which is then mixed into the mainline flow through the PFR's high-velocity nozzles. The system can be installed indoors at ground level or in the basement, eliminating the need for rooftop equipment and reducing installation costs. Pre-filter aeration not only reduces chemical costs, but also helps prevent disinfection byproduct formation.

Speaker(s): Mike Spillner, Mazzei Injector Company, LLC

04:00 PM MDT

Two birds, One stone: Solving a Manganese & Arsenic Treatment Challenge in Lincoln, NE

Lincoln Water System's (LWS) Ashland Water Treatment Facility has observed increasing concentrations of arsenic and manganese in their groundwater supplied from the Platte River Aquifer. LWS has established aggressive yet achievable finished water treatment goals of 4.5 ppb arsenic and 10 ppb manganese, which require implementation of new treatment facilities. From 2022 to 2024, LWS undertook an extensive evaluation of oxidation, coagulation, and filtration to effectively address arsenic and manganese. This presentation will provide a comprehensive review of bench and pilot-scale evaluations and techniques used to evaluate effectiveness of alternative coagulants and polymers on As/Mn removal, impacts to filter productivity, recommendations

Coagulants and polymers on As(III) removal, impacts to filter productivity, recommendations
Speaker(s): Ashton Rohrich

04:30 PM MDT

Online Monitoring Practices for Better Manganese Control in Drinking Water Production

Seasonal manganese fluctuations in surface source water cause various treatment challenges. There are many manganese mitigation techniques including pre-oxidation practices. Timely pre-oxidation coupled with continuous dissolved oxygen monitoring was implemented at two surface water plants and helped to predict manganese spikes, allowing to optimize their treatment processes. The documented case studies demonstrate the effectiveness of this approach to ensure timely interventions mitigating adverse effects of high manganese levels in the source water.

Speaker(s): Vadim Malkov, Hach

MON003 - Nationwide assessment of DBPs and OPs: Research Results from a USEPA National Priorities Grant project

Moderator(s): Zaid Chowdhury, Carly Gomez

Event Type: Educational Sessions

Event Track: Research

02:00 PM - 05:00 PM MDT | Mon | Room 405

OVERVIEW: This session shares findings from an EPA National Priorities grant research program on the study of OPs and DBPs. Occurrence of these contaminants at participating utilities across 9 of the 10 EPA regions as well as the trends emerging from the first year of the study and model results will be presented.

PRESENTATIONS:

02:00 PM MDT

Prevalence and Spatial Distribution of Opportunistic Pathogens in Full-Scale Municipal Drinking Water Distribution Systems

This talk summarizes OP (*Legionella* and *P. aeruginosa*) occurrence based on 2024 sampling of 25 U.S. water utilities, and trends related to system characteristics and treatment processes.

Speaker(s): Tiong Gim Aw, Tulane University

02:30 PM MDT

Regulated and Unregulated DBPs in US Distribution Systems: Nationwide Occurrence, Treatment, and Cytotoxicity

This study investigates the occurrence, treatment efficacy, and cytotoxicity of DBPs in U.S. water systems. It will provide critical insights for EPA Stage 3 DBPR development and help utilities optimize disinfection while reducing DBP-related risks.

Speaker(s): Peng Dai, Clemson University

03:00 PM MDT

Epidemiology of distribution systems: The correlation between water treatment variables and legionellosis cases

This talk will explore the relationship between water treatment characteristics, such as disinfectant type, geographic locations, and size in their relationship to legionellosis cases.

Speaker(s): Martin Zartarian, New York State Department of Health

03:30 PM MDT

Epidemiology of distribution systems: The correlation between water treatment variables and legionellosis cases

This talk will explore the relationship between water treatment characteristics, such as disinfectant type, geographic locations, and size in their relationship to legionellosis cases.

Speaker(s): Alexis Mraz, The College of New Jersey

04:00 PM MDT

Exploring relationships driving OP and DBP presence in drinking water

Utility partner data will be analyzed using modeling techniques such as correlation, regression, and principal component analysis, to identify relationships between physiochemical parameters, OP presence, and DBP formation.

Speaker(s): Emily Julien, Michigan State University

04:30 PM MDT

Progress towards a drinking water risk trade-off assessment: Disinfection byproducts vs. opportunistic pathogens

Join us to discuss milestone achievements for a risk trade-off assessment comparing disinfection byproducts and opportunistic pathogens in drinking water. Highlights include DBP dose-response modeling and sampling-based DBP/OP exposure assessments.

Speaker(s): [Carly Gomez](#), *Michigan State University*

MON004 - Water Research Foundation (WRF): Research on Wildfire

Moderator(s): [Jessica Metcalf](#)

Event Type: Educational Sessions

Event Track: Research

02:00 PM - 03:30 PM MDT | Mon | Room 403 - 404

OVERVIEW: Driven by a variety of factors, wildfires have increasingly impacted human societies over recent years. The wildfire frequency, scale, and severity are being intensified. The Water Research Foundation has funded a number of research on past fires to study wildfire impacts on water systems, investigate actions taken during and after the fires, and help utilities in their efforts to recover from fire damage and prepare for future fires. This session provides outcomes from the three latest WRF projects on wildfire.

PRESENTATIONS:

02:00 PM MDT

[Post-Wildfire Distribution System Water Quality Impacts and Potential Responses](#)

Speaker(s): [Andrew Whelton](#)

02:30 PM MDT

[Water Utility Resilience: A Case Study of the 2021 Marshall Fire](#)

Speaker(s): [Brad Wham](#)

03:00 PM MDT

[In the Face of Fire: Solutions to Understanding and Preventing Infrastructure Damage](#)

Speaker(s): [Andrew Whelton](#)

MON006 - Advances in Asset Management Processes

Moderator(s): [Celine Hyer](#)

Event Type: Educational Sessions, Focused Insights

Event Track: Water Utility Management

02:00 PM - 03:30 PM MDT | Mon | Room 406

OVERVIEW: Utilities continue to advance their processes in evaluating likelihood of failure, consequence of failure, evaluating risk, and making risk based decisions on water system capital projects. This session will present successful utility case studies and share important lessons learned.

PRESENTATIONS:

02:05 PM MDT

[Developing a GIS Web App for Selection of Small Diameter Water Main Replacement Locations](#)

Pittsburgh Water and Sewer Authority (PWSA) has issues with aging infrastructure and began a Small Diameter Water Main Replacement (SDWMR) program in 2018 to specifically address issues with its water distribution network. The program has grown to represent the replacement of an annual average of 10-12 miles of mains and will take in excess of 50 years to address existing problems. PWSA has experimented with various methods for prioritizing mains for replacement and developed an increasingly sophisticated in-house GIS web app to address the challenge of optimizing the selection process.

Speaker(s): [Brent Lahaie](#), *Pittsburgh Water and Sewer Authority*

02:25 PM MDT

[ECWA's Deep Understanding of the Hydraulic Impacts of Watermain Breaks on Customers Leads to More Cost-Effective Replacements](#)

Customers Leads to More Cost-Effective Replacements

Advancements in AI-powered watermain break prediction tools have led to highly accurate estimates of the probability of failure (POF) of pipes. But optimizing the prioritization of pipe replacements and the determination of appropriate expenditure levels requires consequences of failure (COF) estimates to be equally well estimated. To best estimate pipe risks, maximize the cost-effectiveness of its replacement program, and improve water service reliability, Erie County Water Authority (ECWA) coupled its updated POF values with advanced COF estimates. This presentation focuses on how ECWA used its WaterGEMS hydraulic model to estimate the monetized, triple-bottom line impacts of breaks for every watermain in its system.

Speaker(s): Kevin Campanella, Burgess & Niple, Inc.

02:45 PM MDT

Water Capital Improvement Plan Strategy and Optimization in the Detroit Water and Sewerage Department

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.

Speaker(s): Brian Dara, Detroit Water and Sewerage Department

03:05 PM MDT

Elevating Water Main Renewal: Innovation and Adoption at Denver Water

Denver Water is Colorado's oldest and largest water utility, serving 1.5 million people and managing over 3,000 miles of distribution main. The utility has implemented an advanced multi-objective optimization tool to revolutionize its main renewal planning process. This solution enables identification of optimal, small diameter water main projects by aligning them with a wide array of criteria. Adopting new and innovative tools in public utilities is often fraught with challenges. Denver Water faced these issues head-on through a strategic focus on internal communication, coordination, and education. By engaging stakeholders and addressing their concerns, the utility was able to foster a culture of collaboration and openness to innovation.

Speaker(s): Jaclyn Gorman, Denver Water

MON009 - Innovations in Pipeline Management: Exploring AWWA M77's New Chapters

Moderator(s): Scott Jauch

Event Type: Educational Sessions

Event Track: Distribution System Operation and Management

02:00 PM - 03:30 PM MDT | Mon | Room 407

OVERVIEW: Condition assessment technologies evolve every year and can change current practices in the industry. This special topic sessions covers overall updates to the AWWA M77 – Condition Assessment of Water Mains and presentations from the four newly chapters.

PRESENTATIONS:

02:05 PM MDT

Water Main Materials, Performance, and Assessment

This presentation discusses the water main materials used during different eras, how they degrade, and how well they perform.

Speaker(s): Dan Ellison, HDR Engineering, Inc.

02:25 PM MDT

Collection and Reporting Standards

This presentation discusses the sources of relevant condition assessment data and the methods to capture and store the data in a meaningful and useful fashion.

Speaker(s): Matthew Coleman, City of Toronto

02:45 PM MDT

Pressure Monitoring

This presentation discusses strategies to monitor pressures within distribution systems to identify and minimize detrimental events.

Speaker(s): Peter Gaskamp, WaterOne

03:05 PM MDT

In-line Ultrasonics

In-line Ultrasonics

In-line Ultrasonic tools have been used for many years in the oil and gas industry for high resolution metallic pipe inspection. Recent technology advances have brought in-line ultrasonics to the water industry.

Speaker(s): Chandler Carpenter, Black & Veatch Corporation

MON011 - Lessons Learned from Full-Scale PFAS Treatment at Water Utilities

Moderator(s): Alice Fulmer

Event Type: Educational Sessions

Event Track: A Focus on PFAS

02:00 PM - 03:30 PM MDT | Mon | Room 501 - 502

OVERVIEW: This session will present the challenges, successes, performance, and lessons learned from water utilities with experience designing and operating full-scale PFAS treatment at their water treatment plants. Presentations will include utilities with groundwater and surface as well as GAC and IX treatment. Experience with in-house PFAS analysis will also be covered.

PRESENTATIONS:

02:00 PM MDT

Laying the Foundation: Treatment Selection and Design of the City of Vancouver's First PFAS Treatment System

The City of Vancouver has eight water stations supplied by groundwater wells where PFAS have been detected at concentrations above EPA's MCLs for perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA). Design of the City's first PFAS treatment upgrades at Water Station 14 initiated in the Fall 2023, and will be in construction starting April 2025. This presentation will discuss the decision making behind the selection of the PFAS treatment media between GAC and IX, the sizing basis for the pressure vessels, and how the design built in flexibility given unknowns around the future regulatory changes and development in treatment solutions.

Speaker(s): Lynn Stephens, Brown and Caldwell

02:30 PM MDT

Performance Review of two Full-Scale IX Plants for PFAS Removal from Groundwater

The presentation will include a detailed analysis of the performance of two full-scale treatment plants for the removal of PFAS from groundwater using ion-exchange (IX) resin. One plant began operation in September 2020 and has three parallel trains treating up to 6,250 gpm of groundwater, while the other plant began operation in October 2022 and has one train treating 1,200 gpm of groundwater. Each train in either plant includes two 12-ft diameter vessels configured in series and operated in alternating lead-lag positions. Two types of resins are used at the two plants. Each plant has already gone through multiple resin changeouts, and the impacts of changeouts on the efficiency of the resin will be presented and discussed.

Speaker(s): Issam Najm, WQTS, inc.

03:00 PM MDT

Bringing It Home – Challenges and Successes of In-House PFAS Analysis at Greater Cincinnati Water Works (GCWW)

This presentation will go over the challenges of bringing PFAS analysis in house and the steps GCWW took to overcome the challenges. Other water utilities and contract laboratories can use this information in setting up their own PFAS analysis programs.

Speaker(s): Alexandra Mendlein, Greater Cincinnati Water Works

MON014 - Advancing the Water Sector through Artificial Intelligence

Moderator(s):

Event Type: Educational Sessions, Focused Insights

Event Track: Intelligent Water

02:00 PM - 03:30 PM MDT | Mon | Room 603

OVERVIEW: Exploring how AI is transforming the water sector, focusing on innovations that enhance water management, conservation, and quality. Experts share insights on using AI to optimize resources, minimize environmental impacts, and improve operational efficiency. The discussion highlights emerging technologies and AI's role in addressing the challenges of sustainable water management.

PRESENTATIONS:

02:00 PM MDT

AI-Enhanced Digital Twin Journey of Houston Water: A Walkthrough

Houston Water is transforming its utility operations by integrating Artificial Intelligence (AI) with digital twin technology to optimize water management. This AI-enhanced digital twin provides real-time monitoring, predictive maintenance, and operational efficiency across Houston's water infrastructure. With capabilities like demand forecasting, leak detection, and water quality control, AI helps anticipate issues, reduce downtime, and improve sustainability. This presentation explores the technical architecture, challenges faced, and the future potential of this innovative approach, offering a roadmap for smarter urban water management.

Speaker(s): Satish Tripathi, City of Houston

02:20 PM MDT

Unleashing the Power of AI: A Journey Through Real-World Water Utility Transformations

Discover how Artificial Intelligence is revolutionizing the water industry. Join us for a captivating presentation exploring how AI and data management platforms are transforming water utilities, from enhancing operational efficiency to addressing aging infrastructure challenges. Through real-world case studies, we'll delve into the groundbreaking advancements that are shaping the future of water management.

Speaker(s): Offer Herman, IOSight

02:40 PM MDT

Predicting Water Quality using Artificial Intelligence

Watersheds face stress from population growth, climate change, and agricultural practices, with pollutants like Total Phosphorus (TP) and Total Nitrogen (TN) affecting water quality. These pollutants drive eutrophication, algal blooms, and habitat degradation, requiring collaboration and data collection for effective management. GHD used AI to ingest, clean, and integrate diverse datasets for predictive analytics. AI techniques identified trends, predicted future water quality, and ensured model accuracy. This approach supports stakeholders in understanding environmental impacts, with future plans for a web-based application to broaden access.

Speaker(s): Bhavin Bhayani, GHD

03:00 PM MDT

AI Predictive Water Quality States for Denver Water, Your Future Water Quality Advisor or Not?

This presentation explores how AI enhances Denver Water's quality management in the North Fork of the South Platte Watershed. We present outcomes from applying AI/ML to develop an early notification system predicting how extreme events influence shifts in key water quality factors and their relation to treatment processes. This project represents a novel shift in applying AI/ML to wider system state prediction. This presentation provides 1) an understanding how extreme events impact water quality and DWTP operations; (2) the contribution of diverse data sources—water quality data, meteorological records, and extreme events — in AI systems, and (3) the status of applying AI/ML models to predict shifts in Raw Water Quality States.

Speaker(s): Guillermo Vizarreta Luna, BlueGreen Decisions Lab, Colorado State University

03:20 PM MDT

Panel Discussion

MON015 - Hydraulic Modeling for Elevated Levels of Planning

Moderator(s): Ben Chenevey

Event Type: Educational Sessions, Focused Insights

Event Track: Water Utility Management

02:00 PM - 03:30 PM MDT | Mon | Room 503

OVERVIEW: Water distribution modeling is a critical tool in effective planning for water utilities. Modeling discussions during this session will include advanced techniques and case studies that will provide valuable insights into optimizing water distribution systems for sustainable urban development.

PRESENTATIONS:

02:05 PM MDT

Embracing SmartWater to Rebuild Tacoma Water's Hydraulic Model and Prepare for a Digital Twin

Tacoma Water leveraged AMI and "SmartWater" devices to rebuild its hydraulic model and prepare for a digital twin. Extended period simulations (EPS) were built with specific localized demand

for a digital twin. Extended-period simulations (EPS) were built with precise localized diurnal patterns based on AMI for specific days, and successfully calibrated using over 160 recently deployed pressure monitors along with SCADA. Predicted flows from the model are now accurate enough to identify maintenance issues and assist in solving operational concerns. The model includes every customer meter for direct import of AMI meter volumes in any scenario, for rapid calibration or analysis. The presentation will provide Tacoma Water's approach to SmartWater hydraulic modeling, specific examples, challenges, lessons learned, and next steps.

Speaker(s): Douglas Lane, Tacoma Public Utilities

02:25 PM MDT

Dynamic Master Planning: Leveraging Interactive Tools for Informed, Data-Driven Decision Making

Greenville Utilities Commission (GUC) has embarked on the journey to develop a dynamic Master Plan that is updated regularly and enhanced with interactive tools for informed, data-driven decision making. This presentation will introduce GUC's master planning process from data collection to Capital Improvement Plan (CIP) project development, highlighting the use of interactive tools. We will showcase tools for analyzing field data, communicating model calibration, assessing pump station condition data to support a Risk Based Assessment, prioritizing CIP projects based on multiple factors to meet system needs, and visualizing projections, system capacity analyses, and CIP projects in ArcGIS Online.

Speaker(s): Isabella Stubbs, Freese and Nichols, Inc.

02:45 PM MDT

Using Hydraulic Modeling to Plan District Metered Areas (DMAs) for Water Loss Control

This presentation will describe the process of using hydraulic modeling to lay out the DMAs for four large pressure zones for San Jose Water (with between 19,400 and 42,600 service connections each) and performing a technology evaluation to select DMA flow meters. Because San Jose Water has a very large, dense water system, the goal of the system was to build the DMAs with multiple flow meters and closed valves while not compromising hydraulics such as fire flow availability and water quality at dead ends. The ultimate goal was to create DMAs that San Jose Water can use to help prioritize their water loss control activities in the future.

Speaker(s): Brian Skeens, Jacobs, Jessica Kissel, San Jose Water Company

03:05 PM MDT

A Case Study on Energy Analysis & System Effects by Doubling High Service Pumping Utilizing Digital Twin

This is a case study on energy cost and consumption analysis & system effects by doubling the high service pumping volume utilizing digital twin with live and historical data. The system serves a large metropolitan area in Missouri with about 330,000 customers and through a network of approximately 5,000 miles of transmission and distribution main, ranging in diameter from 2-inches to 42-inches.

Speaker(s): Jian Yang, American Water Works Company

MON019 - Optimizing Corrosion Control in Distribution Systems

Moderator(s): Lauren Wasserstrom

Event Type: Educational Sessions

Event Track: Advances in Water Treatment

02:00 PM - 03:30 PM MDT | Mon | Room 504

OVERVIEW: This session will explore the fundamental principles of optimizing corrosion control to manage the release of lead, copper, iron, and other metals into drinking water. Attendees will learn best practices for implementing and maintaining effective corrosion control, and gain insights into the latest advancements in understanding how to control and monitor for these metals.

PRESENTATIONS:

02:05 PM MDT

Overview of Internal Corrosion Control in Drinking Water Distribution Systems

This presentation covers the general concepts behind internal corrosion and metals release in drinking water distribution systems with focus on lead, copper, iron, brass, and galvanic corrosion, and sets the stage for the subsequent presentations.

Speaker(s): Philip Brandhuber, Brandhuber Water Quality & Treatment LLC

02:15 PM MDT

Water Quality Monitoring and Assessment of Internal Corrosion and Increased Metals Concentrations

The presentation emphasizes the crucial water quality (WQ) parameters that affect internal corrosion and metals concentrations. Approaches for developing a monitoring program to assess and troubleshoot corrosion-related WQ problems are discussed.

Speaker(s): Melinda Fitzmaurice, Confluence Engineering Group, Inc.

Speaker(s): [Meirinda Friedman](#), *Continence Engineering Group, Inc.*

02:25 PM MDT

Corrosion Control Treatment Techniques and Unintended Consequences

This presentation highlights the latest information for selecting appropriate corrosion control treatment, including WRF's recent project on Phosphate-Based Corrosion Inhibitors and Sequestrants to Meet Multiple Water Treatment Objectives.

Speaker(s): [Roger Arnold](#), *Hazen and Sawyer*

02:35 PM MDT

Corrosion Control Treatment Evaluation Studies and Assessment Tools

Desktop and demonstration tools can be used to assess metals release, including to select or optimize CCT, or evaluate source water or treatment changes. An overview of available tools and how they can inform CCT decisions are discussed.

Speaker(s): [Sheldon Masters](#)

02:45 PM MDT

Desktop Corrosion Control Treatment Evaluation Studies

This presentation will walk through the steps for performing a desktop CCT evaluation, including assessing water quality data, distribution system materials, customer complaints, analogous systems, and modeling chemical treatment options.

Speaker(s): [Chris Hill](#), *AECOM*

02:55 PM MDT

Bench- and Pilot-Scale Testing Approaches to Inform Corrosion Control Treatment Decisions

The latest guidance and practical tools for selecting and implementing bench- and pilot-scale testing approaches to assess corrosion control and metals release will be highlighted, with focus on lead, copper, and iron pipe materials.

Speaker(s): [Tyler Bradley](#), *Philadelphia Water Department*

03:05 PM MDT

Implementing Pipe Scale Analysis and Water Sampling Strategies to Evaluate Corrosion Control Treatment

This presentation will highlight water sampling strategies and techniques for pipe scale analyses to inform corrosion control treatment decisions. Strategies presented will help systems evaluate, predict, and reduce corrosion and metals release.

Speaker(s): [David Cornwell](#)

03:15 PM MDT

Implementing and Maintaining Optimal Corrosion Control and Improving Water Quality Stability

Distribution system practices that can assist with implementing and maintaining optimal CCT and improving water quality stability will be highlighted, such as process control charts and operational strategies to reduce water age & maintain residuals.

Speaker(s): [Richard Giani](#), *CDM Smith*

MON020 - Federal Water Policy 2025 - Meeting Requirements in the Midst of Change

Moderator(s): [Ken Lykens](#)

Event Type: Educational Sessions

Event Track: Regulatory & Legislative Actions

02:00 PM - 03:30 PM MDT | Mon | Mile High Ballroom 3ab

OVERVIEW:

PRESENTATIONS:

02:00 PM MDT

Cybersecurity – A Changing Federal Landscape

Speaker(s): [Kevin Morley](#), *Federal Relations*

02:30 PM MDT

Drinking Water Policy – Deadlines, To-Dos, and Hurdles

Speaker(s): Rebecca Slabaugh, Arcadis

03:00 PM MDT

Clean Water Act from a Utility Perspective

Speaker(s): Carol Walczyk, Veolia Municipal Water

MON021 - Optimizing Water Utility Resources: Strategies for Effective Water Utility Regionalization

Moderator(s): Katie Richardson, Bebe Schaefer

Event Type: Educational Sessions

Event Track: The Future of Water | Roundtable Sessions

02:00 PM - 03:30 PM MDT | Mon | Four Seasons Ballroom 2-3

OVERVIEW: Water and Wastewater utilities face incredible and increasing operating pressures and expenses. Regionalizing or Consolidating water and wastewater utility services is one of many options communities can consider leveraging economies of scale and improve water service. While an important tool, utility consolidation is also complex and difficult to undertake. Regionalization/Consolidation isn't the right option for every community; the value proposition must yield more benefits than costs. Leaders need access to data, information, and a clear picture of the payoff to justify the journey. To generate understanding about what can be accomplished, this session will explore present some of the research that the SIT is gathering on different approaches to regionalization or consolidation, the financial impacts, policy and regulatory drivers, and how to work towards triple bottom line benefits. In addition, a preview of the Case study assessments and a value statement (for recommended operational efficiencies) being developed will be reviewed, as well a discussion around what the implementation plan and activity flow-chart will include. Also discussed will be stakeholder engagement guidelines and considerations.

PRESENTATIONS:

02:00 PM MDT

Optimizing Water Utility Resources: Strategies for Effective Water Utility Regionalization

Speaker(s): Bebe Schaefer, EMA, Katie Richardson, TYLin Greeley and Hansen Water Solutions, Tad Bohannon, Christina Murphy, West Des Moines Water Works, John Young, Bill Teichmiller, Adam Carpenter, American Water Works Association

MON022 - Navigating the Financial, Legal and Management Opportunities of One Water

Moderator(s): Jason Graham

Event Type: Educational Sessions

Event Track: Legal, Financial, and Management

02:00 PM - 03:30 PM MDT | Mon | Four Seasons Ballroom 4

OVERVIEW: This interactive session will feature an overview and discussion on key management and financial aspects that go into visualizing and creating a successful One Water program. Leading experts from the water utility, industry, and financial sectors will explore with attendees what One Water is, successfully visualizing a One Water future, and a discussion on the key management and financial components that make a One Water program a reality.

PRESENTATIONS:

02:00 PM MDT

Navigating the Financial, Legal and Management Opportunities of One Water

Speaker(s): Angela Bricmont, Denver Water, Jon Freedman, Veralto, Jason Graham, Stantec Consulting Services, Inc., Joe Jacangelo, Stantec

MON027 - A Resilient Water Future: Innovative Solutions and Collaborations

Moderator(s): [Stephanie Sansom](#)

Event Type: Educational Sessions

Event Track: Water in the West

02:00 PM - 03:30 PM MDT | Mon | Room 607

OVERVIEW: The Rocky Mountain Region's arid climate necessitates innovative water treatment solutions to ensure a sustainable water supply. As the area faces water scarcity, this session will delve into planning and treatment technologies to safeguard its water resources. By emphasizing collaborative strategies, we aim to foster sustainable water treatment and management practices.

PRESENTATIONS:

02:00 PM MDT

What's in Your Arsenal? Effects of Nitrate on NDMA and 1,4-dioxane Using UVAOP from the Rocky Mountain Arsenal's Pilot Study

The Rocky Mountain Arsenal (RMA) in Colorado is on the National Priorities List for groundwater remediation with portions of the site having detectable amounts of NDMA and 1,4-dioxane. The North Boundary Containment System (NBCS) utilizes UV treatment to photolyze NDMA. In recent years, 1,4-dioxane levels have increased above the remediation goal, requiring RMA to investigate implementation of UV Advanced Oxidation Process (UVAOP). Through the years, several pilot studies evaluated the efficacy of UVAOP and showed potential for Nitrate interference on the technology's performance. This presentation describes the results of a new pilot study evaluating the effects of varying nitrate levels on the ability to remove the target contaminants.

Speaker(s): [Tiffany Miller](#), *Tetra Tech*

02:30 PM MDT

Diversifying Colorado's Water Portfolio: The Potential for Stormwater Capture and Use to Contribute to a Water Resilient Future

This presentation highlights findings from two projects that directly address the economic challenges associated with stormwater capture and use (SCU). The first project estimates SCU potential at the state-level and applies a framework for identifying, quantifying, and monetizing the multiple benefits of SCU in Colorado and other western states. The second project examines local level challenges and solutions, drawing on in-depth case studies from participating utilities across the country. The presentation will focus on considerations and methods for evaluating the costs and benefits of SCU and demonstrating how this information can be used to achieve key outcomes.

Speaker(s): [Shannon Spurlock](#), *Pacific Institute*

03:00 PM MDT

Irrigators as friends for future water supply planning

Making friends with irrigators can be involved but important. This presentation shares findings from ongoing work with Colorado irrigators and farm producers on water allocation options in the region. Themes will explore how water utilities can collaborate with these stakeholders to inform future water supply decisions. Additionally, the research highlights the importance of incorporating agricultural perspectives early in the development of decision support tools for water supply options. Attendees will learn where and how utilities, state regulators, and regional water agencies can incorporate these views to foster more collaborative water allocation processes.

Speaker(s): [Dixie Poteet](#), *Colorado State University*

MON029 - Advancing Drought Early Warning, Research, and Planning in the Water Sector

Moderator(s): [Elizabeth Ossowski](#)

Event Type: Educational Sessions

Event Track: Water Resources Planning, Protection & Management

02:00 PM - 03:30 PM MDT | Mon | Mile High Ballroom 1ab

OVERVIEW: Drought can result in significant operational impacts to water utilities, from a loss of water supply to poor source water quality. Building long-term drought resilience means increasing capacity to respond to water supply threats, withstand impacts from drought, and quickly recover when droughts do occur. This session delves into innovative solutions where water utilities have been at the forefront of partnerships to modernize regional drought early warning systems, research and communicate the effects of low-flow and drought on our Nation's ecosystems, water resources, and communities, and plan for the droughts of the future.

PRESENTATIONS:

MON032 - Water Reuse: Exploring Resilient Solutions for a Sustainable Future

Moderator(s): [Melanie Holmer](#)

Event Type: Educational Sessions

Event Track: Reuse

02:00 PM - 03:30 PM MDT | Mon | Room 605

OVERVIEW: This session showcases water-intensive projects and programs across different regions, providing insights into challenges, successes, and paradigm shifts in the realm of potable and non-potable water reuse and reclaimed water utilization. Explore the evolving landscape of water reuse and discover how these endeavors provide drought resilience and efficient water resource management.

PRESENTATIONS:

02:00 PM MDT

Sustainable Water Supply for Data Centers: Practical Options

As demand for data center continues to grow, practical water solutions are needed. This presentation will delve into practical, integrated solutions to these challenges.

Speaker(s): [Rachel Schwaab](#), *Ramboll*

02:30 PM MDT

Data Center Cooling - No Problem We Have Recycled Water

This study will present summary of a comprehensive study which concluded that using recycled for evaporative cooling is feasible and highly attractive solution over air cooling or using potable water. The results of this study will provide an unmatched value for public agencies, data center providers/owners and water practitioners who are exploring recycled water options to create a sustainable solution for data center's cooling and other evaporative cooling purposes.

Speaker(s): [Ufuk Erdal](#), *Black and Veatch*

03:00 PM MDT

A Case Study on Using Potable Reuse to Advance Development of Critical Infrastructure in the Desert Southwest

This presentation examines using potable reuse to support the Southern Nevada Supplemental Airport (SNSA) development in the Ivanpah Valley, set to begin operation in 2037. It explores reuse strategies to address water resource challenges when developing new infrastructure in a remote, desert location. Key aspects include evaluating source water availability and quality to and from airport operations, treatment processes, side streams, and regulatory issues. The goal of the study is to provide the Southern Nevada Water Authority (SNWA) with feasible potable reuse alternatives to facilitate development in the short term, and enhance water resource recovery, efficiency, and sustainability for the SNSA and surrounding areas in the long-term.

Speaker(s): [Kyleen Marcella](#), *Stantec*

MON034 - Opportunistic Pathogens in Distribution Systems

Moderator(s): [Bina Nayak](#)

Event Type: Educational Sessions

Event Track: Distribution System Operation and Management

02:00 PM - 03:30 PM MDT | Mon | Mile High Ballroom 1cd

OVERVIEW: This session will focus on control of opportunistic pathogens (OPs) in drinking water distribution systems. The effects of disinfectants and assimilable organic carbon on concentrations of OPs will be discussed.

PRESENTATIONS:

02:00 PM MDT

Inactivation of Opportunistic Pathogens and Prevention of Biofilms in Drinking Water Systems using UV LEDs

Light emitting diodes (LEDs) that emit germicidal UV irradiation (200-290 nm) have many potential applications within drinking water distribution systems, tanks, and points of entry/use to reduce biofilm formation or inactivate biofilm-bound opportunistic pathogens, such as *Pseudomonas aeruginosa*. In this study, two bench-scale systems were utilized to compare two different UV

disinfection methods: UV pre-treatment of planktonic cells prior to biofilm formation vs. in situ UV treatment of cells during biofilm formation. These results will help inform if and how UV LEDs can be used to reduce the burden of biofilms in drinking water systems.

Speaker(s): Madison Ferrebee, *University of Colorado Boulder*

02:30 PM MDT

Assessing the mechanistic effect of disinfectants on waterborne opportunistic pathogens

Opportunistic pathogens pose a significant threat to public health, with annual burdens exceeding \$1 billion. Suboptimal disinfection in drinking water systems may cause inadequate damage to the OPs, leading to potential repair. Understanding how OPs are inactivated will help reveal exposure conditions beyond which irreparable change occurs. This will be useful for optimizing disinfectant residuals to manage OPs, while avoiding unintended consequences like formation of disinfection by products.

Speaker(s): Zia Bukhari, *American Water Company*

03:00 PM MDT

Effects of Assimilable Organic Carbon and Disinfection on Opportunistic Pathogen Concentrations in U.S. Drinking Water Systems

Drinking water samples were collected quarterly for one year from full-scale drinking water distribution systems throughout the continental U.S. and Alaska to assess the concentrations of opportunistic pathogens (OPs) including *Legionella pneumophila*, *Mycobacterium avium* complex, and *Pseudomonas aeruginosa*. Basic water quality parameters (pH, temperature, disinfectant concentration) were measured onsite at the time of sample collection, and assimilable organic carbon was quantified as an indicator for the water to potentially support OP growth. In addition, we will discuss results from a case study of a system experiencing a Legionnaires' disease outbreak where water samples were collected before and after implementation of chloramination.

Speaker(s): Molly Bledsoe, *University of Minnesota*

MON035 - Funding and Management Strategies for Building Resilient Small Systems

Moderator(s): Stacy Barna

Event Type: Educational Sessions

Event Track: Water Utility Management

02:00 PM - 05:00 PM MDT | Mon | Mile High Ballroom 4cd

OVERVIEW: Building resilience in small water systems requires more than just technical expertise – it requires strategic planning, robust management practices, and effective funding mechanisms. Small systems often face budget constraints, aging infrastructure, and increasing regulatory pressures, all of which make long-term sustainability a challenge. This session will focus on practical funding and management strategies that small systems can use to build resilience, upgrade infrastructure, and ensure continuous service in the face of evolving challenges.

PRESENTATIONS:

02:00 PM MDT

Value Engineering for Small Systems, Obtaining Compliance and IJA/BIL Funding

The presentation, Value Engineering for Small Systems, Obtaining Compliance and IJA/BIL Funding, identifies how Value Engineering (VE) can be used in addressing the critical need for infrastructure in smaller systems, typically found in rural areas, who struggle daily with maintaining system viability. The discussion covers a) what triggered the need for a change in approach to our small clients (\$1.2 trillion from the 2021 IJA/BIL), b) how the VE approach was modified to address this need, and c) a presentation of case studies showing how the VE process led to regulatory compliance and favorable funding awards. The goal of this presentation is to give you a few ideas to better position yourself to obtain funding.

Speaker(s): James Rhoades, *Alfred Benesch & Company*

02:30 PM MDT

Realizing the Promise of Water Infrastructure Investment and Jobs Act Funding: Lessons and Successes

For more than a year, the Water Infrastructure Environmental Finance Centers (EFCs) across the country have been providing assistance to drinking water, wastewater and stormwater system managers - particularly small and disadvantaged systems - to connect them with federal funding to help address the challenges they are facing. These EFCs either work within a region that mirrors the Environmental Protection Agency's regions or across the nation. We will have representatives from several regional water infrastructure and/or national EFCs. This session will outline what EFCs are learning about challenges and strategies that are proving most promising for addressing these issues within regions and across regions.

Speaker(s): Ellen Kohler, *The Water Center at Penn*

03:00 PM MDT

Addressing Emerging Contaminants in Small or Disadvantaged Communities

This session will share information about two new U.S. EPA grant programs: the Emerging Contaminants in Small or Disadvantaged Communities (EC-SDC) and the Small, Underserved, and Disadvantaged Communities (SUDC) programs. Participants will learn about ongoing national efforts to address emerging contaminants, including per and poly-fluoroalkyl substances (PFAS), and gain a better understanding of funding that is available to support projects that improve drinking and source water quality in small or disadvantaged communities.

Speaker(s): [Hillarie Ishida](#), *Environmental Protection Agency*

03:30 PM MDT

Toward a resilient stance: Supporting small, failing water systems in overcoming complex challenges

California's Safe and Affordable Funding for Equity and Resilience (SAFER) Program was designed to provide resources to failing and struggling water systems across the state to help manage their systems, comply with regulations, and overcome long-standing challenges. Stantec's SAFER Team will share case studies from several small water systems in California, including implementing options for PFAS treatment alongside nitrate and uranium removal, finding regional solutions where neighboring systems struggle with similar challenges, and building local capacity to strengthen governance, financial, and management practices.

Speaker(s): [Tori Klug](#), *Stantec Consulting Services, Inc.*, [EMILY FINNEGAN](#), *Stantec*

04:00 PM MDT

Community Engineering Corps - Supporting Sustainable Community-Driven Water & Wastewater Infrastructure Solutions Thought Equity

Community Engineering Corps - an alliance partnership between the American Water Works Association, the American Society of Civil Engineers, and Engineers Without Borders USA - works to build a future where everyone has access to the engineering resources required to live a life of opportunity. This session features an informational presentation about the Community Engineering Corps program, followed by a case study highlighting the work being done by AWWA-members via the Community Engineering Corps program to bridge the water and wastewater infrastructure gap.

Speaker(s): [Molly Sullivan](#), *American Water Works Association*

04:30 PM MDT

Panel Discussion

MON036 - The Role of Emerging Contaminants and their Management & Mitigation in the Circular Economy

Moderator(s): [Davis Wolf](#), [Nicole Holloway](#)

Event Type: Educational Sessions, Focused Insights

Event Track: Water Utility Management

02:00 PM - 05:00 PM MDT | Mon | Mile High Ballroom 2ab

OVERVIEW: This presentation explores the concept of the circular economy in water treatment: Maximization of resource efficiency with the minimization of the generation of waste. We will examine emerging processes and technologies that align with circular economy principles while considering threats from emerging contaminants. This includes the critical nature of the laboratory in contaminant identification, risk mitigation and driving innovation.

PRESENTATIONS:

02:00 PM MDT

Addressing Legislative Requirements for Microplastics in Drinking Water in California

Speaker(s): [Helene Baribeau](#), *California State Water Resources Control Board, Drinking Water*

02:18 PM MDT

Overview of Standard Methods for the Examination of Water and Wastewater and How Standards are Developed/Revised

Speaker(s): [William Lipps](#), *Shimadzu Scientific Inc.*

02:36 PM MDT

Is Testing Needed for Water Reuse on a Federal Level?

Speaker(s): [Hunter Adams](#), *City of Wichita Falls*

02:54 PM MDT

AWWA Water 2050 – A Laboratory Perspective

Speaker(s): Nicole Holloway, Beaver Water District

03:12 PM MDT

Function of the Lab – The Glue of the Water Industry

Speaker(s): Nicole Holloway, Beaver Water District

03:30 PM MDT

Regulations and Potential Impact to our Water Systems and Laboratory Functions

1. Regulations outside the US & Canada and their impact 2. Overview of Standard Methods for the Examination of Water and Wastewater and how standards are developed/revised 3. Emerging Contaminants & regulatory impacts on a local/state level 4. Addressing legislative requirements for microplastics in drinking water in California"

Speaker(s): Aaron Jarrell, William Lipps, Shimadzu Scientific Inc., Helene Baribeau, California State Water Resources Control Board, Drinking Water

03:48 PM MDT

Emerging Contaminants & Regulatory Impacts on a Local/state Level

Speaker(s): Aaron Jarrell

04:06 PM MDT

Introduction - Background

04:24 PM MDT

The Function of the Public Health Laboratory

04:42 PM MDT

The Importance of Wastewater Surveillance

MON037 - Water Community Challenges and Solutions with an International Twist

Moderator(s): Pooja Chari

Event Type: Educational Sessions, International

Event Track: Water Utility Management

02:00 PM - 05:00 PM MDT | Mon | Mile High Ballroom 1ef

OVERVIEW: Water Communities across the globe are facing complex challenges associated with monitoring of water/sanitation services, ever-evolving governmental directives, and digital transformation of techniques. This session is designed to provide a broad range of perspectives on the various drivers that are associated with the ever-changing landscape of water policies and management across the globe.

PRESENTATIONS:

02:00 PM MDT

Measuring the unmeasurable: monitoring sustainability of water and sanitation services in East Africa

This session will share the Sustainable Services Checklist (SSC), a tool Water For People uses in 9 countries to measure the progress on water, sanitation, and hygiene (WASH) systems strengthening and sustainability of services in order to reach Sustainable Development Goal 6. We will share cases of overcoming challenges and adapting monitoring systems to get government-buy in for scale in Rwanda and Uganda.

Speaker(s): Anna Libey, Water For People

02:30 PM MDT

Navigating the Drinking Water Directive in Europe

The Recast Drinking Water Directive (DWD) is the EU's pivotal law on drinking water. One of the

primary objectives is to safeguard human health by regulating the quality of water intended for human consumption. The DWD, with its updated water quality standards, will further protect human health by addressing pollutants of concern, such as endocrine disruptors and microplastics, and ensuring even safer drinking water for the EU. This session will explore the updated EU Directive, leading into enforcement, which begins January 1, 2027.

Speaker(s): Jonathan Brania, *UL Solutions*

03:30 PM MDT

TBD

04:00 PM MDT

TBD

04:30 PM MDT

TBD

MON042 - Setting the Bar for Removal of Ions in Drinking Water – AWWA's New Ion Exchange Standard and Its Application

Moderator(s): Cathy Swanson

Event Type: Educational Sessions

Event Track: Advances in Water Treatment

03:30 PM - 05:00 PM MDT | Mon | Room 503

OVERVIEW: AWWA issued a new Single Use Ion Exchange Standard in the spring of 2025. This session will provide an overview of the standard and its application. The session will also describe a second Ion Exchange Standard that will cover regenerable resin systems.

PRESENTATIONS:

03:30 PM MDT

We Deserve the Best – An Introduction to AWWA's New Single Use Ion Exchange Standard

04:00 PM MDT

Positioning Practical PFAS Performance

Security Water District (SWD) is one of the first municipalities in the United States to implement full scale treatment of groundwater contaminated with PFAS compounds utilizing strong based, single-use, Ion Exchange (IX) resin. Why did SWD invest in a technology that was yet to be widely accepted on groundwater sources from the Widefield Aquifer? This presentation will explain why IX was chosen as the best option, the obstacles that became a challenge, EPA's role, and future challenges.

Speaker(s): Brandon Bernard, *Security Water District*

04:30 PM MDT

Ion Exchange Treatment and Corrosion Control

Understanding the unintended consequences of water treatment is as crucial as contaminant removal. When using ion exchange resins, the water chemistry may change and create a corrosive environment. This talk will help water treatment professionals know when to look for these potential situations and how to mitigate. Compliance to maximum contaminant levels for PFAS, nitrate, uranium, perchlorate, chrome VI, TOC, and more is possible with ion exchange without creating corrosion potential.

Speaker(s): Cathy Swanson, *Ecolab, Purolite Resins*

MON044 - A Ten-Year Journey of Empowering Utility-Led Innovation

Moderator(s): Sydney Samples

Event Type: Educational Sessions

Event Track: Research

03:30 PM - 05:00 PM MDT | Mon | Room 403 - 404

OVERVIEW: The sustained pace of change in the water sector has highlighted the need for a sustained practice of seeking out innovative ideas and solutions that equip utilities to address these challenges and opportunities. This session surveys a decade of innovation management research and insights, as well as a panel discussion with the utility leaders that have put these concepts into practice. The session will be guided by The Water Research Foundation 4642: Fostering Innovation with Water Utilities, The Water Research Foundation 4907: Leading Water and Wastewater Utility Innovation, and The Water Tower: Building an Innovation Narrative.

PRESENTATIONS:

03:30 PM MDT

Foundations for Innovation Management

Speaker(s): Jason Carter

04:00 PM MDT

Field Notes from Innovation Practitioners

Speaker(s): Kimberly Reed, Louisville MSD, Sara Titus, WSSCWater, Ryan Lociceror

04:30 PM MDT

Looking Back and Moving Forward – Panel on Utility Innovation

Speaker(s): Jason Carter, Kimberly Reed, Louisville MSD, Sara Titus, WSSCWater, Ryan Lociceror, Sydney Samples, The Water Research Foundation

MON047 - Advancements in Pipeline Inspection and Assessment Techniques

Moderator(s):

Event Type: Educational Sessions

Event Track: Infrastructure Management

03:30 PM - 05:00 PM MDT | Mon | Room 406

OVERVIEW: This session covers advancements in pipeline inspection and assessment techniques and the importance of maintaining water infrastructure. These advancements offer new methods for ensuring the safety and reliability of water pipelines, ultimately benefiting communities who rely on clean water.

PRESENTATIONS:

03:30 PM MDT

The Data All Lives in a Yellow Submerged Thing - Corpus Christi Water inspects 101-mile Mary Rhodes Pipeline in Single Run

The Mary Rhodes Pipeline (MRP) Condition Assessment Project completed a record-breaking distance inspection utilizing the next generation of inline inspection tools and technologies previously not available. Corpus Christi Water's (CCW) 101-mile long MRP conveys over half of CCW's water from Lake Texana to its WTP and is a critical asset. Since its inception, the MRP has experienced 33 leaks/failures and due to its capacity, length, and lack of redundancy, has a high consequence of failure. As a result, CCW performed a desktop assessment of the MRP to understand potential causes of historical failures and provide recommendations for a pipeline condition assessment to help CCW understand what would be required to maintain level of service.

Speaker(s): Jerry Snead, HDR Engineering

04:00 PM MDT

Big Pipes, Big Data: Advances in Metallic Pipeline Condition Assessment

Explore advancements in metallic pipeline integrity management with next-generation free-swimming technology. Large-diameter pipeline owners can now avoid fully dewatering and physically entering the pipeline, making inspections safer and more water conscious. Learn about the innovations powering these cutting-edge ultrasonic inspection tools. Gain insight into how free-swimming platforms can improve inspection efficiency and how artificial intelligence accelerates the analysis of terabytes of high-resolution pipe wall condition data. Toronto Water will share their experience deploying this platform and share how they are leveraging inspection data to reduce risk, manage costs, and maintain reliability of their network.

Speaker(s): Eric Toffin, Xylem

04:30 PM MDT

Bar-wrapped Pipe Assessment and Forensic Evaluation: The Next Phase of Tucson Water's Pipeline Protection Program

Nearly 25 years after establishing its industry leading Pipeline Protection Program, Tucson Water continues to innovate as it begins a new phase in the Program's history by evaluating its inventory of C303 bar-wrapped pipe (BWP). In August 2023, Tucson Water conducted a free-swimming electromagnetic inspection on 15 miles of late '60s 42-inch BWP. Reported results included broken reinforcing bars, steel cylinder loss and multiple anomalous signals. This presentation will detail challenges faced during the inspection and results from forensic tests to validate distress and investigate anomalies. This assessment puts Tucson on course for developing a reliable long-term BWP management strategy like the journey started with PCCP many years ago.

Speaker(s): Christopher Kyea, *Pure Technologies, a Xylem brand*

MON049 - Demand Disrupters: Distribution System Challenges & Opportunities

Moderator(s): John Collett, Christopher Keil

Event Type: Educational Sessions

Event Track: Distribution System Operation and Management

03:30 PM - 05:00 PM MDT | Mon | Room 501 - 502

OVERVIEW: This session provides a look into large, confined area customer demands including a roundtable discussion. Case studies include impacts of data centers, wholesale contracts, & developments. Individual sessions will discuss how to estimate demand from these sources, how specific challenges were solved, how to develop planning standards, and how to operate facilities with large swings in demand.

PRESENTATIONS:

03:30 PM MDT

Introduction to Demand Disruptors

Speaker(s): John Collett, *Hazen and Sawyer*

03:40 PM MDT

Data Center Water Demands, Challenges, and Opportunities for Utilities

This presentation will allow attendees to understand the quantity of water demanded by data centers and factors that determine demand, challenges with demand seasonality and how to plan for it.

04:00 PM MDT

Bourbon, Batteries, & Beyond: Hydraulic Modeling Identifies Needs to Meet Louisville Water's Large Wholesale Growth

This presentation discusses the challenges met and opportunities afforded by significant wholesale growth due to the operations of two major industries adjacent to Louisville Water's service area.

Speaker(s): Christopher Keil, *Louisville Water Company*

04:20 PM MDT

From Factors to Faucets: Planning for New Developments in Broomfield Colorado

The City and County of Broomfield employs hydraulic models for their potable and reuse water systems, along with detailed standards for developers, to understand large system growth in the northeast and aid in planning for future capital improvements

Speaker(s): Matthew Deaver, *City and County of Broomfield CO*, Ben Chenevey, *Arcadis*

04:40 PM MDT

Panel Discussion

MON051 - PFAS Treatment at Large-Scale Surface Water Treatment Plants

Moderator(s): Alice Fulmer

Event Type: Educational Sessions

Event Track: A Focus on PFAS

03:30 PM - 05:00 PM MDT | Mon | Room 407

OVERVIEW: This session will explore factors affecting the variability of PFAS in surface water as well as the unique challenges for treating PFAS in surface water treatment plants. It will also discuss the impact of water quality on PFAS treatment and importance of optimizing TOC removal for PFAS treatment, with a focus on large-scale water treatment plants.

PRESENTATIONS:

03:30 PM MDT

Understanding the Factors Affecting PFAS Variability in the Potomac River Watershed (WRF Project 5269)

The Potomac River supplies drinking water to over five million people in MD, VA, WV, and DC. Since 2005, the Drinking Water Source Protection Partnership (DWSPP) has worked on source water protection, addressing risks from municipal, agricultural, and industrial sources. As utilities plan for compliance with PFAS regulations, understanding PFAS variability in source water is crucial. Ten DWSPP utilities have partnered with researchers to investigate PFAS factors in the Potomac River through a structured approach that includes sampling and analysis of PFAS and precursors. Initial findings from site selection and ongoing sampling will be shared, offering a model for other utilities seeking to understand PFAS variability in source water.

Speaker(s): [Christina Davis](#)

04:00 PM MDT

Getting Ready for PFAS Treatment at Large-scale Surface Water Facilities – Importance of Water Quality and Operational Evaluations

At the 155 MGD Raritan-Millstone WTP and the 80 MGD Canal Road WTP, New Jersey American Water conducted pilot testing of several types of media in gravity contactor conditions as potential full-scale PFAS treatment solutions. While a fundamental goal of the pilot testing was to determine PFAS removal performance and understand seasonal water quality change impacts on the medias, an equally important goal was to understand the broader impacts of integrating PFAS treatment into the overall plant. This presentation will share not just how the medias performed with respect to PFAS removal but also what was learned beyond PFAS performance that could help other utilities that may be embarking on their own pilot testing programs.

Speaker(s): [J. Margaret Gray](#), [Mott MacDonald](#), [Christiane Hoppe-Jones](#), [American Water Works Service Co.](#)

04:30 PM MDT

How Low Can You Go? Optimizing TOC Removal for Enhanced PFAS Treatment in Miami

Miami-Dade County Water and Sewer Department (MDWASD) is the largest water utility in the south-eastern United States, serving over 2.7 million customers from water treatment plants (WTPs) capable of producing up to 350 MGD. MDWASD is evaluating PFAS treatment alternatives at each facility for compliance with the final PFAS regulations. Since performance of adsorption processes is hindered by interference from TOC, MDWASD is exploring alternatives for TOC optimization to improve feasibility given the high TOC conditions. This presentation will share results characterizing TOC reductions through various alternatives and the resulting adsorptive media PFAS treatment performance improvements of the best TOC reduction options.

Speaker(s): [Adam Feffer](#), [Black & Veatch](#)

MON054 - AI and Machine Learning: Transforming Water Quality and Treatment Optimization

Moderator(s): [Kyle Thompson](#)

Event Type: Educational Sessions

Event Track: Intelligent Water

03:30 PM - 05:00 PM MDT | Mon | Room 603

OVERVIEW: Explore how AI and machine learning are revolutionizing water quality prediction, treatment optimization, and operational efficiency. Presentations will cover AI-driven early notification systems for water quality shifts, machine learning applications for predicting PFAS treatability, and data-driven tools optimizing filter performance at one of the largest U.S. water treatment plants. Discover innovative approaches to enhance decision-making and meet regulatory and operational challenges.

PRESENTATIONS:

03:30 PM MDT

From Good to GREAT: How a Strong Operations Team Can Take Their Treatment Game to the Next Level Using Optimization

Water utilities are under increasing pressure to optimize performance and control costs while maintaining high water quality standards. Louisville, CO, which operates two water treatment plants, has implemented a multi-objective tool that empowers operators to make data-driven decisions,

improving operational efficiency and treatment effectiveness. This system allows operators to simulate different treatment scenarios and forecast outcomes, helping them optimize water quality and reduce costs across the entire treatment process. This presentation will explore Louisville's experience using the tool to enhance decision-making, focusing on operators' critical role in maximizing its value.

Speaker(s): Peter Fiske, Lawrence Berkeley National Lab

04:00 PM MDT

A Machine Learning Approach for Predicting PFAS Treatability in Drinking Water

In April 2024, EPA finalized the National Primary Drinking Water Regulations (NPDWR) for six per- and polyfluoroalkyl substances (PFAS). With the approaching compliance deadline of April 2029, utilities are looking to identify and implement feasible PFAS treatment strategies. To streamline selection of treatment approaches based on the unique needs of individual utilities, a nationwide study was performed to acquire PFAS treatability data representing diverse geographies, water quality characteristics, PFAS, and treatment facilities. Using machine learning, PFAS treatability was predicted, providing a valuable tool for narrowing the selection of treatment technologies as utilities across the nation look to address PFAS contamination.

Speaker(s): Meredith Feltman, Ardurra

04:30 PM MDT

Scaling Up Data Driven Operations Support to Optimize Plant Efficiencies and Performance

At the North Texas Municipal Water District (NTMWD) Wylie WTP, one of the largest in the US, filter performance issues with KPIs like UFRV and terminal headloss were addressed by developing an automated Filter Operations Dashboard. This tool, integrating real-time SCADA data, along with filter surveillance information, optimizes filter performance and provides a unified performance assessment.

Speaker(s): Erik Vosburgh, Hazen and Sawyer

MON059 - Lead Hot Topics

Moderator(s):

Event Type: Educational Sessions

Event Track: The Latest on Lead And Copper

03:30 PM - 05:00 PM MDT | Mon | Room 504

OVERVIEW: This session describes benefits from lead control measures, including corrosion control treatment at drinking water utilities and testing/remediation at schools/childcares.

PRESENTATIONS:

03:30 PM MDT

Water Quality Double Hockey Sticks - Lead and Legionella

Lead and Legionella are concerns that are primarily associated with premise plumbing. These water quality concerns have historically been reported as separate issues. However as with many parameters in drinking water managing one parameter can result in unintended consequences to another. Since 2016, Pittsburgh Water and Sewer Authority has implemented an aggressive program to control lead in drinking water including implementation of a new corrosion control program and removal of lead service lines. Interestingly, during this same period the number of Legionnaires Disease cases reported in the county has also declined. This presentation will review data to start a conversation if there could be an association between Lead and Legionella.

Speaker(s): Frank Sidari, Pittsburgh Water & Sewer Authority

04:00 PM MDT

Clear Improvement: Implementing Optimized Corrosion Control Technology at Jackson, Mississippi's 110-year-old JH Fewell WTP

The Jackson, Mississippi water system experienced lead concentrations above regulatory limits in 2015, which triggered a requirement for a desk-top assessment and selection and implementation of an optimized corrosion control treatment strategy. The water system was implementing this strategy at its 110-year-old JH Fewell WTP in 2022 at the time the system was placed under the oversight and control of a federally appointed Interim Third-Party Manager. This presentation will discuss the background and the implementation of the alkalinity and pH adjustment system to meet water quality parameters for distribution system corrosion control. Details of the optimization, operator training and system water quality improvements will be shared.

Speaker(s): Mia Welch, Jacobs

04:30 PM MDT

Improving Water Quality and Children's Health: Let's tackle lead reduction!

This presentation will share information about EPA's efforts to promote testing and remediation of lead in drinking water at schools and childcare facilities. Participants will learn about funding and

resources available for communities to bring attention to this important issue that schools and childcare facilities in the United States are facing.

Speaker(s): [Hillarie Ishida](#), *Environmental Protection Agency*

MON060 - Implications of the First 100 Days of 119th Congress and New Administration

Moderator(s): [Clayton Freed](#)

Event Type: Educational Sessions

Event Track: Regulatory & Legislative Actions

03:30 PM - 05:00 PM MDT | Mon | Mile High Ballroom 3ab

OVERVIEW: The first five months of 2025 include the opening days of the 119th Congress and the transition from the outgoing administration of President Biden to the incoming administration of President Biden. During this period there have been shifts in numerous aspects of federal policy with implications for the water sector. This session's speakers will highlight key changes and ongoing developments most important to water systems.

1. Federal Legislation and the Water Sector
2. State Primacy Agency Perspective
3. A State Practitioner's Perspective on Infrastructure Funding

PRESENTATIONS:

03:30 PM MDT

Federal Legislation and the Water Sector

Speaker(s): [Nathaniel Norris](#), *American Water Works Association*

04:00 PM MDT

State Primacy Agency Perspective

Speaker(s): [Eric Oswald](#), *EGLE - DWEHD*

04:30 PM MDT

A State Practitioner's Perspective on Infrastructure Funding

MON061 - Building Financial Resiliency in Water Utilities: A Path to 2050

Moderator(s): [David LaFrance](#)

Event Type: Educational Sessions

Event Track: The Future of Water | Roundtable Sessions

03:30 PM - 05:00 PM MDT | Mon | Four Seasons Ballroom 2-3

OVERVIEW: Water 2050 is AWWA's forward-looking initiative aimed at shaping the future of water. This session focuses on building financial resiliency within water systems, a cornerstone of the initiative. Water 2050's Finance & Affordability Strategic Implementation Team (SIT) will present insights from three sub-groups working to address key financial challenges and strengthen financial stability for water utilities by 2050. Attendees will learn about upcoming resources for fostering financial resiliency, strategies to achieve full-cost pricing, and a proposed certificate program to validate rate studies. The session will feature interactive feedback opportunities, encouraging participants to help shape these efforts. Leave the session with a clear vision of what's ahead and confidence in the tools and resources being developed to support water utilities in the journey to 2050.

PRESENTATIONS:

03:30 PM MDT

Building Financial Resiliency in Water Utilities: A Path to 2050

Speaker(s): [Angie Miller](#), *American Water Works Association*, [Jason Mumm](#), *FCS GROUP*, [David LaFrance](#), *American Water Works Association*, [John Mastracchio](#), [Kevin Wachtel](#), *GFOA*, [Chris Morrill](#), *Government Finance Officers Association*, [Christine Spitzley](#)

MON062 - Climate Change in the Water Sector and Its Impact on Financial Resilience, Insurability, and Credit-Investment Quality

Moderator(s): [Angela Bricmont](#)

Event Type: Educational Sessions

Event Track: Legal, Financial, and Management

03:30 PM - 05:00 PM MDT | Mon | Four Seasons Ballroom 4

OVERVIEW: Experts from the financial, insurance and water sectors will share methods and resources utilities can use to address financial and insurance sector concerns relating to climate change risk through 1) data and methods to understand a water sector utility's climate threat profile; 2) climate change risk assessment methods, approaches, and tools; and 3) effective disclosure of climate change risk management efforts. Attendees will leave with a better understanding of the financial implications of climate change on utilities, learn the most common questions asked by financial stakeholders relating to risk management, hear about utility risk communication, and see how leading water utilities are "controlling the narrative."

PRESENTATIONS:

03:30 PM MDT

Climate Change in the Water Sector and Its Impact on Financial Resilience, Insurability, and Credit-Investment Quality: Interactive Discussion

Speaker(s): [Matthew Ries](#), *DC Water*, [Jenny Poree](#), *S&P Global*, [Helen Cregger](#), *Moody's*, [Angela Bricmont](#), *Denver Water*, [Paul Fuller](#), *Allied Public Risk*, [Karri Ving](#), *Brown and Caldwell*

MON063 - Leveraging AMI for Water Conservation

Moderator(s):

Event Type: Educational Sessions

Event Track: Water Use Efficiency Practices

03:30 PM - 05:00 PM MDT | Mon | Room 607

OVERVIEW: With more water utilities across the country implementing Automated Metering Infrastructure (AMI), there is a tremendous opportunity to leverage the technology for other utility priorities, including water conservation and customer communication. This session provides examples of utilities looking to use their AMI systems for more than just metering for revenue recovery.

PRESENTATIONS:

03:30 PM MDT

Aurora Water Leverages Event Monitoring to Combat Water Loss and Enhance Utility Operations

A comprehensive event monitoring system helped Colorado utility Aurora Water to address significant water loss and improve operational efficiency.

Speaker(s): [Patrick Williamson](#), *Badger Meter*

04:00 PM MDT

Data-Driven Approaches to Water Efficiency and Self-Monitoring

The City of Golden, Colorado, in collaboration with AquaHawk, has implemented a groundbreaking program that leverages advanced data-driven algorithms to revolutionize water efficiency and compliance monitoring. At the core of this initiative is the integration of the City of Golden's Waste of Water Ordinance with cutting-edge technology, providing residents with unprecedented visibility into their water usage. By aligning customer-facing tools with staff-level monitoring capabilities, this approach empowers customers to self-monitor their consumption, avoid violations, and proactively address inefficiencies. Key components include individualized water use reports enriched with efficient user comparisons and visualized through dynamic, algorithmically-driven analytics. These tools enable customers to benchmark their consumption against similar properties, fostering accountability and behavioral change. Additionally, the irrigation compliance program employs predictive analytics to identify and notify customers of potential ordinance violations, streamlining enforcement while reducing waste at scale. This session will detail the innovative use of algorithms and data visualization to promote water conservation, highlighting how this leading-edge solution scales to address regional water challenges effectively. Attendees will gain insight into how municipalities can deploy similar technologies to achieve significant water use reductions, optimize operational efficiency, and build more engaged, conservation-minded communities.

Speaker(s): [Kathleen Duke](#), *City of Golden PW / WTP*

04:30 PM MDT

Unlocking AMI Data for Actionable Insights with a Customized Analytics Platform

This presentation will provide an overview of how the Jacobs AMI Data Analytics Platform was implemented at two water utilities to help them unlock actionable insights with the rollout of their AMI. These analytics are meant to go beyond what the existing utility platforms currently provide, are especially tailored to what the utility is interested in seeing on a daily basis, and is updated with new data daily. It also has the ability to import other data streams beyond the AMI data and to provide unique insights to the water utility.

Speaker(s): Brian Skeens, Jacobs

MON070 - Innovative Source Water Protection Approaches for Addressing Water Quality Uncertainties

Moderator(s):

Event Type: Educational Sessions

Event Track: Water Resources Planning, Protection & Management

03:30 PM - 05:00 PM MDT | Mon | Mile High Ballroom 1ab

OVERVIEW: This session explores the diverse challenges in water quality management and the innovative approaches employed to mitigate critical uncertainties related to the magnitude and timing of potential water quality changes. Attendees will gain insights into the next steps to better understand links between forests, climate change, and water quality in forested watersheds.

PRESENTATIONS:

03:30 PM MDT

Forest Ecosystem Response to Climate Change and Potential Water Quality Impacts in the NYC Watersheds

Forests cover up to 90% of the New York City water supply watersheds and are crucial for maintaining water quality. Climate change is expected to bring warmer wetter winters and hotter drier summers, leading to more frequent and/or severe extreme precipitation, droughts, fires, and pest infestations. These changes may cause shifts in forest composition that affect water quality. A literature review and modeling study assessed potential impacts on turbidity, dissolved organic carbon (DOC), nutrients, and acidity. Results suggest increased turbidity, DOC, and water temperature, especially during extreme events, with uncertainties remaining around biogeochemical nutrient cycles and long-term impacts.

Speaker(s): Phoebe Aron, Hazen and Sawyer

04:00 PM MDT

Climate chaos? Here's Your Algae Management Playbook

Join us for an insightful presentation addressing the urgent challenges posed by harmful algae blooms (HABs) in the context of climate change. This session will provide water utilities with essential guidance on managing HABs by focusing on source water risks, treatment vulnerability assessments, and mitigation strategies for cyanotoxins. Attendees will learn how to develop a custom action plan tailored to their specific needs, enhancing their preparedness and response capabilities based on case studies. Additionally, we will explore emerging monitoring tools that can aid in the detection and management of algae risks.

Speaker(s): Nicole McLellan, Stantec

04:30 PM MDT

Balancing heat resilience and water conservation in the hot and arid Las Vegas Valley Metropolitan Area

In metropolitan areas where water resources are limited and impervious surfaces abound, both heat resilience and water security are necessary to achieve sustainability and quality of life. The purpose of this study was to: 1) investigate local drivers of heat, and cooling effects of vegetation cover types, on temperatures across the hot and arid Las Vegas Valley Metropolitan Area; and 2) examine the results in the context of Colorado River water scarcity and community planning efforts (e.g., tree-planting initiatives and water-smart landscaping). Other urban populations with similar challenges must implement informed decisions given their own local and regional contexts to achieve a balance of heat resilience and water security.

Speaker(s): Nancy Beecher, Southern Nevada Water Authority

MON074 - Addressing Emerging Contaminants: Microplastics, 1,4-Dioxane & PFAS in Drinking Water Treatment

Moderator(s): Cayla Cook

Event Type: Educational Sessions

Event Track: Water Quality Challenges

03:30 PM - 05:00 PM MDT | Mon | Mile High Ballroom 1cd

OVERVIEW: This session explores two emerging contaminants in drinking water: microplastics and 1,4-dioxane (and PFAS). Learn about the findings from a nationwide study profiling the effectiveness of treatment processes for microplastics removal, and delve into the latest research on removal of 1,4-dioxane and PFAS from drinking water.

PRESENTATIONS:

03:30 PM MDT

Profiling Water Treatment Plants for Microplastics Removal

Water Research Foundation (WRF) Project 5185 – Fate of Microplastics in Drinking Water – was initiated to bolster understanding of the capabilities of various unit treatment processes to remove microplastic particulates. Accordingly, the research profiled 16 water treatment plants across the country, including a wide variety of commonly used processes to maximize the benefit for the water treatment community. Water quality data, operational parameters, and design criteria were also captured in an effort to establish the correlative factors the most influence microplastics removal.

Speaker(s): Brent Alspach, Arcadis U.S., Inc.

04:00 PM MDT

A Pilot Study Comparing PFAS and 1,4-Dioxane Removal in High Recovery Membrane Systems

The Piedmont Triad Regional Water Authority (PTRWA) owns and operates the John F. Kime Water Treatment Plant (JFK WTP), a 14.7 MGD surface water plant in Randleman, NC. PTRWA surface waters contain PFOS, PFOA, and 1,4-dioxane and treatment is needed. Pilot studies were performed to evaluate PFAS and 1,4-dioxane removal at this facility and develop design criteria. Three membrane pilots are included in this study: a three-stage RO, a flow reversal RO (FRRO) pilot, and a closed-circuit RO (CCRO) pilot. This presentation discusses the pilot protocol, PFAS and 1,4-dioxane treatability, and full-scale decisions.

Speaker(s): Samantha Black, HDR

04:30 PM MDT

Eliminating 1,4 Dioxane and PFAS entering Source Water

The session will feature case studies from design professionals and utility managers on how to reduce these contaminants in source water. Following a 2019 NCDEQ request, Burlington's EBWWTP and SBWWTP sampled for 1,4-dioxane and PFAS, revealing violations of the Clean Water Act. Weekly PFAS sampling began, and by May 2020, the EBWWTP's Zimpro process was shut down. A comprehensive sampling in 2021 included multiple discharge locations and identified industrial sources of PFAS. In Fall 2023, a settlement with SELC was reached due to elevated PFAS levels in effluent.

Speaker(s): Viraj deSilva

MON075 - Integrated Communications: Building Trust and Credibility through Brand Journalism, Partnerships, and Innovation

Moderator(s):

Event Type: Educational Sessions

Event Track: Water Utility Management

03:30 PM - 05:00 PM MDT | Mon | Room 605

OVERVIEW: Reaching and resonating with today's audiences requires a thoughtful blend of traditional strategies and innovative approaches. This presentation will guide you through creating an integrated communications plan that drives trust and engagement. Join us to explore how an effective multi-pronged communication approach can amplify your impact and inspire lasting connections.

PRESENTATIONS:

03:30 PM MDT

Elevating Customer Connections: A Multipronged Approach

By sharing its story with the community Louisville Water Company focuses on putting tap water in the spotlight. This presentation will highlight how the integrated communications and marketing strategy Louisville Water uses to deliver its story strengthens the public's trust. Using a variety of inputs including consumer feedback, capital projects, and company initiatives, the team strategically plans outreach and content.

Speaker(s): Channa Newman, Louisville Water, Kathleen Speicher, Louisville Water

04:00 PM MDT

The Benefits of Bundling – Using the PESO Model to Maximize Community Engagement

Session provides overview of the current media mix which blends traditional and digital channels to reach people and features real world examples from utilities on how they use news media, social media, advertising/marketing, websites, etc. to engage their communities.

Speaker(s): Marci Davis, Jacobs

04:30 PM MDT

A Business Equation: How Louisville Water Links Water to Economic Development

Water is the anchor for economic development. Utilities that embrace communications often place the focus on residential customers. Louisville Water Company has that focus but has also found a strategic approach in linking water to the economy strengthens public trust and produces organic endorsements. This presentation looks at two initiatives: one that links water to the small business economy in Louisville and a second that links the value of water to Kentucky's signature industries. The presentation will highlight the research to create the initiatives, examples of content marketing and brand journalism, and the results.

Speaker(s): Kelley Dearing Smith, Louisville Water

MON078 - Lightning Round Poster Session

Moderator(s):

Event Type: Educational Sessions

Event Track: Poster Session

03:30 PM - 05:00 PM MDT | Mon | Mile High Ballroom 4ab

OVERVIEW:

PRESENTATIONS:

Tuesday, June 10, 2025

TUE002 - Water Treatment 101 Series

Moderator(s): Jon Reuther, Molly McManus

Event Type: Educational Sessions

Event Track: Advances in Water Treatment

08:30 AM - 11:30 AM MDT | Tue | Room 401 - 402

OVERVIEW: Coagulation, filtration, disinfection, residuals management, and aesthetics controls are the backbone of many water treatment systems. A focus on the basics of these technologies and their optimization provides a foundation to improve plant performance and efficiency. This series serves as a reminder of these critical system components, provides basic information for those new to the field, and a valuable refresher for those with years of experience in the industry.

PRESENTATIONS:

08:30 AM MDT

Coagulation: Fundamentals of Coagulants, Particles, and NOM

Speaker(s): David Pernitsky, Stantec

09:00 AM MDT

Flocculation and Clarification: Everything You Need to Know

Speaker(s): Lindsey Olson, American Water Company

09:30 AM MDT

Filtration: All Things Granular Media

Speaker(s): Nicole Wiley, American Water Company

10:00 AM MDT

Disinfection: Basics of Pathogen Inactivation

Speaker(s): Partiban Raja, Jacobs

10:30 AM MDT

Residuals: The Other Half of Surface Water Treatment

Speaker(s): Aaron Duke, Hazen and Sawyer

11:00 AM MDT

Aesthetics: Treatment to Improve Customer Experience

Speaker(s): Susheera Pochiraju, Hazen and Sawyer

TUE003 - Chloramine Research and New Insights

Moderator(s):

Event Type: Educational Sessions

Event Track: Research

08:30 AM - 10:00 AM MDT | Tue | Room 406

OVERVIEW: These presentations explore strategies for managing chloramination. The first presentation discusses how natural organic matter (NOM) can hinder the effectiveness of orthophosphate in controlling lead release, emphasizing the need to optimize corrosion control. The second focuses on ammonia removal from groundwater, showcasing a successful biofiltration pilot study that achieved full ammonia removal and nitrate/nitrite conversion while meeting regulatory requirements for disinfection by-products. The third reviews case studies using monochloramine as a secondary disinfectant to enhance residual stability, reduce DBPs, and prevent nitrification. Together, these presentations provide insights into optimizing chloramination practices.

PRESENTATIONS:

08:30 AM MDT

Evaluating Natural Organic Matter's Influence on Orthophosphate Corrosion Control Efficacy in Chloraminated Drinking Water Systems

Lead leaching from corrosion scales in drinking water presents a complex challenge for utility management. This study investigates the effects of natural organic matter (NOM) on lead release under varying pH conditions, both in the presence and absence of orthophosphate. It aims to determine if NOM interferes with the efficacy of orthophosphate treatment by delaying its impact and elevating stabilized lead levels. Also, it explores whether reducing NOM levels can lower the required phosphate dosage to achieve target lead levels. Bench-scale galvanic corrosion reactors are employed to assess the interactions between NOM, pH, and phosphate concentrations. The results will help shape strategies to effectively mitigate lead corrosion risks.

Speaker(s): Nastaran Mosavari, University of Waterloo

09:00 AM MDT

Ammonia in Groundwater - to Chlorinate or not to Chlorinate? That is the Question! Technology Overview, Pilot Testing, and Design

Ammonia in groundwater is always a concern for operators, as it can interfere with vital oxidation and disinfection processes. Additionally, ammonia in distribution systems can lead to nitrification events. The Schomberg WTP is a 1.4 MGD (5.4 ML/d) groundwater treatment facility supplied by a raw water source that contains elevated iron, manganese, methane, organics, and ammonia. In this study, available technologies for ammonia removal were evaluated. The best available technology was determined to be biological filtration, so a 1-year pilot study was conducted to optimize system design and understand its limitations. Pilot study results were used to guide an innovative conceptual design of the facility and will also be presented.

Speaker(s): Ahmed Elhadidy

09:30 AM MDT

Monochloramine Stability and Nitrification Control in Italian Public Water Supplies Using a Novel Monochloramine Generator

The aim of this presentation is to provide attendees with information about secondary disinfection with monochloramine from two Italian public water supplies. The presentation will focus on how the correct and fine dosage of the monochloramine precursors will result in an optimal Cl to N ratio with no unreacted free ammonia and consequent limitation of the formation of nitrite and nitrate with no need of chlorine burnouts over the course of 18 months for case study #1 and five years for case study #2. Speakers from both the public water supplies and the monochloramine generator engineering design team will join the presentation to provide multi-disciplinary insights on how the results were achieved in the field.

results were achieved in the field.

Speaker(s): Alberto Comazzi, Sanipur, Chiara Ziveri, IREN ACQUA REGGIO – GRUPPO IREN

TUE004 - Novel Approaches to PFAS Source Identification, Removal, and Destruction

Moderator(s): Mary Smith

Event Type: Educational Sessions

Event Track: Research

08:30 AM - 10:00 AM MDT | Tue | Room 403 - 404

OVERVIEW: This session will include a discussion of novel approaches to source identification, removal, and destruction of PFAS in drinking water and wastewater systems. WRF 5276 explores the use of machine learning to identify PFAS sources. WRF 5212 explores a pilot-scale approach to capturing PFAS in wastewater scum using enhanced aeration. WRF 5275 demonstrates the feasibility of destroying PFAS and reactivating granular activated carbons through the application of microwaves.

PRESENTATIONS:

08:30 AM MDT

PFAS Fingerprinting for Source Identification Using Machine Learning (WRF 5276)

Speaker(s): Anna Schroeder

09:00 AM MDT

Enhanced Aeration and Scum Recovery for Physical Removal of PFAS from Wastewater (WRF 5212)

Speaker(s): Charles Schaefer, CDM Smith

09:30 AM MDT

Characterization and Pilot Testing of Microwave Reactivation for PFAS-laden Granular Activated Carbons (WRF 5275)

Speaker(s): Tanju Karanfil

TUE005 - Sustainable Infrastructure Case Studies - Success Stories

Moderator(s): Venus Price

Event Type: Educational Sessions

Event Track: Infrastructure Management

08:30 AM - 10:00 AM MDT | Tue | Room 405

OVERVIEW: This session highlights success stories and new innovations in sustainable infrastructure. Resilient NYC Partners implemented a transferrable pay-for-performance model for delivering green infrastructure, proving to be a catalyst for innovation and unique approaches. Marin Municipal Water District will share how water utilities can integrate hydropower generation projects into their existing system and discuss how California's NEM 3.0 rule has impacted the market. Nashville's MWS has made a bold commitment to upgrade their Omohundro WTP and pursue both Envision and LEED Platinum certifications, which would be the first of its kind to achieve these recognitions.

PRESENTATIONS:

08:30 AM MDT

Using a Pay-for-Performance Model to Improve Delivery of Green Infrastructure in New York City

Presentation highlights an innovative program known as Resilient NYC Partners, which is accelerating the pace and decreasing the cost of green infrastructure delivery in New York through a pay-for-performance model aimed at non-city owned properties. The authors detail the initial set up and structure of the program, review customer acquisition and project implementation strategies developed to successfully deliver the program's first cohort of built projects, and present lessons learned during initial deployment and scaling of the program. Finally, the authors compare the Resilient NYC Program to similar programs and discuss the transferability of this program to other

urban environments.

Speaker(s): Shandor Szalay

09:00 AM MDT

Finding Green Energy Within a Drinking Water Utility: A California Case Study

Water utilities can spend up to 35% of their total operational budget on energy, posing a strong reason to examine ways to reduce energy costs. While efficiency may be the first place to look, there are opportunities to generate energy from moving water. The challenge then becomes identifying hydropower projects that can be integrated into a utility's system without creating significant additional resource burdens. Utilities need to identify and evaluate energy generation projects for maximum benefits, and then effectively communicate findings to leadership and customers. Using a case study from a Northern California water utility, this presentation provides valuable lessons learned for any utility hoping to generate its own hydropower.

Speaker(s): Elysha Irish, Marin Municipal Water District

09:30 AM MDT

Goal: Build the Most Sustainable Water Treatment Plant in the World

The Omohundro WTP has faithfully served Nashville and Davidson County for over a hundred years. Now, Nashville's Metro Water Services (MWS) is rebuilding Omohundro for the next 100 years. In line with this long-term vision, MWS has made a bold commitment to sustainability. The facility-wide upgrade project is pursuing both Envision and LEED Platinum certifications. If successful, Omohundro would be the first water or wastewater treatment plant in the world with both certifications. To achieve these goals, the project team is leaving no stone unturned. The project will include solar power installations, low-carbon materials, diverting almost all construction waste from landfill, and rehabilitating the site into a nature preserve.

Speaker(s): David Adams, Wilmot Inc

TUE009 - Addressing Legionella in Water Distribution Systems and Customer Buildings: Learning from the Grand Rapids, MN Outbreak

Moderator(s): Chad Seidel

Event Type: Educational Sessions

Event Track: Distribution System Operation and Management

08:30 AM - 11:30 AM MDT | Tue | Room 501 - 502

OVERVIEW: Grand Rapids Public Utilities, MN successfully identified and addressed the largest Legionnaires' Disease outbreak in the U.S. in 2024 by implementing monitoring and disinfection in under 5 months. Real world perspectives will be shared from water utility operations, engineering, management, and experts who resolved the outbreak.

PRESENTATIONS:

08:30 AM MDT

Get a Leg up on Legionella – A Manager's Guide to Distribution System Water Quality

Provides current Legionella context by describing outcomes from WRF#5156 that produced a large 5-year dataset of 9,181 samples from 57 utilities that permits an assessment of opportunities to control Legionella pneumophila in distribution systems.

Speaker(s): Mark LeChevallier, Dr. Water Consulting

09:00 AM MDT

Grand Rapids, MN Legionnaires' Disease Outbreak – Extinguishing the Largest Outbreak in the U.S. in 2024

Introducing the Grand Rapids, MN Legionnaires' Disease outbreak and the 2-pronged approach for monitoring and disinfection that extinguishing the largest outbreak in the U.S. in 2024

Speaker(s): Julie Kennedy, Grand Rapids Public Utilities

09:30 AM MDT

Utility Operations Monitoring for Legionella and Beyond

Will describe how utility monitoring for Legionella and beyond was implemented within a month and provided actionable results to assist community members to address concerns in their buildings.

Speaker(s): Christian Mathews, Corona Environmental Consulting, LLC

10:00 AM MDT

Implementing Disinfection in an Undisinfected Water Supply During a Legionnaires' Disease Outbreak

Will discuss how GRPU implemented disinfection as an undisinfected water supply during a Legionnaires' Disease outbreak, addressing concerns including disinfection persistence, biofilm disruption, DBPs, corrosion and more.

Speaker(s): Alex Mofidi, Confluence Engineering Group

10:30 AM MDT

The Big Picture Context for Legionella Management in US Water Systems

Will share big picture context for Legionella management, aimed at the need for utility managers, state and federal regulators, building owners, service providers and more to address pressing concerns - particularly undisinfected groundwater systems.

Speaker(s): Chad Seidel, Corona Environmental Consulting, LLC

11:00 AM MDT

Panel Q&A

Panel Q&A

TUE010 - Filter Operations

Moderator(s):

Event Type: Educational Sessions

Event Track: Distribution System Operation and Management

08:30 AM - 10:00 AM MDT | Tue | Room 407

OVERVIEW: This session will cover topics regarding the operations & maintenance of filters.

PRESENTATIONS:

08:30 AM MDT

When Turbidity Measurements Spike – Is it Fact or Fiction?

This presentation digs into the different causes of turbidity spikes and how to quickly determine if they are positive (fact) or negative (fiction).

Speaker(s): Mike Sadar, Lovibond

09:00 AM MDT

Elements of a Successful Fast-Tracked Filter Rehabilitation

When the decision was made to construct new filters at the K.R. Harrington WTP in Nashville, Metro Water Services required an interim solution to address performance issues associated with the existing filters. Filter upgrades were implemented with speed and precision, minimizing impacts to plant operations. This presentation will discuss the analyses that led to the selected filter improvements and the work sequence that allowed them to be constructed without compromising MWS's ability to produce water, ultimately completing construction 6 months ahead of schedule. The presentation will cover lessons learned through construction and startup and highlight improvements leading to 50% increased run times and 25% increased loading rate.

Speaker(s): John Zwerneman, Carollo Engineers, Inc., Nathan Ellermann, Nashville Metro Water Services

09:30 AM MDT

Ensuring Filter Health: Best Practices for Assessment and Maintenance

Discussion focused on when and why filter assessments should be performed, as well as what to look for during an assessment to ensure good filter health and operational efficiency. This presentation will include examples of data gathered during various filter assessments, interpretation of data and the conclusions that were drawn, as well as microscopic photographs of several filter media samples to act as a visual aid showcasing media that has been compromised by brittleness or coated in inorganic materials such as calcium carbonate or ferric chloride.

Speaker(s): Bradley Suedbeck, Jacobs Engineering OMFS

TUE011 - PFAS Detection and Removal - Recent Research

Moderator(s): Chandra Mysore

Event Type: Educational Sessions

Event Track: A Focus on PFAS

08:30 AM - 10:00 AM MDT | Tue | Room 605

OVERVIEW: These talks address the detection and removal of per- and polyfluoroalkyl substances (PFAS). The first explores thermal degradation mechanisms of PFAS adsorbed to granular activated carbon (GAC) during regeneration processes, identifying conditions that promote mineralization versus partial decomposition to harmful byproducts. The second evaluates GAC-coated filters in existing treatment plants for PFAS

to harmful byproducts. The second evaluates GAC-capped filters in existing treatment plants for PFAS adsorption and particle filtration, demonstrating their potential as an interim solution for PFAS compliance. The third compares standard and emerging analytical techniques for PFAS detection, highlighting significant variability among methods.

PRESENTATIONS:

08:30 AM MDT

Thermal Destruction of Perfluoroalkyl Substances Sorbed to Granular Activated Carbon: Byproducts and Mechanisms

Water treatment facilities utilize granular activated carbon (GAC) to sequester PFAS from contaminated water, and spent GAC can be regenerated for further use in remediation through thermal treatment. Regeneration could serve as a potential route for complete mineralization of PFAS. Alternatively, PFAS or PFAS products of incomplete destruction may become gaseous and it is unclear if air pollution control devices will prevent their release. We conducted bench-scale experiments designed to observe byproducts of thermally treated PFAS and PFAS sorbed to GAC. We varied industry relevant variables such as temperature, PFAS chain length, and primary gas (air, oxygen, nitrogen).

Speaker(s): Lauren Edwards, University of Nevada, Reno

09:00 AM MDT

Pilot-Scale Investigation of PFAS Treatment Feasibility in GAC-Capped Drinking Water Filters

GAC caps are an economical, easy-to-install option to provide GAC adsorption capability in an existing granular media filter without the need for the construction of new structures. GAC cap as an adsorption treatment technique has certain limitations, including the use of larger mesh-size GAC and regular filter backwashes, that are less desirable for PFAS adsorption. In this pilot study, we investigated the feasibility of GAC-capped filters for particle filtration and PFAS adsorption at a surface water treatment facility in Colorado's Front Range. Results of the pilot indicate better filtration performance by GAC-capped filters than sand-anthracite filters and the potential of GAC caps as an interim measure for PFAS treatment.

Speaker(s): Rosa Yu

09:30 AM MDT

The Art of PFAS-Destruction in Reuse: Not a One-Size-Fits-All Approach

PFAS destruction in reverse osmosis concentrate remains a critical hurdle in the adoption of membrane based PFAS treatment strategies in potable reuse applications. Hazen led a 2-month continuous pilot program investigating the electrochemical oxidation of PFAS impacted membrane concentrate on brackish groundwater in Alamogordo, NM.

Speaker(s): Conner Murray

TUE013 - Future-Proofing SCADA: Master Planning for Tomorrow's Water Systems

Moderator(s): Michael Gruenbaum

Event Type: Educational Sessions

Event Track: Intelligent Water

08:30 AM - 10:00 AM MDT | Tue | Room 607

OVERVIEW: This session will explore the challenges utilities face as legacy SCADA systems become obsolete. Presentations will highlight new approaches to SCADA master planning, emphasizing the importance of proactive strategy, integration with emerging technologies, and future-proofing investments. Presenters will share best practices via case studies for implementing SCADA system upgrades, focusing on scalability, resilience, and adaptability to meet the demands of modern water infrastructure.

PRESENTATIONS:

08:30 AM MDT

SCADA Systems Becoming Obsolete Faster Than Ever

By nature, supervisory control and data acquisition (SCADA) systems are electronic, thus they are continuously being updated and improved. Like a computer operating system, they must be upgraded regularly to work at peak efficiency, and mine operational data for optimization, to mitigate risk and increase system resiliency. None of that is possible without first centralizing and ensuring quality data.

Speaker(s): Nick Bath, Stanley Consultants Inc.

09:00 AM MDT

The Evolution of Digital Water Strategic Planning: Moving Beyond Traditional SCADA Master Plans

Water SCADA master plan development has evolved significantly in recent years. Modern planning

now extends beyond basic utility asset management, integrating comprehensive digital strategies to foster innovation and efficiency. This presentation explores cutting-edge approaches and benefits of digital water strategic planning, showcasing how plans have adapted to encompass all digital aspects of a utility. Our case study of Castle Rock, Colorado, demonstrates the importance of maintaining a dynamic, adaptive SCADA master plan to keep pace with rapidly evolving technological needs in the water sector. We will examine how utilities can leverage these advanced planning methodologies to optimize operations and prepare for future challenges.

Speaker(s): Dan Parr

09:30 AM MDT

SCADA Solutions for an Imperfect World - Modernization of Existing DCS Control System

The historic Omohundro Water Treatment Plant in Nashville, TN is undergoing a major facility transformation. The existing plant SCADA is obsolete and unable to support the process changes underway. To mitigate long-term operational and maintenance risk, it is critical to replace the aging distributed control system (DCS). Due to the need for continuous operation, a thoughtful approach to replacing the DCS in existing facilities is required. The implementation of this upgrade will provide operations and management with additional data that can be leveraged for enhanced process oversight and optimization. This presentation will discuss the strategic replacement of plant control systems and its impact on operational success.

Speaker(s): Catherine Shipman, Carollo Engineers, Jenny Miller, Jesse Hunter

TUE015 - From Lead Service Lines to Distribution Modeling: How Small Systems Are Addressing Distribution Challenge

Moderator(s):

Event Type: Educational Sessions

Event Track: Intelligent Water

08:30 AM - 11:30 AM MDT | Tue | Room 603

OVERVIEW: Small water systems distribution systems have unique challenges from aging infrastructure to the presence of lead service lines, as well as difficulties in managing and optimizing distribution networks. Addressing these issues is critical for safeguarding water quality and ensuring public health. This session will focus on the strategies and tools that small systems are using to tackle distribution challenges, from lead service line replacement to the implementation of modern distribution modeling techniques.

PRESENTATIONS:

08:30 AM MDT

Successful Lead Remediation in Schools and Childcare: A Partnership Between RCAP Solutions and the State of New Hampshire

The presentation will include an overview of the key partnership and leveraging of both state and federal dollars to get the lead out of schools and childcare sites in New Hampshire (NH) as well as specific case studies and lessons learned. Through EPA and state funding streams and recent legislation, NH has been extremely proactive in rolling out lead sampling in schools and childcare and is working closely with RCAP Solutions, a local TA provider, to meet these new requirements which come well ahead of those outlined in LCRR/LCRI as well as use EPA funds for an array of right fit remediation solutions from fixture change outs to in line filters to the installation of bottle filling stations with lead removal filters.

Speaker(s): Sarah Buck, RCAP Solutions, Brian Scadova-Vose

09:00 AM MDT

Met the Lead Service Line Inventory Submittal Deadline; What is Next? A Perspective From Small Utilities.

Eliminating lead service lines (LSLs) is a huge concern for many small and rural utilities. The urgency propagated by the LCRR and LCRI rules, and the funding opportunities offered by the government provided an opportunity to develop an inventory and a plan to verify and replace all LSLs from their systems in a cost-effective way within a reasonable timeline. This presentation summarizes the work done by four such utilities. The commonality of the tasks done to meet EPA's requirements helped our team to develop replicative action list that can be used by other similar utilities irrespective of their geographic locations. This presentation will describe the case studies.

Speaker(s): Aziz Ahmed, CHA

09:30 AM MDT

Risk-Informed Strategies for Small Water Systems: Utilizing Existing Data for Proactive Pipeline Management

Quantitative risk assessment has become a fundamental tool in effective asset management for water systems. However, deploying a comprehensive risk assessment can be daunting for small utilities, which often face challenges due to limited data, resources, and technical capacity. The City of Lacombe undertook a comprehensive risk assessment initiative aimed at developing a long-term asset management plan. With limited existing data, the City implemented innovative methodologies

to gather and analyze information regarding asset conditions, operational history, and failure rates. This systematic approach provided a way to quantify risks associated with water mains, enabling the utility to make data-driven decisions.

Speaker(s): [Greta Vladeanu](#)

10:00 AM MDT

Resolution of Low-Pressures Through Water System Modeling for a Small Iowa Utility

Carroll, Iowa used water system modeling to leverage existing data to identify the causes of low system pressures and revised the model for design of the booster pump station and new pressure zone.

Speaker(s): [Caleb White](#), *JEO Consulting Group*

10:30 AM MDT

Less Can Be More: Practical Approaches for Selecting the Right Hydraulic Model

Smaller water systems inherently face many of the same issues and challenges as larger, more complex systems and are forced to address them with a smaller capital budget. A steady-state hydraulic model and master plan can help these utilities get the answers they need while maximizing their return on investment.

Speaker(s): [Dave Christiansen](#), *Freese and Nichols, Inc.*

11:00 AM MDT

Leveraging Hydraulic Modeling in Small Utilities

Hydraulic modeling transformed engineers' and operators' way of understanding their networks. While larger utilities often have the resources to build, calibrate and use hydraulic models, the same cannot always be said for smaller utilities. What seems like the status-quo is seen as advanced or unobtainable technologies for small utilities. However, smaller utilities stand to gain significant benefits from adopting hydraulic modeling. By simulating how water systems should function under various conditions, hydraulic models offer vital insights for system operators, managers, and engineers. This presentation highlights how Douglas County, KS, leveraged hydraulic modeling to improve customer satisfaction and operational efficiency.

Speaker(s): [David Monteiro](#), *Qatium*, [Tim Silvers](#)

TUE019 - Inventive Approaches to Controlling Lead in Drinking Water

Moderator(s):

Event Type: Educational Sessions

Event Track: The Latest on Lead And Copper

08:30 AM - 10:00 AM MDT | Tue | Mile High Ballroom 1cd

OVERVIEW: These three presentations focus on innovative solutions to tackle lead contamination. The first explores using high precision isotopes to identify the source of lead in blood, improving public health responses. The second examines lead release from pipes during corrosion control treatment, using advanced x-ray microscopy to understand and mitigate the issue. The third evaluates non-invasive technologies for identifying lead and copper service lines, reducing costs and disruption while helping utilities comply with regulations. These presentations offer promising strategies for managing lead exposure.

PRESENTATIONS:

08:30 AM MDT

Identifying the Source of Lead in Blood

Blood lead levels (BLL) have been a health indicator for many years. There are many possible lead sources—lead paint, dust, food, toys, dinnerware, soil, and water. Often, when there is a water lead action level exceedance there is an assumption that elevated BLLs are due to the water. Over the last few years, we have been researching and reporting on the use of high precision isotopes to locate the source of lead in water and pipes. In our research we have now tested the blood of individuals and in each case, we were able to locate the source causing the elevated BLL. In this presentation we will explain the technique and how public health officials, researchers and utilities could use it.

Speaker(s): [David Cornwell](#)

09:00 AM MDT

Improved Orthophosphate Lead Corrosion Control informed by Advanced Diagnostics

The EPA implemented the Lead and Copper Rule Revisions (LCRR) to mitigate lead exposure through drinking water due to its grave public health effects. Water utilities using pH and alkalinity adjustment for corrosion control treatments (CCT) will have difficulty meeting the LCRR requirements. Orthophosphate treatment at a circumneutral pH is effective at minimizing lead solubility and a lower pH result in less carcinogenic trihalomethane formation. However, transitioning from pH adjustment CCT to an optimized orthophosphate treatment at a circumneutral pH has not been previously attempted. We use correlative diffraction imaging techniques to improve our understanding of the mechanisms controlling lead release during this CCT transition.

Speaker(s): [Claire Boronski](#) *University of Colorado Boulder*

09:30 AM MDT

Service Line Material Identification Without Excavation: Insights from DC Water's Pilot Study

Utilities face significant challenges in maintaining and updating their Service Line Inventory due to typical split ownership and limited historical data. Traditional methods of identifying service line materials often require invasive excavation, leading to high costs and homeowner disruptions. Utilities need a more efficient way to ascertain service line materials without the drawbacks associated with digging. DC Water's pilot study explores innovative, non-invasive technologies at over 40 properties to identify lead and copper service lines without the need for excavation. Attendees will leave with a comprehensive understanding of these emerging technologies and their potential applications in the water industry.

Speaker(s): Javier Locsin, CDM Smith

TUE022 - Strategy and Action Items to Bring a Municipal Bond Transaction to Market

Moderator(s): Melissa Labuda

Event Type: Educational Sessions

Event Track: Legal, Financial, and Management

08:30 AM - 10:00 AM MDT | Tue | Four Seasons Ballroom 4

OVERVIEW: This interactive session will feature an overview and discussion on strategies and action items involved in bringing a municipal bond transaction to market. In addition to key points on the underwriting process and navigating the various financial requirements for funding a public entity, post-issuance compliance considerations will also be discussed. Discussion will also focus on the roles and responsibilities of the issuer's team and the professionals needed to assure bringing successful transaction to market.

PRESENTATIONS:

08:30 AM MDT

Strategy and Action Items to Bring a Municipal Bond Transaction to Market: Interactive Discussion

Speaker(s): Ryan Callender, Squire Patton Boggs (US) LLP, Darren Hodge, Leila Kleats, Denver Water

TUE023 - Engaging the Community for Conservation

Moderator(s):

Event Type: Educational Sessions

Event Track: Water Use Efficiency Practices

08:30 AM - 10:00 AM MDT | Tue | Mile High Ballroom 1ab

OVERVIEW: Water conservation programs are unique within a utility because they frequently serve as the public face to the community. This session will provide examples of how three utilities engaged with their communities to raise awareness and advance sustainable solutions that benefit customers and the community at large.

PRESENTATIONS:

08:30 AM MDT

I Water That Way - How a Parody of a Backstreet Boys Video Gave Denver Water a Global Platform to Promote Water Conservation

This is a moderated Q&A session with Denver Water employees who become known as "The Splashstreet Boys." This five-person group created a parody of the Backstreet Boys iconic video: "I Want it That Way." The video "I Water That Way" was meant to draw attention to the utility's rules for efficient outdoor irrigation. The video went viral, generating traditional and social media coverage across the United States as well as places as far away as Australia. The band members will provide insight into how the idea for the video came about, what went into making it (surprisingly little actually) and how the group and Denver Water handled being in the worldwide spotlight and further leveraged the important message of water conservation.

Speaker(s): Steve Snyder, Denver Water

09:00 AM MDT

Building Community Water Resilience: How Water Efficiency Programs Revitalize Communities

Flood irrigation of residential yards in the Arizona desert can be a shocking sight for those unfamiliar with the ancient origins of Phoenix's gravity-fed canal system. However, for some Salt River Project (SRP) customers with historic water rights, this affordable irrigation method can be critical. In 2024, SRP launched a pilot initiative to support a community struggling with an aging irrigation system; however, funding construction is only one of many steps in SRP's approach to building a long-term relationship with these customers. The Community Irrigation Revitalization Initiative presents a valuable case study to explore how utilities can and should leverage partnerships to increase both water efficiency and community engagement.

Speaker(s): [Caitlin Montano](#), *Salt River Project*

09:30 AM MDT

Building Sustainable Communities Through Green Infrastructure

Sustainable Tucson's Charitable and Faith-based Sustainability (CFS) Committee addresses the issue of sustainability and water conservation through an educational outreach program targeting a frequently overlooked audience in terms of sustainability - places of worship and charitable non-profits. Entering our third year, this presentation will highlight a food garden project that took place in 2022 on the property of a local Tucson refugee church, Kidane Mehret Eritrean Orthodox Tewahedo Church. The project yielded gardening knowledge, financial literacy, STEM and global awareness to climate issues for a select number of youths and adults in the community and was the recipient of a national award through Interfaith Power and Light.

Speaker(s): [Danielle Corbett](#), *Sustainable Tucson*

TUE033 - A Deeper Dive into the Largest Issues in Potable Reuse: The Potable Water Reuse Report

Moderator(s): [Amy Childress](#)

Event Type: Educational Sessions

Event Track: Reuse

08:30 AM - 10:00 AM MDT | Tue | Room 503

OVERVIEW: The Potable Water Reuse Report (PWRR) connects the potable water reuse community — including practitioners, regulators, and academics — to keep them up-to-date with the industry's rapidly evolving developments. The PWRR has published two series about DPR regulations and the importance of crediting treatment processes to ensure public health protection.

PRESENTATIONS:

08:30 AM MDT

A Deeper Dive into the Largest Issues in Potable Reuse: The Potable Water Reuse Report

Speaker(s): [Anya Kaufmann](#), *Trussell Technologies*, [Brian Pecson](#), *Trussell*, [Mitch Bartolo](#), *Trussell*

TUE034 - Disinfection Byproduct Challenges

Moderator(s): [Christine Owen](#)

Event Type: Educational Sessions

Event Track: Water Quality Challenges

08:30 AM - 10:00 AM MDT | Tue | Mile High Ballroom 4ab

OVERVIEW: This session focuses on innovative approaches and technologies for managing disinfection by-products (DBPs) in drinking water systems, with an emphasis on compliance, predictive modeling, and advanced treatment methods.

PRESENTATIONS:

08:30 AM MDT

Violations of Disinfection By-Product Regulations across New York: a 10-year Assessment of Community Water Systems

This presentation is a unique analysis of regulated disinfection by-product (DBP) exceedances in New York State's community water systems (CWSs). Federal regulations require maximum contaminant level (MCL) compliance based on a locational running annual average (LRAA), with individual exceedances in CWSs frequently neglected. To create a more comprehensive understanding of how well CWSs are faring in keeping DBPs low in their systems, we instead investigate individual quarterly results of the total trihalomethanes (TTHM) and 5 haloacetic acids (HAA5) for all CWSs in New York State for the last 10 years.

Speaker(s): [Rassil Sayess](#), *New York State Water Resources Institute*

09:00 AM MDT

Predicting DBP Formation With Machine Learning and Kinetics-Derived Models to Inform Compliance and Operations Decisions

The New York City Department of Environmental Protection is integrating disinfection byproduct modeling into their Operations Support Tool to plan for impacts of climate change and new regulations. The applicability of two types of DBP models – laboratory kinetics-derived models and machine learning models – was evaluated using 20 years of historical water quality and operations data. Both models were found to be accurate, and the pro's and con's of each approach will be discussed along with best practices for developing and implementing DBP prediction models for decision support.

Speaker(s): [Eric Peterson](#), *Hazen and Sawyer*

09:30 AM MDT

Use of BAC for Treating HAA5 Levels in the Distribution System

Charles County is planning a new interconnecting pipeline with a neighboring utility to purchase up to 5 mgd of potable water to address increasing water demand. Water quality analysis showed that DBP concentrations are near regulatory limits at the interconnection and the County will need to reduce DBP levels. Therefore, the County is planning to include a treatment facility in the interconnecting pipeline to reduce its HAA5 and TTHM concentrations. This presentation highlights 6-months of pilot testing of biologically active carbon (BAC) to remove HAA5 and identifying ideal operating conditions of BAC.

Speaker(s): [Meric Selbes](#), *Hazen and Sawyer*

TUE035 - Water Utility Success Stories

Moderator(s):

Event Type: Educational Sessions

Event Track: Water Utility Management

08:30 AM - 10:00 AM MDT | Tue | Mile High Ballroom 4cd

OVERVIEW:

PRESENTATIONS:

08:30 AM MDT

Stronger Together: Challenges and Successes in the Formation of a New Regional Water Authority in the Des Moines Metro

Speaker(s): [Christina Murphy](#), *West Des Moines Water Works*, [Ted Corrigan](#), *Des Moines Water Works*

09:00 AM MDT

How Proactive Equity Planning Led to Successful Funding for Salt Lake City's Lead Service Line Replacement Program

This presentation will provide insight into Salt Lake City's proactive equity planning efforts and the financial capability assessment that shaped their lead service line replacement plan and supported their first ever successful SRF funding package of over \$39M for their Lead Service Line Replacement Program. Additionally, this presentation will discuss the programmatic approach the City is taking to utilize these SRF funds on a variety of planning and construction activities and will outline the prioritization efforts being employed to equitably conduct this City-wide program with a dedicated focus on historically underserved neighborhoods.

Speaker(s): [Meredith Sullivan](#), *Jacobs*, [Dustin White](#)

09:30 AM MDT

From Concept to Completion: The Great Lakes Water Authority (2014-2024)

Ten years ago, the Great Lakes Water Authority was merely a concept discussed in the City of Detroit's bankruptcy. Ten years later, the concept has become reality and GLWA has become Michigan's largest water provider successfully serving almost 4 million people (approximately 40% of Michigan's population). This presentation tells the story of GLWA's stand up from concept to completion.

Speaker(s): [William Wolfson](#), *Great Lakes Water Authority*

TUE036 - Fresh Approaches to Water Rate Development and Affordability

Moderator(s):

Event Type: Educational Sessions

Event Track: Water Utility Management

08:30 AM - 11:30 AM MDT | Tue | Mile High Ballroom 2ab

OVERVIEW: Successful and innovative strategies for developing and communicating rate structures, affordability programs, and the value of water. The presenters will focus on different tactics, data analysis, and engagement approaches that have or can be used to achieve equitable and sustainable rate structures and funding for key programs in the face of affordability constraints or other real or perceived barriers.

PRESENTATIONS:

08:30 AM MDT

Engaging Diverse Voices: Shaping Rate Structures with Community Advisory Panels

Hillsboro recently established a 12-member Community Advisory Panel (CAP) to provide feedback on its water rate structure. The CAP was carefully recruited to represent Hillsboro's diverse community and ensure that single family residential and multi-family residential customers were included. The recruitment process resulted in a panel with members from various backgrounds, age ranges, races and ethnicities, and geographic areas across the service area. The committee met monthly from January to June 2024, offering recommendations based on their lived experiences and individual expertise. CAP recommended holding the fixed charge and creating a new low water usage tier for residential and revising peaking charges for multi-family.

Speaker(s): Elizabeth Bakke, Barney and Worth, Inc.

09:00 AM MDT

Utilizing Rate Structure Changes to Reduce Peak Demand and Delay Capital Expansion

The Del-Co Water Company operates in the Columbus region, and serves a high growth suburban area which is affluent and many homes have sprinkler systems and water lawns heavily. In the Midwest, most large utilities are experiencing per capita water use decline and have excess capacity, and Del-Co is trying to reduce outdoor water use. To avoid or delay expensive source and treatment infrastructure expansion, Del-Co has worked with Stantec to perform a cost-of-service study and to develop a new rate structure to send outdoor water use price signals. Marketing and launching the new rate structure will be a challenge as Midwesterners are not highly engaged in their water use. Can it be effective and delay the expansion projects?

Speaker(s): Glenn Marzluf, Del-Co Water Company Inc.

09:30 AM MDT

Architecting a Water Rate Increase Through Industry Advocacy

Water utilities provide a life sustaining service to their customers. Historically, utilities have provided this critical service while being drastically underfunded. Stricter regulations, aging infrastructure, and an increasingly competitive job market have put further financial pressures on water utilities. This presentation will examine the approach one utility took to stabilize its finances with a series of significant rate increases. The approach involved advocating for both the utility and the industry over a half decade to achieve the desired result. An increase in public trust and transparency were some of the resulting positive side effects of the process.

Speaker(s): Todd LaFountain, Springfield City Water, Light & Power

10:00 AM MDT

How to Deliver Safe, Affordable Drinking Water - Lead Service Line Replacement & Income-based Water Affordability

Detroit has been the epicenter for safe, affordable drinking water. You will hear about how the Detroit Water & Sewerage Department pivoted and began collaborating with activists. Detroit has launched the city's first income-based water affordability program, the Lifeline Plan, that is serving 25,000 households while utilizing innovative gap payment mechanism to provide a low, fixed monthly bill without changing the rate structure. Further, to ensure vulnerable households have the safest, cleanest water, we are replacing lead service lines at a rapid pace. We will share how Detroit has been able to do this effort without increasing rates.

Speaker(s): Bryan Peckinpaugh, Detroit Water & Sewerage Department

10:30 AM MDT

Water Affordability: A State-Wide Analysis of the Cost of Utilities and Private Wells

Within the United States, residents commonly access water through either centralized utilities or private wells. Rising costs of water treatment, including an estimated \$1 trillion for infrastructure improvements, have led to rising water bills, thus threatening the ability for utility customers to afford water. Similarly, the high cost of private well drilling threatens the affordability of water for the ~15% of US residents who rely upon private wells. To the best of our knowledge, this study represents the first attempt to analyze water affordability for all residents of a state-wide study area, both

centralized utility customers and private well users.

Speaker(s): [Rebecca Etter](#), *Auburn University*

11:00 AM MDT

Approaches for Demonstrating the Value of Water: Cape Fear Public Utility Authority, North Carolina

This presentation demonstrates methods and results from a study that quantified the value of clean and reliable water services provided by the Cape Fear Public Utility Authority in North Carolina. It goes beyond a traditional economic impact assessment of direct spending to also examine the value of water supply reliability for households and businesses in the region and the role of CFPUA in supporting economic development. Using CFPUA as a case study, the presentation will highlight approaches for assessing the value of water in different contexts. This study was completed in early 2024.

Speaker(s): [Janet Clements](#), *One Water Econ*

TUE037 - Evaluating the State of Diversity, Equity, and Inclusion (DEI) in the Water Utility Sector: Employee Perspectives and Challenges

Moderator(s): [Amanda Jones](#)

Event Type: Educational Sessions, Diversity

Event Track: Water Utility Management

08:30 AM - 11:30 AM MDT | Tue | Four Seasons Ballroom 2-3

OVERVIEW: Explore the many facets of how Diversity, Equity, Inclusion, and Belonging (DEIB) show up in the water industry. Hear the perspectives of employees, leadership, and the public on their perceptions of DEI initiatives, including the successes and obstacles faced in fostering an inclusive work environment.

PRESENTATIONS:

08:30 AM MDT

Water Workforce Diversity: Is DEI in Danger?

Speaker(s): [Kellie Watson](#), *Louisville MSD*

09:00 AM MDT

Public Trust and Empowerment in Jackson, MS: A Critical Element of Infrastructure Development

Speaker(s): [Mia Welch](#), *Jacobs*

09:30 AM MDT

Employee Perspective of Inclusion in a Diverse Utility

Speaker(s): [Rosanna La Plante](#), *WSSC Water*

10:00 AM MDT

Black in Water: The Importance of Black Mentorship in Black Professional Careers in the Water Industry

Speaker(s): [Gabriel Evans](#), *Black Water Professionals Alliance*

10:30 AM MDT

The Power of Neurodiversity: Energizing Utilities for a Brighter Future

Speaker(s): [Cathleen Chavez-Morris](#), *Equidad Group*

11:00 AM MDT

Recruiting the Future Water Workforce: SETH TXAWWA

Speaker(s): [Daniel Nix](#), *Texas AWWA*, [Mike Howe](#), *Texas AWWA*

TUE038 - Catalyzing Careers in Water Through Learning and Training

Moderator(s): [Stephanie Estabrook](#)

Moderator(s): [Stephanie Edrington](#)

Event Type: Educational Sessions

Event Track: Water Education and Workforce

08:30 AM - 10:00 AM MDT | Tue | Room 504

OVERVIEW: How technical training turns YPs into active members in the water workforce and how that model can be implemented throughout the water sector.

PRESENTATIONS:

08:30 AM MDT

Empowering Change: Fully Funded Fellowships Available for Community & Climate Resilience

Connecting with and educating our communities can sometimes feel isolating, but establishing strategic partnerships offers a powerful solution. This approach can achieve sustainability and water conservation goals with minimal added costs. In this presentation, we will explore how over the past two years, the Long Beach Utilities Department has partnered with the California Climate Action Corps (CCAC) to enhance its outreach and impact.

Speaker(s): [Dani Luna Morgutia](#), *Long Beach Utilities Department*

09:00 AM MDT

From the University Lab to Consulting: How Research Experience Can Be Applied to Your Professional Career

Recent EPA legislation will require water utilities to complete more bench- and pilot-scale testing, where engineers with research experience can apply knowledge and principles from graduate school to aid in aspects of testing, such as experimental design and data analysis. This presentation will discuss new and emerging legislation, including the new NPDWRs, and the likely increase in experimental water research to follow. Graduate school research experience will be valuable in experimental design and depth of analysis for bench- and pilot-scale work.

Speaker(s): [Sophie De Respino](#), *HDR*

09:30 AM MDT

From Training Room to Career: Hopeworks and American Water's Path to Success

Since 2015, Hopeworks and New Jersey American Water have partnered through an innovative and collaborative workforce program. New Jersey American Water has also referred Hopeworks to American Water for a services agreement with the company to enable additional partnerships with other American Water regulated state companies. The program directly engaged, trained, and employed 100+ Hopeworks young adults on Geographic Information System (GIS) projects. Young adults that graduate from the Hopeworks program earn permanent careers with an average salary of \$43,000 and a 12 month retention rate that is over 89%. As a direct result of the American Water partnership, several graduates have been hired at American Water.

Speaker(s): [Paishants Depalma](#), *Hopeworks*

PST01 - Fresh Ideas Poster Session

Moderator(s):

Event Type: Educational Sessions

Event Track: Poster Session

10:00 AM - 11:30 AM MDT | Tue | Exhibit Hall Booth 3202

OVERVIEW: The future of water is here! Join the best and the brightest from AWWA's Sections. These students and young professionals won their Section poster competitions to attend and compete at ACE25.

PRESENTATIONS:

TUE043 - Understanding DBPs from Chemistry to Control

Moderator(s): [Ji Im](#)

Event Type: Educational Sessions

Event Track: Research

10:00 AM - 11:30 AM MDT | Tue | Room 406

OVERVIEW: The Microbial and Disinfection Byproducts Rules revisions expected in 2025 may significantly impact utilities that are already struggling with DBPs, chlorine residual or nitrification in chloraminated systems. This session will cover the chemistry behind the formation of currently unregulated species and how to evaluate & implement full-scale solutions tailored for DBP compliance.

PRESENTATIONS:

10:00 AM MDT

Assessing Disinfection Byproduct Formation from Reactive Intermediates Formed During Chloramine Decomposition

Recent work showed reactive nitrogen species (RNS) from chloramine decomposition were intermediates in N-nitrosodimethylamine formation. This talk will focus on RNS-mediated disinfection byproduct formation pathways in chloramine systems.

Speaker(s): Julian Fairey, *University of Arkansas*

10:30 AM MDT

Next Generation Jar Tests for Streamlined DBP Precursor Control: An Optimization Case Study

This study at the City of Warren Water Filtration Plant (22MGD) addresses disinfection by-product formation by optimizing key parameters of the coagulation process through a novel jar testing approach coupled with granular media filtration.

Speaker(s): Dane Elliott, *Stantec/Ohio State University*

11:00 AM MDT

There Is No One-Size-Fits-All When It Comes to DBP Management - A Review of 4 Tailored Solutions

DBP formation is influenced by many factors, presenting a variety of mitigation opportunities. As each water system is unique, comprehensive system analysis is key to identify DBP reduction strategies, providing data-based tailored solutions.

Speaker(s): Anne Malenfant, *CDM Smith*

TUE044 - Optimizing Utility Operations Using AI & Machine Learning

Moderator(s): Sydney Samples

Event Type: Educational Sessions

Event Track: Research

10:00 AM - 11:30 AM MDT | Tue | Room 403 - 404

OVERVIEW: Digital technologies play an important role in addressing current and future water sector challenges. Artificial intelligence (AI) and machine learning (ML) can help utilities optimize their operations and meet their community's evolving needs. This session seeks to demystify AI and ML by providing an overview on the use cases and benefits of AI, ML and Generative AI (GenAI) for optimizing utility operations. The session will end with a deep dive into a newly developed ML toolkit and utility case study.

PRESENTATIONS:

10:00 AM MDT

Quantifying the Impact of Artificial Intelligence/Machine Learning-Based Approaches to Utility Performance (WRF 5189)

Speaker(s): Prabhu Chandrasekeran, *Arcadis North America*

10:30 AM MDT

The Role of Generative AI (GenAI) for the Global Water Sector (WRF 5321)

Speaker(s): Gigi Karmous-Edwards

11:00 AM MDT

Implementing Machine Learning Process Controls to Maximize Resource Efficiency at WRRFs (WRF 5141)

Speaker(s): Jeff Moeller, *Water Research Foundation*

Moderator(s): Brian Kise

Event Type: Educational Sessions

Event Track: Infrastructure Management

10:00 AM - 11:30 AM MDT | Tue | Room 405

OVERVIEW: This session will focus on concepts of sustainability and resilience in the water sector and examine strategies for implementation. The US Department of Energy tasked Oak Ridge National Lab with assessing the potential for adding conduit hydropower across the US, and this session will offer insights into conduit hydropower opportunities and challenges for public water systems. City of Ashland developed a solution to maintain a reliable water supply that aligns with the broader goals of fiscal responsibility and environmental stewardship with their new Lake Superior water supply intake.

PRESENTATIONS:

10:00 AM MDT

Beyond Buzzwords: Making Sustainable and Resilient Water Infrastructure Commonsense and Commonplace

This presentation will refocus on the definitions, concepts, and current functions of sustainability and resilience in the water sector and examine strategies to institutionalize them for infrastructure implementation.

Speaker(s): Adam Eaton, Ardurra

10:30 AM MDT

Conduit Hydropower: Tapping Energy from Existing Water Infrastructure

Public water supply (PWS) systems provide a critical service to municipal and industrial users. These systems move a tremendous volume of water, supplying nearly 40 billion gallons per day in the US. To maintain safe water pressures, PWS conduits require the use of pressure reducing valves. These devices can be replaced with hydropower turbines to capture renewable energy generation where the energy is otherwise dissipated. This presentation will offer insight into conduit hydropower opportunities and challenges, supported by research led by Oak Ridge National Laboratory and funded by the US Department of Energy.

Speaker(s): Scott DeNeale, Oak Ridge National Laboratory

11:00 AM MDT

A 'Superior' Intake a Century in the Making: Designing Ashland's New Lake Superior Water Supply for a Sustainable Future

This presentation will explore the technical and regulatory challenges of designing Ashland's new Lake Superior water supply intake, highlighting how thoughtful planning and design can address the needs of historically disinvested communities. By carefully sizing and locating the new infrastructure, the project ensures that Ashland can sustainably manage its water resources for the next 130 years. The lessons learned from Ashland's experience are applicable to water providers and engineers in similar contexts, where balancing long-term sustainability with fiscal responsibility is essential.

Speaker(s): Katie Richardson, TYLin Greeley and Hansen Water Solutions

TUE050 - Treatment Plant Collaborative Operations

Moderator(s):

Event Type: Educational Sessions

Event Track: Distribution System Operation and Management

10:00 AM - 11:30 AM MDT | Tue | Room 407

OVERVIEW:

PRESENTATIONS:

10:00 AM MDT

Renovation of an Aging WTP in Kennewick WA: Utility Owners Approach to Doing it Right

The City of Kennewick has been operating the Columbia WTP for decades, with its last major renovation in 2004 when it was converted to membrane filtration. Over time, equipment has become worn, concrete has cracked, and coatings have flaked off. This presentation talks about what needs to be planned and implemented to make older plants keep working, especially ones as complicated as membrane facilities.

Speaker(s): Nathan Kutil, HDR

10:30 AM MDT

Who's OMAR? An Innovative Approach to Implementing At-Risk Contract Operations in a Collaborative Manner!

Soquel Creek Water District leveraged "Operations and Maintenance At-Risk" (OMAR), an innovative contracting mechanism, for engaging third-party operations contractor to run their newly built reuse facilities. This presentation will cover the procurement approach, operator input during the design, collaboration during the startup and commissioning phase and performance guarantees during long-term operations using the OMAR approach.

Speaker(s): Anup Shah, Brown and Caldwell

11:00 AM MDT

Public Private Partnership

Many water utilities are considering advanced reuse projects. However, due to the staff resource and experience limitations, it may not be feasible or efficient to immediately operate the advanced reuse plant. Such challenges can be solved by partnering with a private contractor operator that brings lessons learned from their experience in operating other assets to bring best in class practices and training to advance demonstration or pilot systems. In the case of the LA Hyperion and VNA partnership, VNA is responsible for the staffing and production, O&M, SOPs, asset management, sampling, reporting programs, operators training and shadowing.

Speaker(s): Josh Rogers, Veolia Water Technologies & Solutions

TUE051 - Developing Guidance for PFAS Treatment Pilot Testing for Permit Applications

Moderator(s): Amanda Canida

Event Type: Educational Sessions

Event Track: A Focus on PFAS

10:00 AM - 11:30 AM MDT | Tue | Room 605

OVERVIEW: A PFAS Piloting Guidance Manual for Permitting is being developed as part of a WITAF project for the AWWA. The intent of this guidance manual is to reduce uncertainty that is currently driving some primacy agencies to default to the most conservative approaches, particularly in consideration of the tight compliance schedule and health impacts from delayed PFAS treatment solution implementation. This document will facilitate sensible approaches that will reduce unnecessary monetary and time investments. This presentation will provide an overview of the contents of the PFAS Piloting Guidance Manual to arm the industry with permitting best practices that will reduce risk while protecting our water supplies for years to come.

PRESENTATIONS:

10:00 AM MDT

Developing Guidance for PFAS Treatment Pilot Testing for Permit Applications: Interactive Discussion

A PFAS Piloting Guidance Manual for Permitting is being developed as part of a WITAF project for the AWWA. The intent of this guidance manual is to reduce uncertainty that is currently driving some primacy agencies to default to the most conservative approaches, particularly in consideration of the tight compliance schedule and health impacts from delayed PFAS treatment solution implementation. This document will facilitate sensible approaches that will reduce unnecessary monetary and time investments. This presentation will provide an overview of the contents of the PFAS Piloting Guidance Manual to arm the industry with permitting best practices that will reduce risk while protecting our water supplies for years to come.

Speaker(s): Amanda Canida, Anthony Derosa, Association of State Drinking Water Administrators, Adam Feffer, Black & Veatch, William Rhoads

TUE053 - Data Driven Compliance: Meeting Regulations with Strategic Data Management

Moderator(s): Adam Butler

Event Type: Educational Sessions

Event Track: Intelligent Water

10:00 AM - 11:30 AM MDT | Tue | Room 607

OVERVIEW: This session will focus on the critical role of data management in helping water utilities meet regulatory requirements such as water quality standards and lead and copper rules. Attendees will gain an understanding of how to plan for, implement, and use data management solutions to streamline compliance

processes using various data sources – from SCADA to GIS to asset management. Presenters will share via case studies how to best use data management systems to enhance decision-making in the face of evolving regulatory landscapes.

PRESENTATIONS:

10:00 AM MDT

Building Digital Maturity: Data Management Planning and Implementation Methodologies and Use Cases – Why, What, When, and How

Organizations are facing challenges with integrating large volumes of data from various sources. There is a growing need to understand what data is available, where data sits, how data is accessed (safely and securely), who has stewardship of the data, who needs access to the data, and how much return on investment can come from data management. The objective is to review what two different utilities (Clean Water Services, Oregon and Cape Fear Public Utility Authority, North Carolina) on either end of the country are doing to solve and answer these questions.

Speaker(s): [Klint Fletcher](#)

10:30 AM MDT

All Hands on Deck: Utilizing Data Management Software to Track Verification of Over 140K Unknown Service Lines

The LCRR required water systems to submit an inventory of service line materials to their regulators by 10/16/24. The inventory can contain unknown service lines, but there are a variety of disincentives to having unknowns including notifying customers that their service line is unknown but may be lead. Reducing unknowns is a high priority for water systems in the future. After its records review, El Paso Water (El Paso, TX) had over 140,000 unknowns. This presentation will discuss how EPWater used a meter replacement program along with in-house staffing strategies and other methods to quickly and economically verify its unknowns. Details of how a software program was used to manage this data-intense process will also be discussed.

Speaker(s): [Ruben Rodriguez](#), *El Paso Water*, [Jonathan Cuppett](#), *120water*

11:00 AM MDT

Data as a Service for Drinking Water Quality Management

Located on the shores of Lake Erie, Cleveland is fortunate to have an abundant supply of fresh water. However, as the shallowest and most densely populated of the Great Lakes, Lake Erie is highly impacted by human activities resulting in a variety of water quality concerns. To address these challenges, Cleveland Water has partnered with Cleveland Water Alliance (CWA), a nonprofit water technology hub, to implement an innovative approach to data-driven drinking water management. The resulting Data as a Service (DaaS) model delivers critical insights and cuts costs for the utility while accelerating water technology innovations to the benefit of the region and the world.

Speaker(s): [Max Herzog](#), *Cleveland Water Alliance*, [Vincent McMichael Jr.](#)

TUE059 - Corrosion Control in a Post-LSL World

Moderator(s): [Simoni Triantafyllidou](#)

Event Type: Educational Sessions

Event Track: The Latest on Lead And Copper

10:00 AM - 11:30 AM MDT | Tue | Mile High Ballroom 1cd

OVERVIEW:

PRESENTATIONS:

10:00 AM MDT

Get the Ortho Out! Life after LSLs

Speaker(s): [Chris Corwin](#)

10:30 AM MDT

The Past, Present, and Future of Corrosion Control: From Langelier to Phosphates and Beyond

Corrosion control in drinking water treatment was originally focused on protection of all pipes via formation of a calcium carbonate barrier film as embodied in Langelier Saturation Index theory. To meet the narrow goals of lead and copper corrosion by-product release in the 1991 LCR, this approach was largely abandoned in favor of forming protective films on lead and copper surfaces at favorable pHs, alkalinities, and phosphate concentrations. In light of the LCRI, with a path to complete lead pipe replacement at many utilities, we could once again seek more holistic solutions for improved sustainability and infrastructure protection. We present this history and new experimental results in anticipation of a post-lead pipe era.

Speaker(s): [Frank Mazzola](#), *Virginia Tech*

11:00 AM MDT

Depress pH and Still Control Lead Corrosion? Charting a Path Through an Extensive Pipe Loop Study

Mohawk Valley Water Authority (MVWA) operates a poorly buffered water system characterized by low alkalinity and hardness. A pH of 9.5 needs to be maintained throughout the distribution system for corrosion control. A first phase pipe loop study was performed to demonstrate that orthophosphate addition at 3 mg/L was the OCCT for the MVWA water system. However, high pH also results in the formation of higher TTHMs in the treated water. A second phase pipe loop study was performed by depressing the pH to 8.2. This study illustrated that lead corrosion control, as well as release of iron and manganese from pipe scales can be managed at the lower pH, while simultaneously achieving 30% reduction in TTHM concentrations.

Speaker(s): [Amlan Ghosh](#), *Corona Environmental Consulting, LLC*

TUE062 - Funding Strategies for Capital Programs

Moderator(s): [Matthew Brown](#)

Event Type: Educational Sessions

Event Track: Legal, Financial, and Management

10:00 AM - 11:30 AM MDT | Tue | Four Seasons Ballroom 4

OVERVIEW: Leading experts from the water utility, financial, and ratings sectors will share their insights and experiences in developing and implementing strategies that produce successful capital programs. This interactive discussion will include such current and evolving topics as: various private and municipal financing tools available for capital programs; customer affordability and water utility rate structures; setting capital program priorities; multi-year planning and forecasting; the evolving use of Green Bonds and sustainable finance; and current and evolving federal programs the sector can use to meet their capital planning needs.

PRESENTATIONS:

10:00 AM MDT

Funding Strategies for Capital Programs: Interactive Discussion

Speaker(s): [Matthew Brown](#), *DC Water*, [Helen Cregger](#), *Moody's*, [Melissa Labuda](#), [Jessica Williams](#), *City of Denton, Texas*

TUE067 - Regulatory Perspectives Focusing On Water Quality & Water (Re)Use in the Rocky Mountain Region

Moderator(s): [Bud Spillman](#)

Event Type: Educational Sessions

Event Track: Water in the West

10:00 AM - 11:30 AM MDT | Tue | Room 504

OVERVIEW: This session kicks-off with a review of the collaborative effort between Denver Water, Colorado Department of Public Health and Environment (CDPHE) and the US Environmental Protection Agency (USEPA) to consider an alternative treatment approach to achieve compliance with Lead and Copper Rule. Additionally, this session will provide perspectives from two Colorado system's approach to fully utilize diverse water resources and provide addition potable water to their communities, now and into the future.

PRESENTATIONS:

10:00 AM MDT

Leveraging Collaboration – Denver Water and the Lead Reduction Program

This presentation will highlight the highly collaborative nature of Denver Water's Lead Reduction Program (LRP). Along with achieving key metrics, as set by the variance approved by the USEPA in 2020, the LRP's diverse and interdisciplinary program team (including Denver Water, Mott MacDonald, AECOM, and other key partners) has worked closely to reduce lead exposure from lead service lines in the community it serves. Timely communication, diverse perspectives, and sincere community engagement has been the basis of the success the LRP has achieved in the past four years.

Speaker(s): [Marina D'souza](#), *Mott MacDonald*

10:30 AM MDT

[Cottle Peak Water: Charting the Future of Potable Demand](#)

Castle Rock water: Shaping the Future of Potable Reuse

In 2006, Castle Rock Water (CRW) set a goal of having 75% of their water from renewable sources by 2050, identifying direct potable reuse (DPR) as a potential method to achieve their renewable goals. As CRW looked into DPR, there were no regulations set in the state of Colorado. This presentation will highlight CRW's coordination with the Colorado Department of Health and Environment (CDPHE) and their journey to completing their new Advanced Treatment Facility.

Speaker(s): [Haley Morton](#), [Burns & McDonnell](#)

11:00 AM MDT

Water System Resiliency Chiropractic - Aligning Water Resources, Water Infrastructure, & The El Paso County, CO Water Community

El Paso County, CO continues to experience rapid population growth but water providers in the county have limited water supplies. To continue to meet the municipal needs of the growing urban landscape, El Paso County water providers must maximize the efficient use and reuse of all legally and physically available water supplies. Two Proposed Projects would leverage existing and planned infrastructure to divert physically and legally available water from Fountain Creek (a Hard, High TDS, PFOS Impacted Surface Water), treat it, and get it back to water providers through the county. To achieve these objectives, change management principals are being applied by regional leaders in order to create resiliency & lasting value across the County.

Speaker(s): [John Kuosman](#), [Merrick and Company](#)

TUE070 - Financing Options for Resilient Watersheds and Water Infrastructure

Moderator(s):

Event Type: Educational Sessions

Event Track: Water Resources Planning, Protection & Management

10:00 AM - 11:30 AM MDT | Tue | Mile High Ballroom 1ab

OVERVIEW: The session showcases funding strategies and resilience upgrades to enhance a watershed or water system's ability to withstand, recover from, and adapt to natural and man-made hazards, including wildfire, wind, flood, drought, earthquake, and cyberattack. This session will cover recent case studies and share lessons learned on the many questions that arise in the aftermath of a disaster.

PRESENTATIONS:

10:00 AM MDT

Improving Water Infrastructure Resilience with USDA Water and Environmental Programs Funding

We will describe the U.S. Department of Agriculture Water and Environmental Programs (WEP) funding available for infrastructure projects, including resilience upgrades. This presentation will discuss the WEP funding for infrastructure improvements, evaluation of different resilience improvements, and additional funding that may be available.

Speaker(s): [Valdis Krumins](#), [USDA Rural Development](#)

10:30 AM MDT

Elevating Colorado Water Utility Investments in Watershed Health and Wildfire Resiliency with Innovative Financing

Colorado water providers are beginning to invest in sustainable watershed health and wildfire management strategies, such as habitat restoration and prescribed fire. To support elevated investment in these nature-based solutions, WaterNow Alliance, One Water Econ, and The Water Center at Penn developed the Colorado Wildfire Resilience Financing Dashboard—a tool for water providers that evaluates the feasibility of financing watershed health practices and helps make a compelling business case for these investments. This presentation will be an interactive, real-time demonstration of the decision tool. Presenters will solicit audience participation to highlight the tool's practical applications and user-friendly interface.

Speaker(s): [Caroline Koch](#), [WaterNow Alliance](#)

11:00 AM MDT

Rebuilding a Climate Resilient Lahaina after the Wildfires

In August 2023, the historic town of Lahaina on the island of Maui was struck by a fast-moving wildfire that killed over 100 people and destroyed 2,200 structures. Although rarely reported but essential for the recovery effort to begin is the repair of the damaged water system. The study evolved from a curious question on the viability of a dual system to the key decision on how the water system of Lahaina should be rebuilt. As many utilities across the US are facing increasing threats from wildfires, this presentation will share lessons learned on the many questions that arise in the aftermath of a disaster. From water quality testing to damage assessments and rethinking water distribution as a single or dual water system.

Speaker(s): [Inge Wiersema](#), [Carollo Engineers](#)

TUE073 - Regional Approaches to Building Strong Partnerships and Solidifying Successful Interagency Reuse Projects

Moderator(s): Shannon Spurlock

Event Type: Educational Sessions

Event Track: Reuse

10:00 AM - 11:30 AM MDT | Tue | Room 503

OVERVIEW: This presentation is based on findings from WRF 5250 and will define the elements of successful multi-utility water reuse programs and how to create practical guidance and related toolkits to help agencies work together more effectively. These practitioner-informed outcomes will help agencies overcome their differences and related challenges to forging successful water reuse partnerships, by providing advice, examples, techniques, and ongoing support so they can collectively increase the speed, effectiveness, and scale with which they implement sustainable water reuse projects. Project team members along with invited utility partners look forward to sharing learnings with the broader water community.

PRESENTATIONS:

10:00 AM MDT

Regional Approaches to Building Strong Partnerships and Solidifying Successful Interagency Reuse Projects

Speaker(s): Shannon Spurlock, Pacific Institute, Dr. Robert Raucher, Rick Warner

TUE074 - Chlorine Dioxide in Drinking Water - Benefits, Considerations, and Utility Experiences

Moderator(s): Ashley Pifer

Event Type: Educational Sessions

Event Track: Water Quality Challenges

10:00 AM - 11:30 AM MDT | Tue | Mile High Ballroom 4ab

OVERVIEW: This session discusses the benefits and considerations for chlorine dioxide use in drinking water, with case studies from utilities using chlorine dioxide to meet different treatment and distribution system water quality management goals. This session will help utilities evaluate the potential application of chlorine dioxide in their systems.

PRESENTATIONS:

10:00 AM MDT

When, Where, and Why to Use Chlorine Dioxide

This presentation introduces chlorine dioxide chemistry and its uses for drinking water treatment, primary disinfection, and control of opportunistic pathogens in premise plumbing.

Speaker(s): Ashley Pifer, Half, Alan Burke, International Dioxide, Inc.

10:25 AM MDT

Chlorine Dioxide for Manganese Oxidation

This presentation discusses chlorine dioxide use at 8- and 12-MGD surface water treatment plants, including selection and optimization of dosing, and considerations for manganese oxidation ahead of membranes.

Speaker(s): Matt McDougald, Opelika Water

10:35 AM MDT

Optimizing Chlorine Dioxide Use at a Large Water Treatment Plant

Beaver Water District has used chlorine dioxide for over 12 years at three treatment plants with a total capacity of 140 MGD. This presentation discusses application strategies, chlorite control, and using chlorine dioxide as a wholesaler.

Speaker(s): Darryl Fendley, Beaver Water District

10:45 AM MDT

Using Chlorite for Nitrification Control

This presentation describes Louisville Water's research on chlorite for nitrification control and successful implementation of chlorine dioxide in their 60-MGD water treatment plant in 2023.

successful implementation of chlorine dioxide in their 60 MGD water treatment plant in 2020.

Speaker(s): Eric Zhu, Louisville Water Company

10:55 AM MDT

Bench-Scale Comparison of Shelf-Stable Chlorine Dioxide, Free Chlorine, Permanganate for Drinking Water Oxidation

This presentation compares chlorine dioxide from shelf-stable solutions with chlorine and permanganate for DBP precursor, algal toxin, taste and odor compound, and manganese oxidation in bench tests on two surface waters in warm and cold seasons.

Speaker(s): Baris Kaymak, CDM Smith

11:05 AM MDT

Panel Discussion

Speaker(s): Ashley Pifer, Half, Alan Burke, International Dioxide, Inc., Matt McDougald, Opelika Water, Darryl Fendley, Beaver Water District, Eric Zhu, Louisville Water Company, Baris Kaymak, CDM Smith

TUE075 - Building a Culture of Communication: Strategies for Transparency and Engagement

Moderator(s):

Event Type: Educational Sessions

Event Track: Water Utility Management

10:00 AM - 11:30 AM MDT | Tue | Mile High Ballroom 4cd

OVERVIEW: Effective communication is the foundation of trust and success in addressing critical water management issues, from lead service line replacements to water reuse projects and major capital investments. This presentation explores strategies to foster a culture of communication within your organization, emphasizing transparency, accountability, and employee engagement. Learn how defining roles and responsibilities can enhance internal collaboration and ensure consistent messaging to stakeholders.

PRESENTATIONS:

10:00 AM MDT

Building Trust from Within: Aurora Water's Journey to Transparent Communication and Community Confidence

Providing drinking water, wastewater collection, and stormwater management for the third largest city in Colorado, Aurora Water is engaged in numerous initiatives that are drawing public attention. These include the potential construction of a large mountain reservoir, innovative water purchases, social challenges that made national headlines, and the planned implementation of direct potable reuse. This abstract explores the critical importance of fostering strong internal communication and promoting honest conversations within and outside of water utility organizations.

Speaker(s): Shonnie Cline, Aurora Water

10:30 AM MDT

Mastering the Maze: Streamlining Communication in the LCRR Labyrinth

The Lead and Copper Rule Revisions (LCRR) have brought forth not only intricate technical requirements but also heightened community involvement. Navigating this landscape involves effectively communicating with customers, ensuring water quality, coordinating with internal leadership, and engaging with media and elected officials. This presentation unveils strategies to streamline communications, to support proactive and transparent messaging for LCRR programs.

Speaker(s): Kristi Ross, HDR, Natalie DeRoock, Tucson Water

11:00 AM MDT

Whose Role Is It Anyway? Effective Communications with Customers and Setting Interdepartmental Roles for a Successful LCRI Program

Successfully implementing communications strategies to comply with the Lead and Copper Rule Revisions and leveraging the successes for the LCR Improvements is an ongoing goal for utilities. Effective internal staff management to optimize the execution of external facing communications and maintaining regulatory compliance and transparency is the focus. Utility experience has shown that a key component is identifying staff structure roles and understanding the value of strong internal communications to ensure a unified response to regulatory challenges. Attendees will learn about three case studies that built unique outreach tactics, resulting in new touch points with customers, including often-marginalized Environmental Justice communities.

Speaker(s): Anissa Rafeh, Hazen and Sawyer

TUE080 - Kamstrup Sponsor Session - Beaverton's Smart Water Revolution: How AMI is Driving Efficiency, Savings, and Sustainability

Moderator(s):

Event Type: Educational Sessions

Event Track:

10:00 AM - 11:30 AM MDT | Tue | Room 601

OVERVIEW: Beaverton, Oregon, is transforming its water management with advanced metering infrastructure (AMI), unlocking real-time data, operational efficiency, and millions in cost savings. By choosing Kamstrup's compact, ultrasonic meters, the city avoided a \$3M infrastructure overhaul while accelerating their AMI rollout. With embedded acoustic leak detection and 26x daily reporting, Beaverton now pinpoints leaks faster and optimizes water conservation despite rapid growth and rising demand. Join us for a panel discussion with the team from Beaverton Water as they share their journey, lessons learned, and the digital insights shaping their utility's future.

PRESENTATIONS:

10:45 AM MDT

Beaverton's Smart Water Revolution: How AMI is Driving Efficiency, Savings, and Sustainability

Speaker(s): Chad Lindberg, Beaverton Water

CRT3 - Leadership in an Era of Workforce, Economic and Infrastructure Challenges

Moderator(s):

Event Type: Educational Sessions

Event Track: Public Officials Training

01:00 PM - 05:00 PM MDT | Tue | Room 303

OVERVIEW: Public Officials Course are an additional cost.

Today's water utility navigates complex, interrelated challenges that require local solutions and informed leaders. This interactive session explores solutions for filling essential jobs, addressing aging systems, and assuring sustainable funding.

PRESENTATIONS:

PST02 - Tuesday Poster Session

Moderator(s):

Event Type: Educational Sessions

Event Track: Poster Session

01:30 PM - 03:00 PM MDT | Tue | Exhibit Hall Booth 3202

OVERVIEW: Take advantage of this great opportunity to interact directly with presenters at the poster sessions being held in the Exhibit Hall. The poster presenters will be present for the full duration of each poster session to provide attendees with the opportunity for in-depth discussions about their topic.

PRESENTATIONS:

01:30 PM MDT

Enhancing Large Water Meter Infrastructure

This is a current project in progress in the Washington Suburban Sanitary Commission (WSSC). The presentation aims to share lessons learned during planning and implementation of such a project.

Speaker(s): Asif Noor, WSSC

01:30 PM MDT

Battle of the Brines

Presentation will describe the poly-pigging operations that assisted in restoring flow to a 10" diameter force main that had become constricted down to 1". It will discuss the obstacles that were faced, how they were overcome and the subsequent research into the source of the problem.

Speaker(s): Nicholas Robertson, Kimley-Horn

01:30 PM MDT

PRVs: Knowledge, Issues & Solutions

Pressure Reducing Valves and the internal functionality. Preventative maintenance is essential on this asset, and operations as well as maintenance is a key component to this training.

Speaker(s): Nick Martinez, Soval

01:30 PM MDT

Transforming Water Utilities through AI-Driven Predictive Maintenance

Explore how predictive maintenance, powered by AI and ML, is transforming water utilities by tackling issues like aging infrastructure, unexpected downtime, and rising costs. This session dives into how condition monitoring predicts equipment failures, optimizes maintenance schedules, and extends asset life. Hear real-world examples of how utilities are using this technology to improve operations, reduce costs, and meet sustainability goals. Join us to explore how AI-driven predictive maintenance can help your facility run more efficiently.

Speaker(s): Kelsey Doughten, AssetWatch

01:30 PM MDT

Road to Performing "Valid" Hydrant Flow Tests with "Correct" Pairing and "Safer" Procedures

The City of Cincinnati has ~10,500 hydrants, which were divided into four Phases for Hydrant Flow (HF) testing. From 2021 to 2023, Greater Cincinnati Water Works (GCWW) tested hydrants in three Phases using specialized Contractors, following National Fire Protection Association (NFPA) 291 and AWWA Manual of Water Supply Practices M17 protocols. GCWW evaluated the results and methods to improve data quality in each Phase. This effort improved the pairing process by considering hydraulic proximity, pipe diameter, and location of the hydrants. Additionally, GCWW tested a Hose Monster® device, producing FF@20 data similar in accuracy to the swivel diffuser while increasing the tests' safety.

Speaker(s): Patricio Pinto, Greater Cincinnati Water Works

01:30 PM MDT

Digital Twins, the Real Time Monitoring of Water Treatment and Reclamation Processes for Car Washes

Barr Engineering Co. built a real time monitoring data pipeline for water treatment and reclamation processes for a car wash manufacturer. This enabled rapid prototyping built to water quality metrics and predictive load planning. This presentation will include the steps used to create the digital twin pipeline, the digital signal processing used, and the predictive solutions developed. Barr will also highlight its future sights on integrating the real time streams with more advanced waste water treatment software.

Speaker(s): Carter Hughes, Barr Engineering

01:30 PM MDT

AI Developments in Water Management

There are certain aspects of the AI revolution we simply cannot ignore, and there's a lot to unpack when we consider the implications of water usage and wastewater discharge. The most pressing water challenges are already quite obvious - and across the next decade, they likely will become more severe. KETOS CEO Meena Sankaran will discuss why organizations must assess and plan for change processes that involve both methodologies and business models to help transform the way people think about water through smart water management for distribution, safety, operational efficiency and conservation on a global scale while keeping risk management and public health as a key priority.

Speaker(s): Meena Sankaran, KETOS

01:30 PM MDT

Using AI to Reduce Reuse Confusion

To successfully implement a water reuse program, utilities need to have access to both the applicable regulations and information about the quality of their source water for reuse. Large Language Models (LLMs) can assist with both these critical tasks. By leveraging this technology, utilities can streamline the process of staying informed about regulations and efficiently organize essential water quality data. Our presentation demonstrates how integrating innovative technology into problem-solving approaches can facilitate informed decision-making and compliance, showcasing a potential future that can be broadly applied in the drinking water field.

Speaker(s): Andrew Goldberg, Brown and Caldwell

01:30 PM MDT

Part 1: Challenging the Process – DWSD's Journey with Progressive Design-Build

Dominion Water and Sanitation District (DWSD) has been planning for a new Water Reclamation Facility for over a decade, with the conceptual design and delivery of the plant significantly changing to meet the needs of DWSD and its customers. With an infusion of monies from the American Rescue Plan Act and the need to bring the facility on-line by 2027, DWSD in collaboration with PCL

made significant changes to the delivery of the plant with a unique approach to progressive design build. This is the first installment of a 4-part presentation series chronicling the life cycle of the Chatfield Basin WRF Project and will discuss approach to permitting, funding, and public approval.

Speaker(s): Pamela Grover, Dominion Water and Sanitation District

01:30 PM MDT

Synergies in St. Petersburg: Aging Pipes and Collaborative Solutions

Downtown St. Petersburg, Florida faces challenges with its aging water infrastructure. It is the oldest area of the City's water distribution system with a significant amount of 2- to 12-inch cast iron pipe, much of which dates to the early 1900s. Some of the potable water infrastructure has reached the end of its anticipated useful life and needs to be replaced. To address this challenge, the City adopted a progressive design-build approach incorporating Risk-Based and Capacity Assessment Hydraulic Modeling, to prioritize replacement of the water mains. This initiative aims to replace 75% of high-risk water lines over five years, demonstrating a strategic effort in asset management and resiliency.

Speaker(s): Tom Cross

01:30 PM MDT

Enhancing Hydraulic Model Calibration and Operational Insight with Multi-Hydrant Pressure Monitoring

An accurately calibrated hydraulic model is essential for identifying and sizing system improvements to enhance resilience, water age, and quality. Traditional hydrant flow tests use one flow hydrant and one observation hydrant, but this method can lead to inaccurate model calibration. By using multiple observation hydrants with pressure loggers, deeper insights into the distribution system are achieved. A case study in Alamogordo showed that this method allowed for precise identification of system issues and improved model accuracy. The presentation will discuss the benefits and methodology of this approach.

Speaker(s): James Kim, CDM Smith

01:30 PM MDT

Effective, Efficient, Easy: CFD Modeling to Optimize Rapid-Mix and Flow Split Design

Achieving equal flow distribution in water and wastewater design is essential for consistent treatment quality, but it's challenging to confirm during the design phase. Engineers often rely on experience, which can lead to risks and flaws during operation. To mitigate these risks, using advanced tools like Computational Fluid Dynamics (CFD) modeling is crucial. CFD helps simulate fluid flow and optimize designs by identifying areas of inefficiency and testing various configurations. A case study at Central Arkansas Water shows how CFD modeling improved flow distribution and operational efficiency, ensuring more reliable water treatment solutions.

Speaker(s): Ki Yeo, Hazen and Sawyer

01:30 PM MDT

Small Town Serves Big Tech

The Town of Clarksville, VA owns and operates a 1.0 MGD water treatment plant constructed in 1952. The Town of Clarksville recently received a new customer in a data center that plans to use a peak of 700,000 gpd. This presentation will discuss how the overall reliability of the Town's water treatment plant and critical utilities were evaluated to discover potential "showstoppers" for the data center connecting to Town utilities. Five engineers from different disciplines identified and evaluated assets including the raw water pump station, water treatment plant, and aerial pipelines along the US 58 Business Bridge. The presentation will discuss how each asset's condition was evaluated and what the recommended mitigation measures were.

Speaker(s): Drew Arnold, Dewberry

01:30 PM MDT

Copper? I Hardly Know Her! Addressing Copper Discharge Exceedances at the Grand Canyon

The EPA is ratcheting down copper discharge limits for wastewater treatment plants (WWTPs) to protect aquatic health. The source of copper is typically premise plumbing in the water distribution system. Many small systems are challenged to reduce copper corrosion in the water distribution system to a level that meets stringent WWTP discharge permit limits even though their distribution system meets the maximum contaminant limit for copper. This presentation will provide a holistic approach to evaluating copper corrosion control for small systems, including a case study from the North Rim of Grand Canyon National Park. A roadmap will be presented to assist other small systems with evaluating copper corrosion control strategies.

Speaker(s): Natalie Brooker, HDR, Sean Schumacher, HDR Engineering, Inc.

01:30 PM MDT

I'm a Small, Lonesome System and I Need Repair. I Don't Have a Whole Village to Help Me, so How Can I Avoid Falling Into Despair?

The poster discusses the story behind the design and build of a portable well station that provides redundancy to a small system and allows a utility to take a pump station out of service to perform upgrades and maintenance tasks.

Speaker(s): Anna Kazasi, Virginia/Maryland American Water

01:30 PM MDT

Sleeping with SCADA – A Result of Managing Operational Needs Amid a Lack of Available Qualified Staff

This is a presentation on my experience in the management of small water systems and the inability to hire qualified operators. Many times management and councils don't understand what operations go through to keep systems running, and as there is an extreme exodus between the old and new joining the industry it is of huge importance that they work together to maintain our public water systems and public health. In doing so we can not forget the health of our operators that work day and night to make sure there is always quality water on tap.

Speaker(s): *Sabrina Sims, City of McCall*

01:30 PM MDT

Applying One Water Strategies to Mitigate PFAS Risks

The water industry's approach to PFAS management is likely to change significantly over the course of the next few years in response to evolving health studies and federal regulations. Especially impactful are the drinking water MCLs, the hazardous substance designation, and new monitoring requirements in NPDES permits. Approaching PFAS holistically, by tracking movement of PFAS between different environmental media, will help to better identify sources of PFAS and the most logical place to target to break the PFAS cycle.

Speaker(s): *Gerald Duncan, Brown and Caldwell*

01:30 PM MDT

Interconnected Present and Future Water for Central Texas

Evaluation of Central Texas entities in the corridor between Austin and San Antonio and how they are linking together water systems and regional water supplies in prosperity and need in the current fast growth environment.

Speaker(s): *Mark Graves, STV*

01:30 PM MDT

Let's Meet at the Watering Hole: Partnerships for Improving Source Water Protection Between Agriculture and Municipalities

Uniting the two largest water users in meaningful dialogue. While both sectors have differing conservation messaging and best management practices based on usage, during times of drought, they tend to point the finger at each other as the cause. How do we get past that?

Speaker(s): *Jennifer Elms, Odyssey Engineering Group*

01:30 PM MDT

Characterizing DOC Sources in Greater Montreal and Their Impact on Water Quality for Drinking Water Supply

Climate change and anthropogenic pressures are driving the brownification of surface waters, increasing natural organic matter (NOM) levels in drinking water sources. This increased NOM levels challenges drinking water treatment plants, increasing costs and compromise the ability to meet disinfection by-product (DBP) regulations. This study uses machine learning models to predict dissolved organic carbon (DOC) levels at a drinking water intake located at the confluence of two rivers, where the mixing of distinct water sources creates unique treatment challenges. By integrating climate change data, the model will help municipalities anticipate future DOC trends and optimize water treatment processes.

Speaker(s): *Evelyne Pouliot, Polytechnique Montreal*

01:30 PM MDT

Assessing Solar Technology Adoption for Climate Change Resilience: Insights from Remote Sensing

Water and energy systems are closely interdependent, even at the household level, making it critical to manage climate change impacts on electrical power systems to ensure water quality and access. Droughts and heatwaves increase wildfire risks, which can damage power lines and cause blackouts, putting households that rely on electric pumps and energy to heat water at risk. The adoption of renewable energy, especially solar technology with battery storage, helps reduce grid strain and provide backup during blackouts. Remote sensing technologies, using aerial imagery and deep learning, track rooftop solar installations and offer vital data for solar energy deployment, enhancing climate resilience in both energy and water systems.

Speaker(s): *Kenya Creer, DCSE*

01:30 PM MDT

Selecting GCMs For Use In Urban Hydrologic Assessments

Local rainfall and temperature patterns are expected to change in the future as the global climate changes. Scientists and engineers involved in urban water management need practical methods to choose from among the wide range of projections provided by computer models. These scientists and engineers also need methods to translate these projections to time scales that are most useful for planning and management of urban watersheds. This presentation outlines specific steps to guide these decisions and provides an example of how to apply these steps to model results and analyze measured data from a location in southeastern Pennsylvania, USA.?

Speaker(s): *Achira Amur, Villanova University*

01:30 PM MDT

Resilient, Sustainable, Affordable Water Supply Planning Under Climate Change Challenges for Utilities in Fast Growing Communities

This work provides an in-depth look at the IRP's development process, the application of scenario planning and MCDA, the strategies for adaptive management, and the CAP development process, offering insights into creating robust, long-term water resource strategies in a dynamic environment.

ensuring margins and creating resiliency long-term water resource strategies in a dynamic environment. The Integrated Resources Plan for the Elsinore Valley Municipal Water District ensures a sustainable future water supply by evaluating water demands, supply reliability, and planning with scenarios and Multi-Criteria Decision Analysis. The plan includes adaptive management and integrates a Climate Action Plan to balance water reliability with emission reduction goals.

Speaker(s): Ghina Yamout, CDM Smith

01:30 PM MDT

Improving Water Reuse Risk Management and Preparedness: A Meta-Analysis of Water Reuse Resilience Definitions and Measurements

Improving water reuse resilience is crucial to water quality and access, as natural and anthropogenic hazards increase in frequency and intensity. Vulnerable aspects of water reuse infrastructure and sustainable approaches to build resilience still need to be identified. To that end, we conducted a meta-analysis and categorized resilience definitions and measurements based on five properties: robustness, rapidity, redundancy, resourcefulness, and adaptability. We found a lack of water reuse-specific resilience measurements, as well as trade-offs between resilience and sustainability. This presentation discusses sustainable paths forward for building resilience in water reuse systems while improving utility risk management and preparedness.

Speaker(s): Isabella Cobble, University Of Colorado Boulder

TUE081 - Advanced and Conventional Treatment

Moderator(s):

Event Type: Educational Sessions

Event Track: Advances in Water Treatment

01:30 PM - 04:30 PM MDT | Tue | Room 401 - 402

OVERVIEW: This session focuses on advanced and conventional treatment plants ranging from project delivery methods to filter optimization to ozone and UV.

PRESENTATIONS:

01:30 PM MDT

PAA as a Pretreatment Alternative to Free Chlorine for DBP Reduction: Full Scale Plant Trial Results

The McKeesport WTP is a 10 MGD conventional WTP, owned by the Municipal Authority of Westmoreland County (MAWC) and located in McKeesport, PA. MAWC has initiated several treatment measures to decrease levels of DBPs, but changing source water quality, namely increased TOC concentrations and higher temperatures, have been an issue recently. To combat this, MAWC is evaluating the seasonal use of peracetic acid (PAA) as a pre-oxidant in place of chlorine. PAA is a strong oxidant that exists in equilibrium with acetic acid, hydrogen peroxide, and water, and has been granted NSF 60 approval for water treatment.

Speaker(s): Sarah Kocak, Municipal Authority Westmoreland County

02:00 PM MDT

FilterMAP – The Road to Optimized Filter Performance

Austin Water (AW) has bolstered its monitoring and assessment of filter performance at its water treatment plants (WTPs) with the Filter Monitoring and Assessment Program (FilterMAP), an innovative data-driven approach for evaluating filter performance. This presentation provides a framework that utilities can implement to monitor, troubleshoot, and optimize their filters. It also includes examples from Austin Water's experience with implementation of the FilterMAP.

Speaker(s): Joseph Grano, Austin Water

02:30 PM MDT

Optimizing Ozone Treatment for Taste and Odor Control While Expanding to 120MGD

This presentation presents the story of the ozone treatment design approach for a water treatment plant (WTP) expansion from 86MGD to 120MGD. The WTP has historically experienced taste and odor challenges associated with algae growth the source water and terminal reservoirs. Existing facility operation constrained ozone doses well below the design capacity of the ozone system, posing risks of breakthrough of taste and odor compounds. Bench-scale and full-scale testing was performed to optimize ozone performance while expanding capacity to 120MGD.

Speaker(s): Roger Arnold, Hazen and Sawyer

03:00 PM MDT

Monitoring the Dynamic Water Quality of UV AOP Systems

The addition of sodium hypochlorite upstream of UV/chlorine AOP systems treating RO permeate results in a dynamic water quality that presents a unique challenge with regards to the measurement of a UVt and free chlorine residual that is representative of that entering the UV reactor. For UV/Chlorine and UV/hydrogen peroxide AOPs the combined processes of photolysis, advanced oxidation and breakpoint chlorination reactions result in a continuous increase in UVt as water flows through the UV reactor. If not properly accounted for, this instability can result in situations where the

system is providing a level of treatment that is significantly different from what is indicated by the online measurements and UV AOP control algorithms.

Speaker(s): Bryan Townsend, Black & Veatch

03:30 PM MDT

Progressive Design-Build Delivery Model Yields Innovative Design of Advanced Water Treatment Plant

The innovative benefits realized in the design and development of Los Angeles' largest potable reuse advanced water treatment facility through utilization of the progressive design-build delivery model will be reviewed. Testing infrastructure that was constructed and operated to assist with design development, as well as critical constructability input will also be discussed.

Speaker(s): Larry Schimmoller, Jacobs

04:00 PM MDT

Coal & Coconut Carbon (GAC) Arsenic Leaching Study

Coal and Coconut raw material based Granular Activated Carbons (GAC) have become widely used throughout the industry, and coal carbons are currently one of the leading media used for PFAS removal. When designing a treatment plant, there are many considerations for permit approvals, and impacts on the water quality after adding GAC treatment is one of them. It has been found that coal-based carbons run the risk of producing high levels of arsenic concentrations during the backwash and initial start-up of the GAC media. In this session, we will first go over what are the possible causes of high arsenic concentration levels and why it would differ from one manufacturer to another.

Speaker(s): Sara Maloney, AqueoUS Vets

TUE083 - Fresh Perspectives on Particle Removal

Moderator(s):

Event Type: Educational Sessions

Event Track: Research

01:30 PM - 03:00 PM MDT | Tue | Room 504

OVERVIEW: These presentations explore innovative approaches to improving particle removal from drinking water. The first study focused on retrofitting dissolved air flotation (DAF) into direct filtration systems, showing significant improvements in filter runtimes, especially with DAF in filter columns. The second examined reverse osmosis (RO) membranes, highlighting their high pathogen removal efficiency and advocating for improved integrity testing to reduce redundant treatment steps. The third investigated machine learning models to predict membrane fouling, enabling more efficient cleaning schedules and reducing costs. Together, they highlight advancements in filtration technology and operational optimization.

PRESENTATIONS:

01:30 PM MDT

Examination of Alternative Dissolved Air Flotation (DAF) Approaches for Direct Filtration Plants

The ongoing drought and climate change urge utilities to prepare for intermittent particle loading and algal bloom events that may severely reduce filter runtimes during direct filtration. In this work, we explored various innovative approaches for retrofitting dissolved air flotation (DAF) into existing processes of a direct filtration pilot-scale facility. Pilot tests were designed to evaluate DAF retrofit under various turbidity and coagulant/flocculant conditions to offer design and operational guidelines to utilities and consultants for proper DAF incorporation into existing treatment plants.

Speaker(s): Bilal Abada, CDM Smith Inc

02:00 PM MDT

Establishing Pathogen LRVs using Marker-Based RO Integrity Testing

Our study investigates whether ionic indicators can be used to develop a direct integrity testing method for RO membranes. Study features include using MS2 bacteriophage, sulfate, and strontium to compare rejection performance at the Wichita Falls WTP; the first study of its kind to research this topic using a full-scale RO system. This is an updated presentation with complete and final data, including results with aged, new, and impaired membrane data, and a draft basis to use chemical surrogates as a means of RO direct integrity testing.

Speaker(s): Eric Kong, Freese and Nichols

02:30 PM MDT

A Machine Learning Approach for Prediction of the Change in Transmembrane Pressure of Ultrafiltration Membranes

Graduate research conducted by Isabel Medeiros of UNH, advised by Dr. James Malley (UNH) and Irina Zaikina (PWNT) using both pilot and full-scale drinking water data from the PWN-Heemskerk facility. This work is focused on exploring the application of machine learning methods including Random Forest and Recurrent Neural Network Long Short-Term Memory to predict how

transmembrane pressure increases as a function of key water quality and operational parameters. A successful model would optimize the backwashing frequency and cleaning in place processes that are currently conducted based on facility operators' expertise, reducing the operation and maintenance costs for the full-scale facility.

Speaker(s): [Isabel Medeiros](#), [UNH](#)

TUE084 - University Forum

Moderator(s):

Event Type: Educational Sessions, International

Event Track: Research

01:30 PM - 03:00 PM MDT | Tue | Mile High Ballroom 1ef

OVERVIEW:

PRESENTATIONS:

TUE086 - Utility Case Studies: Digital Twins of Water Distribution Systems

Moderator(s): [Kedric Szana](#)

Event Type: Educational Sessions

Event Track: Infrastructure Management

01:30 PM - 03:00 PM MDT | Tue | Room 405

OVERVIEW: This session is all case studies presented by Utilities who have significant experience with the implementation and usage of Digital Twins of water distribution systems. The journey and usage of Digital Twins for Water Distribution Systems of three utilities are presented. Water Quality and operational forecasting in water distribution systems is detailed. Lessons learned during the digital journey of these utilities are covered.

PRESENTATIONS:

01:30 PM MDT

City of Guelph's Journey Towards a Digital Twin

Imagine working in a water utility where at a click of an online link you have access to the whole water treatment and distribution system virtually. This is the future of smart technology integration using digital twins for water utilities. A digital twin can be described as a copy of the complicated model which can allow employees to play with the system, without being concerned about breaking something or causing harm to the water supply.

Speaker(s): [Jonathan Hasson](#), [Aquasight](#), [Rob Whitson](#), [Aquasight](#)

02:00 PM MDT

Colorado Springs Utilities' Path Towards Continuous Water Quality Modeling

Colorado Springs Utilities (Utilities) has developed a near-real-time SCADA-connected digital twin of the finished water distribution system. Improvements to upgrade the functionality of the FWDS digital twin are underway by Utilities. To that end, an investigation of current technologies and development of a vision for the digital twin was conducted. This presentation will present: 1) a summary of the current condition of Utilities' digital twin, 2) Utilities' evaluation of distribution system digital twin software, and 3) the long-term vision for the digital twin at Utilities. This presentation will provide timely information for the utility industry as it seeks to maximize the benefits of digital twins.

Speaker(s): [Renn Hankawa](#), [Colorado Springs Utilities](#)

02:30 PM MDT

Development of Real-Time Water Age and Chlorine Residual Simulation Tool in a Regional Water Agency's Distribution System

Metropolitan Water District of Southern California (Metropolitan) is utilizing its hydraulic model to develop a real-time tool to simulate water age as well as chlorine residual within its distribution system. The presentation will provide background about Metropolitan's hydraulic model, describe the project approach, give an overview of the architecture of the live model solution (e.g., how boundary conditions and demands are connected to the hydraulic model), and how model simulation results are presented in a user-friendly interface and utilized to make operational adjustments.

Speaker(s): [Saurabh Shekhar](#)

TUE088 - Managing Breaking Water Mains without Breaking the Bank

Moderator(s): [Dan Ellison](#)

Event Type: Educational Sessions

Event Track: Infrastructure Management

01:30 PM - 04:30 PM MDT | Tue | Room 603

OVERVIEW: This session provides an overview of water main rehabilitation methods. The focus is on case studies which illustrate how utilities have used various linings, pipe bursting, cathodic protection, and other methods to extend the lives of old mains.

PRESENTATIONS:

10:00 AM MDT

Beaverton's Smart Water Revolution: How AMI is Driving Efficiency, Savings, and Sustainability

Speaker(s): [Troy Pierson](#), *Beaverton Water*

01:30 PM MDT

Overview of the Session

Speaker(s): [Dan Ellison](#), *HDR Engineering, Inc.*

01:35 PM MDT

Rehabilitation Basics

An overview of common methods, selecting a method, and supplying water during rehabilitation

Speaker(s): [Chris Macey](#), *AECOM*

02:00 PM MDT

Using Pipe Bursting as a Primary Method of Main Replacement

Case studies will be presented in which utilities have employed pipebursting as a primary method of main replacement

Speaker(s): [George Mallakis](#), *TT Technologies, Inc.*

02:20 PM MDT

WaterOne Case Study

Speaker(s): [Matthew Carter](#), *WaterOne*

02:40 PM MDT

Omaha MUD Case Study

Speaker(s): [Jared Svagera](#)

03:00 PM MDT

Denver Water's Approach to Water Main Renewal

For decades, Denver has used a variety of methods for water main renewal, including lining and replacement. This presentation discusses how specific choices are made.

Speaker(s): [Jeremy Ross](#), *Denver Water*

03:30 PM MDT

Innovations in Rehabilitation at East Bay Municipal Utility District

This presentation discusses how a large utility has expanded its program, using innovation to obtain efficiency and maintain quality

Speaker(s): [David Katzev](#), *East Bay Municipal Utility District*

04:00 PM MDT

What's New in Water Main Rehabilitation

A high-tech method of rehabilitation will be discussed, involving carbon fiber and spray-applied resin (i.e., "Manufactured-in-Place Composite Pipe")

Speaker(s): [Tom McAndrew](#), *SippTech LLC*

Moderator(s): [Celine Hyer](#)

Event Type: Educational Sessions

Event Track: Distribution System Operation and Management

01:30 PM - 03:00 PM MDT | Tue | Room 406

OVERVIEW: This session focused on ways to improve the resilience and durability of water mains. Various strategies will be shared, including material evaluation of failed metallic water mains, simple practices to minimize corrosion in water and wastewater facilities, and damage mitigation strategies for long-term resilience. The session emphasizes the importance of leveraging data and implementing proactive measures to ensure the long-term performance of water mains.

PRESENTATIONS:

01:30 PM MDT

Leveraging Data by Performing Material Evaluation on Failed Metallic Water Mains

Metallic pipe failures occur due to a variety of factors related to the pipe material and its environment. These factors can lead to pipes requiring replacement before the fulfillment of their life expectancy. However, with adequate information, better life expectancies can be determined, or additional site-specific measures can be implemented.

Speaker(s): [Blen Jimma](#), *Washington Suburban Sanitary Commission*, [Rosanna La Plante](#), *WSSC Water*

02:00 PM MDT

Minimize Corrosion in Your Water and Wastewater Facilities with These Simple Practices: Presented with Case Studies

The presentation addresses three case studies from three water utilities across the U.S. Each case study showcases the simple mistakes in design or operation that resulted in severe corrosion damage and loss of service. The water utility's approach to mitigate the corrosion issues and prevent future problems is also discussed. The work is co-presented by HDR and San Diego County Water Authority.

Speaker(s): [Mersedeh Akhondan](#), *HDR Engineering, Inc.*, [Brian DiLuca](#), [Mike Knowles](#)

02:30 PM MDT

How to Mitigate Damage to Water Transmission Mains For Long-Term Resilience

Pipeline owners face competing priorities for infrastructure assessment, rehabilitation and replacement. The reality of finite budgets and availability for pipeline shutdowns can result in limited opportunity to enact capital projects. Preventing damage to buried pipelines can extend asset life and reduce the need for capital projects. Examples and case studies from hundreds of miles of pipeline assessment will include managing operating pressure, eliminating pressure transients, slowing corrosion, and limiting contractor strikes.

Speaker(s): [Chandler Carpenter](#), *Black and Veatch*

TUE090 - Treatment Plant O&M Topics

Moderator(s):

Event Type: Educational Sessions

Event Track: Distribution System Operation and Management

01:30 PM - 04:30 PM MDT | Tue | Room 501 - 502

OVERVIEW:

PRESENTATIONS:

01:30 PM MDT

Life's Little Instruction Book for Operating PFAS Water Treatment Facilities

As engineers, utilities, and contractors work to construct PFAS treatment facilities, it's becoming evident that some operational aspects aren't well documented. This paper presents a firsthand instruction book for lessons learned through operating bench, pilot, and full-scale ground and surface water PFAS treatment facilities, based on input from utility operators in CA, CO, MN, IL, and MA, designers from Stantec Inc., and researchers from Johns Hopkins University. Many lessons learned pertain to residuals and waste management and handling of PFAS. Lessons outlined here provide essential insights for designing, commissioning, and operating PFAS treatment systems in a way that is operator friendly and adaptable.

Speaker(s): [Ryan Capelle](#)

02:00 PM MDT

Optimization of Sludge Management Through Effective Operation Methods and Engineering Design

Many utilities nationwide encounter challenges in managing and disposing large volumes of sludge produced. This work presents the proactive actions the City of Waterbury is taking through proper operations methods and innovative engineering design improving sludge management, production, handling, and disposal while maintaining effective operations and high-water quality standard.

Speaker(s): [Veronica Llana](#), [Jacobs](#)

02:30 PM MDT

Developing a Clearwell Inspection Program via Remote Operated Vehicle

This presentation will describe how a utility developed an inspection program for their clearwells using a Remote Operated Vehicle (ROV) to proactively plan maintenance activities.

Speaker(s): [Jeff Navarrete](#), [San Diego Public Utilities Dept.](#)

03:00 PM MDT

Adapting to Flux: Managing Water Treatment Residuals in a Dynamic Decision-Making Environment

The City of Dallas operates the Elm Fork Water Treatment Plant (EFWTP), a 310 MGD facility in Carrollton, TX, which historically managed residuals removal as a capital project, with removal occurring every 3 to 4 years. In 2021, the city transitioned residuals disposal to an operational responsibility, incorporating it into the plant's daily processes. This shift introduced challenges such as redefining staff roles, managing operational budgets, and ensuring regulatory compliance. Successfully managing this multi-million-dollar dewatering contract now requires a comprehensive approach across planning, procurement, and execution, balancing financial limitations with environmental and operational goals.

Speaker(s): [Guadalupe Bailey](#), [City of Dallas Water Utilities](#)

03:30 PM MDT

Asset Maintenance Optimization in Miami-Dade County Water Treatment Plants

The purpose of this presentation is to walk the attendee through a progressive approach to developing or improving upon, a maintenance and reliability program. Whether your organization has a formalized asset management plan or not, many of the foundational elements align with ISO 55000 Asset Management Standards. The goal is to provide an understanding of the foundational elements of a maintenance and reliability program and to determine the best place to begin an improvement initiative. Having pieces of several of these elements, Miami-Dade Water and Sewer Department (Florida) is focused on improving their maintenance and reliability program and will be discussing their goals and the importance of embarking on this journey.

Speaker(s): [Steven Hutchings](#), [Hazen and Sawyer](#)

04:00 PM MDT

Stretching Energy Management Goals Through Flexible Operations of Desalination Facilities

This presentation presents ongoing collaborative research between Colorado State University, the Water Replenishment District, Salt River Project, Electric Power Research Institute, and National Renewable Energy Laboratory on the feasibility and opportunities of flexible water treatment operations in reverse osmosis desalination plants in coordination with energy management goals and electric grid integration. The presentation will summarize the key takeaways for defining, measuring, and evaluating grid-flexible desalination systems in the scenarios of Demand Response Participation, Load Shifting and Load Shedding, Energy Storage, and Flexible Process Scheduling coinciding with renewable energy demands.

Speaker(s): [Joshua Rodriguez](#), [Colorado State University](#)

TUE091 - PFAS in Residuals and PFAS Destruction

Moderator(s): [Brock Emerson](#)

Event Type: Educational Sessions

Event Track: A Focus on PFAS

01:30 PM - 04:30 PM MDT | Tue | Room 605

OVERVIEW: As our industry continues to meet the challenge of separating PFAS from drinking water. PFAS separated from drinking water will end up in water treatment residuals, increasing treatment complexity. Additionally, we will discuss multiple destruction technologies.

PRESENTATIONS:

01:30 PM MDT

The Elephant in the Room: A Canadian Perspective on PFAS Destruction for PFAS-Laden Residuals at Drinking Water Treatment Plants

While PFAS removal technologies are relatively mature, PFAS destructive technologies are

comparatively less developed. The sector is challenged with simultaneously requiring action to mitigate associated health risks while facing uncertainty regarding how to manage PFAS-laden water treatment residuals. This presentation reviews a 'state of the industry' study completed in partnership with Canada's federal regulator, Health Canada, and discusses the market-readiness, benefits, and limitations of 9 different PFAS destruction technologies. The presentation also provides an outlook on areas for future growth to mitigate short-term and long-term implementation risks.

Speaker(s): Robbie Venis, AECOM

02:00 PM MDT

PFAS Concentration Using Ozone Foam Fractionation & Regenerable Ion Exchange, Enabling Onsite Destruction at Drinking Water Plants

With EPA's new and forthcoming regulations (MCLs, CERCLA, RCRA), drinking water plants need viable solutions to reduce the financial and liability burdens on their ratepayers. Electro-oxidation (EO) offers a proven onsite water treatment approach to PFAS destruction. For cost-effective onsite PFAS destruction, these chemicals must be concentrated in the smallest volume possible to minimize EO capital costs and optimize energy consumption. Two concentration techniques: ozone foam fractionation (FF) and regenerable ion exchange (RIX) have been piloted at drinking water plants. This talk will outline the performance of these two approaches, charting a path to affordable, fully-integrated PFAS treatment featuring onsite destruction.

Speaker(s): Zia Klocke, Ovivo

02:30 PM MDT

Strategic Management of PFAS Residuals: GAC Scenario

The issue of PFAS residuals management in drinking water treatment applications remains a significant unresolved problem, with an unsettled array of multiple interconnected regulatory actions presenting logistical, economic, and possibly legal challenges, including impacts from both CERCLA and RCRA. As a result of these complex and potentially expensive challenges, it is critical for utilities to understand the risks and costs associated with PFAS residuals management, capturing these in a strategic plan. This presentation will examine these costs and risks for the scenario of PFAS treatment with GAC, which is expected to be the most widely implemented technology for compliance with the NPDWR.

Speaker(s): Brent Alspach, Arcadis U.S., Inc.

03:00 PM MDT

PFAS Destruction: A Discussion of Emerging Technologies Aimed at Destroying Fluorinated Organics

With the maximum contaminant limits (MCLs) and interim guidance on destruction and disposal of PFAS released by the EPA in April 2024, there is an increased need for responsible and effective residuals management when treating drinking water for PFAS. The objective of this discussion is to identify several PFAS destruction technologies and provide an overview of previous and ongoing projects that focus on demonstrating the destruction removal efficiency (DRE) and economic viability of the technologies. The technologies to be highlighted include supercritical water oxidation (SCWO), hydrothermal alkaline treatment (HALT), and sonolysis.

Speaker(s): Lauren March

03:30 PM MDT

Electrochemical Oxidation for PFAS Destruction in Water Treatment: Lessons Learned from the Field to Inform Treatment Train Models

Per- and polyfluoroalkyl substances (PFAS) are leading environmental contaminants affecting communities and industries around the world, including in drinking and wastewater. DE-FLUORO, a unique PFAS treatment system, has been developed to destroy regulated and unregulated PFAS compounds in waters through electrochemical oxidation with no waste disposal or regeneration required. DE-FLUORO can be integrated and coupled with existing treatment trains or utilized as a stand-alone technology to undertake PFAS treatment and destruction onsite. The abstract demonstrates the effectiveness of DE-FLUORO to treat a variety of PFAS impacted waters following separation and concentration to provide a cost effective PFAS treatment solution.

Speaker(s): Gavin Scherer, AECOM

04:00 PM MDT

Fate of PFAS During Full-Scale Thermal Reactivation of Granular Activated Carbon

Granular activated carbon (GAC) is the most widely used and well-established treatment technology for the removal of PFAS contaminants from drinking water and wastewater. After the GAC has reached the end of its useful service life, it can be thermally reactivated. A thorough program of testing was carried out at two full-scale facilities during the reactivation of a load of spent GAC known to contain adsorbed PFAS. This presentation will go over the process of reactivation and the testing results from each facility.

Speaker(s): Adam Redding, Calgon Carbon Corporation

TUE093 - Informed Decision-Making Based on Robust Water Supply Models and Tools

Moderator(s):

Event Type: Educational Sessions

OVERVIEW: A variety of raw water supply models and tools will be presented in this session and their resultant forecasts can provide decision-makers with the information needed to proactively manage water supply sources to satisfy an often complex mix of competing objectives. This session will present recent case studies from several regions of the country to demonstrate how the value of collaborative modeling can enhance water supply reliability during extreme conditions, address critical environmental needs, and improve day-to-day operation of raw water supplies.

PRESENTATIONS:

01:30 PM MDT

Building Water Supply Resiliency in Arizona – A Long-Term Planning Overview From the Salt River Project

This presentation will highlight the Salt River Project's efforts to maintain the resiliency of Arizona's largest in-state sources of drinking water. With uncertainty in the amount of Colorado water available to Arizona due to climate change and ongoing basin negotiations, SRP strives to use the best data and resources available to protect the supplies it manages in the Salt and Verde rivers, as well as groundwater sources. An overview of SRP's ongoing planning efforts will be given, including supply augmentation projects and other projects intended to increase the flexibility of operations to mitigate drought risk, as well as some detail on the analytical tools being leveraged to help inform decision making.

Speaker(s): Casey Caldwell, Hazen and Sawyer

02:00 PM MDT

Innovative Forecast-Informed Reservoir Operations at Lake Mendocino Improve Water Management in California's Russian River Basin

This presentation describes modernized reservoir operations at Lake Mendocino (CA), outlines the engineering analyses undertaken in their development, provides examples of the water management benefits that may be achieved, and highlights improved water supply management realized at Lake Mendocino in recent years because of FIRO strategies.

Speaker(s): Michael Konieczki, HDR

02:30 PM MDT

Down to the Wire: Using Stochastic Modeling and Climate Science to Manage Emergency Supplies

The Palo Pinto County Municipal Water District No. 1 operates Lake Palo Pinto. In 2014, storage levels reached critical levels with less than 90 days of supply remaining. This presentation details how the District made data driven decisions using stochastic modeling techniques and near-term climate projections in implementing emergency supply infrastructure to save millions of dollars.

Speaker(s): Zach Stein, HDR

03:00 PM MDT

Integrating Collaborative Water Supply Modeling to Support Utility Planning and Operations

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 two use cases: converting retired quarries into reservoirs to meet demand and evaluating regulatory scenarios for water withdrawals. The presentation demonstrates the value of collaborative modeling in enhancing water supply reliability and operability and navigating permitting challenges, serving as a blueprint for other utilities.

Speaker(s): Madison Miro, Hazen and Sawyer, Abby Bollinger, Christina Davis

03:30 PM MDT

Modeling Water Security Strategies Under Changing Climate for Nevada Irrigation District

The Nevada Irrigation District (NID) is proactively addressing the community's long-term water needs through its Plan for Water (PFW), a collaborative initiative designed to assess NID's current and future water supply and demand. To support this effort, three numerical models were developed to simulate NID's water delivery system: a physically based hydrological model, a demand model, and a reservoir operations model. This project produced an invaluable set of long-range decision tools that can be applied, at any time, to guide NIDs water management on how to mitigate risks to water supply.

Speaker(s): Hamideh Habibi, WEST Consultants

04:00 PM MDT

Climate Change Projections and Adaptation Strategies for the Pequannock Watershed

Freshwater abundance has long been a hallmark of the Northeastern United States, yet concerns about water availability are growing for many utilities in the region due to the impacts of climate change. The Pequannock Watershed, a critical 35,000-acre natural resource owned by the City of

Newark, NJ, is especially vulnerable to these shifts. In this project, climate change models were used to project localized climate swings for the Pequannock Watershed, allowing for proactive management of water sources and the development of more sustainable diversion procedures across multiple reservoirs.

Speaker(s): Skylar Reed-McMillon, City of Newark, NJ

TUE094 - Digital Solutions for Water Loss Management

Moderator(s): Elizabeth Loughnane

Event Type: Educational Sessions

Event Track: Intelligent Water

01:30 PM - 03:00 PM MDT | Tue | Mile High Ballroom 4cd

OVERVIEW: This session explores how three utilities are using digital solutions to bring together water usage data streams to manage operations more efficiently. Water loss occurs from several sources and digital solutions are being implemented to create awareness for utility personnel. Digital integration allows for previously reactive measures related to water loss being addressed in more real time.

PRESENTATIONS:

01:30 PM MDT

Proactive Water Main Break and Leak Response Through Optimized Sensor Placement with High-Fidelity Digital Twin

Water main breaks pose risks like property damage, water loss, and environmental hazards. Traditional detection methods delay responses, increasing costs. A high-fidelity digital twin (DT) is a proactive solution, creating a real-time digital replica of the water distribution network. Optimized sensor placement, through machine learning, data analytics, and hydraulic models, targets leak-prone areas like aging pipes. The DT integrates a Digital Thread for data visualization, Deep Machine Learning Models for near real-time updates, Hydraulic Simulations for real-time recalibration, and High-Performance Evolutionary Optimization for leak localization. This system allows water utilities to reduce water loss, lower costs, prevent contamination.

Speaker(s): Zheng Yi Wu, Bentley Systems, Inc.

02:00 PM MDT

Data at Your Fingertips: Empowering Water Agencies to Effectively Manage Supply and Demand

Participants in the session will learn how to utilize simple, but effective dashboarding tools to aggregate and synthesize water supply and demand data to improve the evaluation of reliability and availability of water supplies, and to make more informed planning operational decisions.

Speaker(s): Susan Xie, EKI Environment and Water, Inc.

02:30 PM MDT

Leveraging Data Warehousing for Enhanced Detection of Water Loss in Distribution Systems

This paper will unveil the creation of a cutting-edge, cloud-centric Near-Real-Time Data Warehouse that integrates daily SCADA, AMI, leak detection, plant operations, and more. Leveraging advanced analytics, water balance techniques, continuity models, and AI, it revolutionizes the way Santa Clarita Valley Water identifies and mitigates pressure zone water loss.

Speaker(s): Ali Diba, DCSE, Inc.

TUE099 - Lead Service Line Inventory Experiences

Moderator(s):

Event Type: Educational Sessions

Event Track: The Latest on Lead And Copper

01:30 PM - 04:30 PM MDT | Tue | Mile High Ballroom 1cd

OVERVIEW: This session will cover inventory considerations for lead and non-lead service lines, including emerging technologies, communications, and water sampling.

PRESENTATIONS:

01:30 PM MDT

Evaluating Alternative Methods for Service Line Materials Identification: Is there a

Evaluating Alternative Methods for Service Line Materials Identification: Is there a Magic “Lead” Bullet?

All water systems will be required to submit and maintain SL inventories following October 16, 2024. Initial inventories are expected to contain many “unknowns” which must be identified in accordance with the upcoming LCRI. Partial excavation (i.e., potholing) is often thought of as the industry gold standard method, but is costly, slow, and prone to error. As a result, many systems are looking for more affordable and accurate methods. This presentation will summarize revelations on emerging identification technologies. Related pilot testing experiences of San Antonio Water System (SAWS) will be shared. Lastly, a protocol for water utilities to follow when evaluating and requesting alternative SL identification approaches will be proposed.

Speaker(s): Christian Lytle, Hazen and Sawyer

02:00 PM MDT

Completing LCRR Service Line Inventory: Journey of a California Utility with No Lead Service Line

The Lead and Copper Rule Revisions (LCRR) require public water systems to inventory both utility- and customer-owned service lines, posing challenges for utilities with fragmented records. This presentation highlights the Long Beach Utilities Department’s (LBUD) successful completion of its comprehensive inventory for ~90,000 service lines. Using field verifications, predictive modeling, and Esri’s Lead Service Line Inventory Solution, LBUD confirmed no lead service lines (LSLs), achieving non-lead designation status. Attendees will learn LBUD’s approach, key findings, and lessons learned during its journey to complete the LCRR service line inventory.

Speaker(s): My Vu, Long Beach Utilities Department

02:30 PM MDT

Navigating Hurdles in Predictive Modeling and Field Investigation Efforts for Birmingham’s Lead Service Line Inventory

This presentation will highlight best practices and lessons learned from Birmingham Water Works Board’s journey in developing a Lead and Copper Rule Revisions (LCRR) compliant lead service line inventory (LSLI). The session will focus on key strategies for navigating predictive modeling, regulatory approvals, and field investigations to meet the LCRR compliance requirements. Attendees will gain insights into using AI-driven models to address unknown service lines, processing historical data, and adapting to evolving regulatory requirements. This presentation will provide practical guidance for utilities, regulators, and consultants working to reduce unknowns in LSLI and ensure compliance with Lead and Copper Rule Improvements.

Speaker(s): Vishakha Kaushik, Arcadis

03:00 PM MDT

Physical Inspection Methods for Water Service Line Identification with No Excavation

The LCRR/LCRI requires water systems to identify service line materials. However, excavating buried pipes is expensive and disruptive to customers. Instead, water systems are inspecting inside meter boxes, surveying customers, recording during routine activities, and conducting other noninvasive methods. This presentation reviews actual service line investigation programs and best practices from water systems across the US using methods without new excavation.

Speaker(s): Kristin Epstein, CDM Smith

03:30 PM MDT

Transforming Public Health: Greeley’s Communications Campaign Enhances Lead Protection Awareness and Engagement

The EPA’s Lead and Copper Rule Revisions (LCRR) and upcoming Lead and Copper Rule Improvements (LCRI) require water systems to change how they engage with customers. The City of Greeley’s Lead Protection Program focuses on proactive community engagement and transparent communication, using plain language to ensure access and equity for all water customers. This presentation will describe how the city’s Lead Protection Program improves customer confidence, participation, and well-being. This proactive approach works to mitigate public health risks and strengthen the community’s trust in the local government’s commitment to long-term water quality improvements.

Speaker(s): Michaela Jackson, City of Greeley Water & Sewer

04:00 PM MDT

Random Daytime, Fully Flushed and Composite Approaches: Lead Sampling Norms of the Future?

After decades of LCR sampling, the fixed volume first draw sample is the industry standard and has become the “go to” sample to answer all lead drinking water questions. Treatment effectiveness-based regulatory sampling has challenges and is inappropriate to answer many questions including those associated with exposure. This presentation will discuss three alternative lead drinking water sampling methods (random daytime, fully flushed, and manual composite sampling) that address exposure and other questions while still considering treatment effectiveness. Lead levels in the different water samples collected from homes with and without lead service lines, and in communities with and without effective corrosion control will be compared.

Speaker(s): Darren Lytle

Event Type: Educational Sessions

Event Track: The Future of Water | Roundtable Sessions

01:30 PM - 03:00 PM MDT | Tue | Four Seasons Ballroom 2-3

OVERVIEW: Engage in an interactive journey to explore key themes of water sustainability, from circular resource management to equitable technologies. This workshop is designed to educate, inspire, and empower participants to shape the Water 2050 vision collaboratively.

PRESENTATIONS:

01:30 PM MDT

Future-Ready Water: Collaborate, Innovate, Transform

Speaker(s): Joe Jacangelo, *Stantec*, Nicole Holloway, *Beaver Water District*, Gigi Karmous-Edwards, David Hale, *American Water Works Association*

TUE102 - Colorado River Management Issues and Strategies to Address Utility Needs and Concerns

Moderator(s): Blaine Dwyer

Event Type: Educational Sessions

Event Track: Legal, Financial, and Management

01:30 PM - 03:00 PM MDT | Tue | Four Seasons Ballroom 4

OVERVIEW: This moderated panel discussion will begin with an overview of the Colorado River basin, its supply issues and the on-going permitting programs and negotiations needed to develop a new management framework focused on the operations of the two largest reservoirs in the U.S. Panelists will respond to questions related to their concerns over potential financial, legal, management, environmental and other implications. Audience Q&A and polling will delve into applicability of the panelists' input in relation to the attendees' experiences focusing on comparisons with water management in other interstate river basins.

PRESENTATIONS:

01:30 PM MDT

Strategies For a Resilient Colorado River: Interactive Discussion

Speaker(s): Jeffrey Kightlinger, Andy Mueller, Jessica Brody, *Denver Water*, Blaine Dwyer

TUE103 - Tackling Outdoor Water Use

Moderator(s):

Event Type: Educational Sessions

Event Track: Water Use Efficiency Practices

01:30 PM - 03:00 PM MDT | Tue | Mile High Ballroom 1ab

OVERVIEW: Managing outdoor water use is one of the more challenging tasks for water utilities because it involves changing mindsets on how landscapes can be designed and managed. This session will feature examples of how utilities are working with residential and non-residential customers to get them to make changes to their outdoor landscapes with the goal of preserving water resources.

PRESENTATIONS:

01:30 PM MDT

Green Spaces, Great Savings: Tackling Water Use in Commercial Landscapes

Communities across the southwest and beyond are working toward commitments to reduce non-functional turf by 30 percent. Water conservation in large-scale landscapes, such as commercial properties and institutions, represents both great opportunity and challenges. The Alliance for Water Efficiency partnered with over 20 communities to evaluate the effectiveness of landscape transformation and irrigation efficiency programs. Attendees will learn about water savings, policy and program options, insights from customers and contractors, with insights to inform future

landscape programs and policy decisions for water-scarce regions.

Speaker(s): Liesel Hans, *Alliance for Water Efficiency*

02:00 PM MDT

Landscapes for Living: One Southern California Water Agency's Unique Take on Outdoor Water Use Efficiency Program Offerings

Attendees will learn about Eastern Municipal Water District's "Landscapes for Living" residential outdoor water use efficiency program. The program design began in 2020 and had to quickly pivot during a time of uncertainty. Since its initial roll out in 2021, the program has adapted and grown to better serve residential customers. And as EMWD looks to the future, it is working on expanding this program to include a selection of offerings for the outdoor water use of the commercial, industrial and institutional sectors as well.

Speaker(s): Gabriella Gutierrez-Herrera

02:30 PM MDT

The Next Frontier of CII Outdoor Water Use Efficiency - Reducing Non-Functional Turf in Response to AB-1572

In response to the passage of AB-1572, Long Beach Utilities has collaborated with various city departments, non-profit organizations, and community-based groups to convert non-functional turf into climate-resilient gardens. By fostering interdepartmental collaboration and breaking down operational silos, we aim to make substantial strides in both environmental stewardship and water conservation. This presentation will delve into our collaborative agreements with local NGOs and citywide departments related to AB-1572, the methodology behind on-site AB-1572 inspections, how we scaled our Lawn to Garden Program and Native Plant Parkway Program for the CII sector, and metrics of participation in our CII turf rebate program.

Speaker(s): Dani Luna Morgutia, *Long Beach Utilities Department*

TUE108 - Drinking Water Utility Preparedness for Wildland-Urban Interface Fires

Moderator(s): Chad Seidel

Event Type: Educational Sessions

Event Track: Water in the West

01:30 PM - 03:00 PM MDT | Tue | Mile High Ballroom 3ab

OVERVIEW:

PRESENTATIONS:

01:30 PM MDT

Drinking Water Utility Preparedness for Wildland-Urban Interface Fires

Speaker(s): Chad Seidel, *Corona Environmental Consulting, LLC*

TUE109 - Securing the Longevity of Small Water Systems: Strategies for Sustainability and Resilience

Moderator(s):

Event Type: Educational Sessions

Event Track: Water Resources Planning, Protection & Management

01:30 PM - 04:30 PM MDT | Tue | Room 403 - 404

OVERVIEW: Small water systems face increasing pressure to provide reliable, high-quality water to their communities while grappling with limited financial resources, aging infrastructure, and the growing impacts of climate change. Ensuring the long-term sustainability and resilience of these systems requires forward-thinking strategies and innovative solutions. This session will explore key approaches for enhancing the longevity of small water systems, focusing on sustainability, resilience, and operational efficiency.

PRESENTATIONS:

01:30 PM MDT

Growing and Aging Gracefully: A Small Private System's Journey

The Charlotte Harbor Water (CHWA) is a not-for-profit private water utility in Southwest Florida. CHWA supplies approximately 450,000 gallons of potable water daily to around 5,300 customers. This presentation describes how CHWA is meeting challenges stemming from aging infrastructure, rapid urban development, residential growth, and demand surges. CHWA's \$150M capital improvement plan (CIP) strategically focused on three key areas – treatment, storage, and transmission. Utility owners, operators, and engineers will benefit from this session by hearing how a multi-faceted CIP was created and implemented to avoid costly and painful problems.

Speaker(s): Daniel Nelson, Tetra Tech, Inc., Kaylei Kambak, Tetra Tech

02:00 PM MDT

Leadership in Crisis: Rebuilding Trust and Infrastructure at Castle Pines North

Castle Pines North Metro District (CPN) faced a “day zero” crisis in late 2021, marked by failing assets, lack of information, and leadership breakdown. Operating a 5 MGD direct filtration water treatment plant (WTP) for 10,000 residents in Colorado, CPN had to upgrade critical assets during a six-month shutdown, compounded by the loss of its sole operator and pandemic-related supply chain issues. The CPN Manager swiftly assembled a response team to rehabilitate the plant. This team worked for six months, replacing pumps, chemical feed systems, and a MCC, ensuring the WTP was operational by May 2022. Post-crisis, CPN developed a staffing plan, completed critical CIP, established transparent public communication, and increased WTP capacity.

Speaker(s): Alex Page, Kennedy Jeks

02:30 PM MDT

Small Water Systems and Complex Decisions – How One Utility Planned for Future Resiliency Through Regulatory Uncertainty

Lynnfield Center Water District (LCWD) in Massachusetts serves approximately 8,500 customers with four groundwater pumping stations, often struggling to meet the demands of the system with all water sources in service, leaving no redundancy or resiliency. At the same time, discolored water from manganese is an ongoing issue from one source. Through comprehensive planning, LCWD generated a Capital Program with a new water treatment plant and interconnection, addressing both quality and quantity for long-term water system resiliency. But, what happens to the best laid plans when PFAS comes along?

Speaker(s): Maddison Vidal, CDM Smith

03:00 PM MDT

Small Florida Town Making Great Strides in Planning

This presentation will highlight how the Town of Dundee, Florida is utilizing hydraulic modeling to plan for population growth while supporting economic growth. It will also touch on the value of modeling for a small town of 5,000 residents.

Speaker(s): Parsa Pezeshk, CHA Consulting, Inc.

03:30 PM MDT

Future-Proofing Small Water Systems: Strategic Master Planning for Growth and Regulatory Change

The Town of Maynard operates a small water system with three treatment plants, managed by limited staff and budget. Historically, the Town has addressed water system challenges reactively with short-term fixes that may not keep pace with increasing development, changing regulations, and declining water quality. To strategically address these issues, a 50-year Master Plan was created. This plan includes an alternatives analysis to determine the best approach to meet future demands and address water quality concerns including disinfection by-products, PFAS, and aesthetic issues. Alternative supplies, including connecting to a wholesale water supplier, and treatment upgrades for existing facilities were evaluated.

Speaker(s): maysoon sharif, Stantec

04:00 PM MDT

Integrated Master Planning Resulting in Innovative Solutions for System Reliability and Maintaining Cost for Customers

Master planning is evolving. Our clients want holistic plans that incorporate capital cost estimates, schedule implications, and funding sources. Pendleton, Oregon needed to consider effective ASR well operation, a summer irrigation water recycling program, additional anticipated capacity, and reasonable rates for consumers. As a leader in integrated master planning, Pendleton's experience can help other utilities make informed decisions for public infrastructure investments and support long-term returns on private investments in the community.

Speaker(s): Ann Quenzer, Consor

TUE112 - Elevating the Nationwide Potential for Water Reuse: Fresh Research Insights

Moderator(s): Sanjana Yagnambhatt

Event Type: Educational Sessions

Event Track: Reuse

01:30 PM - 03:00 PM MDT | Tue | Mile High Ballroom 2ab

OVERVIEW: This will take the format of a panel presentation; panelists will be given 15 minutes to provide current findings and updates in project work for each of the four topic areas. There will be interactive opportunities for attendees to ask questions and provide feedback on opportunities they see for elevating reuse and collaboration. A formal Q&A session will be available with pre-prepared questions

PRESENTATIONS:

01:35 PM MDT

Developing Treatment Models and Risk Mitigation Techniques

Speaker(s): Karl Linden, Ph.D, University of Colorado Boulder

01:55 PM MDT

Safeguarding Health Through Risk Assessment

Speaker(s): Eric Dickenson, Las Vegas Valley Water District

02:15 PM MDT

Successful and Sustainable Water Reuse Adoption Pathways

Speaker(s): Sherri Cook, University of Colorado

02:25 PM MDT

Social Development and Community Engagement

Speaker(s): Tzahi Cath, Colorado School of Mines

02:45 PM MDT

Panel Discussion

Speaker(s): Julie Minton, Water Research Foundation

TUE114 - Utility and Process Optimization

Moderator(s):

Event Type: Educational Sessions

Event Track: Water Quality Challenges

01:30 PM - 03:00 PM MDT | Tue | Mile High Ballroom 4ab

OVERVIEW:

PRESENTATIONS:

01:30 PM MDT

Optimizing Pretreatment Polymers at Denver Water's New Northwater Treatment Facility

Denver Water's Moffat Treatment Plant has reliably provided the Denver metro area with clean drinking water for the last 80 years and is now closing in on retirement. To replace Moffat, the organization built a new treatment plant at Denver Water's Ralston Reservoir site, called Northwater Treatment Plant (NTP). NTP commissioning began in March 2024 and quickly indicated that pretreatment optimization efforts were needed to meet internal goals at maximum plant flow rates, such as settled water turbidity less than 1 NTU and filter run times greater than 100 hours. A new flocculant aid polymer was selected for full-scale trial at NTP beginning in October 2024.

Speaker(s): Corinne Bertoia

02:00 PM MDT

Emulsion Polymer Out, Dry Polymer In; Metro Vancouver's Largest Water Treatment Plant gets a Make Over

The Seymour Capilano Filtration Plant (SCFP) is a high-rate direct filtration plant designed to treat 476 MGD. Since its start-up in 2010, the SCFP has been feeding oil-based emulsion non-ionic filter aid polymer (FAP) and washwater recovery (WWR) polymer ahead of the filtration and washwater residuals processes, respectively. These chemicals are critical to the plant operations. In the last eight years benefits to using dry instead of emulsion polymer were identified, including better storage shelf life, less degradation during transit, and less impact on residuals treatment and recycling. This presentation will showcase the conversion from emulsion to dry polymer including bench- and pilot-scale testing.

Speaker(s): Cristina Fonseca, Stantec Consulting Services, Inc.

02:30 PM MDT

A Study of Fluidized Bed Clarification Under Suboptimal Flocculation Conditions

Floc blanket clarifiers, also known as fluidized bed clarifiers (FBCs), provide an added barrier for the removal micron-sized pathogens and primary particles by using concentrated influent turbidity for particle capture. While the various factors impacting floc blanket performance have been studied empirically, a mechanistic model describing the physics governing fluidization and clarification has not been developed. Moreover, the relationship between floc blanket performance and the quality of the upstream flocculation process is not well understood. A floc blanket formed under adverse flocculation will be examined to better understand this relationship, which will allow for more optimal design and operation of floc blanket clarifiers.

Speaker(s): Andrew Pennock, NJIT

TUE118 - Veterans + Water Industry = SUCCESS !!

Moderator(s): Veronica Cavera

Event Type: Educational Sessions

Event Track: Water Education and Workforce

01:30 PM - 03:00 PM MDT | Tue | Room 503

OVERVIEW: Water industry leaders in HR, Operations, and Administration will learn how military veteran education & experience prepares them for roles in the water industry. Military Veterans will learn more about the broad & diverse career opportunities throughout the water industry. Operations, Administration, Cyber Security, Information Technology, Construction, Drone Operations, Geospatial Image Analysis, and so much more!!

PRESENTATIONS:

01:30 PM MDT

Veterans + Water Industry = SUCCESS !! Interactive Discussion

Speaker(s): Steven Garner, California-Nevada Section, Jeff Garner, Epcor

TUE120 - Brita Sponsor Session - Lead or Get Left Behind: Securing Funds Now for Lead Line Replacements & LCRI Compliance

Moderator(s):

Event Type: Educational Sessions

Event Track:

01:30 PM - 03:00 PM MDT | Tue | Room 601

OVERVIEW: This session reviews the funding landscape for lead service line replacement (LSLR) programs, highlighting funding approaches and strategies used by both large and small utilities. Attendees will learn why waiting to act will only widen the lead action gap, what utilities should prioritize in the short term vs. long term, and how to leverage available funding creatively. Case studies from proactive utilities will demonstrate real-world examples and best practices for overcoming financial hurdles.

PRESENTATIONS:

01:30 PM MDT

Framing the Lead Action Gap

01:37 PM MDT

LCRI Regulatory & Financial Landscape

01:52 PM MDT

What Utilities Should Prioritize in the Short Term vs. Long Term

02:12 PM MDT

Utility Case Studies: What's Working and Lessons Learned

02:42 PM MDT

Key takeaways/Q&A

TUE120-04 Tools Available for Tactical Planning

Moderator(s):

Event Type: Educational Sessions

Event Track:

02:02 PM - 02:12 PM MDT | Tue

OVERVIEW:

PRESENTATIONS:

TUE123 - Creative Applications of Adsorption and Advanced Oxidation Treatment

Moderator(s):

Event Type: Educational Sessions

Event Track: Research

03:00 PM - 04:30 PM MDT | Tue | Room 407

OVERVIEW: In Minnesota, a pilot study evaluated advanced oxidation processes (AOP) and biological filtration to address seasonal taste and odor (T&O) events and elevated disinfection byproducts (DBPs). The findings led to a facility upgrade incorporating these technologies. The second presentation explores GAC adsorption of preformed DBPs, highlighting the effects of competition and background organic matter. The third presentation focuses on radium removal through a new pressure filtration system utilizing on-site hydrous manganese oxide (HMO) generation. Collectively, these studies underscore the role of advanced treatment technologies and tailored solutions for enhancing water quality and regulatory compliance.

PRESENTATIONS:

03:00 PM MDT

Unlocking Effective T&O Removal and DBP Mitigation: Key Findings from AOP & Biofiltration Pilot Study

The City of St. Cloud, MN, operates a 24 MGD lime-softening water treatment facility that faces seasonal taste and odor (T&O) issues and elevated trihalomethanes (TTHMs). A 12-month comprehensive pilot study evaluated advanced oxidation processes (AOP) and biological filtration to mitigate these challenges. Results showed effective T&O and DBP reduction using ozone, peroxone, and UV-AOP. Biological filtration further enhanced treatment. This study's findings led to major upgrades at the facility in 2024. This paper will present the key findings from the pilot study and full-scale performance results.

Speaker(s): Qigang Chang, AE2S LLC

03:30 PM MDT

The Impact of Direct Competition on GAC Adsorption of Preformed Disinfection Byproducts for Potable Water Reuse

Direct competition, as well as fouling by background organic matter, for GAC adsorption sites may occur between DBPs under variable initial concentrations and varying TOC concentrations. Chlorination of wastewater effluent is a common practice and the adsorption of preformed DBPs is not well understood, particularly under wastewater reuse conditions when a range of regulated and unregulated DBPs, both weakly- and strongly-adsorbing, are present at varying initial concentrations. Thus, the impact of initial DBP concentrations, DBP mixtures, TOC concentrations, and empty bed contact time were evaluated using constant diffusivity rapid-small scale column tests.

Speaker(s): Nadia Jorgenson, University of Colorado- Boulder

04:00 PM MDT

From Pilot to Pioneer: A Small Town's Solution to a Big Radionuclide Issue using

Hydrous Manganese Oxide

Cheraw's Water Treatment Facility has been operating under an Enforcement Order since 2009, which addresses compliance with the MCL for combined radium-226 and -228. Like many groundwater sources in southeastern Colorado, Cheraw's wells have high levels of naturally occurring radionuclides. In 2023, Cheraw installed the first Hydrous Manganese Oxide on-site generation system in Colorado and has been able to reliably remove radium below the MCL. This presentation will cover bench and demonstration-scale testing, technical challenges during design and construction, unique funding and operational challenges faced by small and rural water systems, and additional considerations for potential consolidation with nearby water systems.

Speaker(s): Lok Yee Jacqueline Wong, JVA

TUE125 - Creative Solutions in Sustainable Infrastructure

Moderator(s): Christine Kirby

Event Type: Educational Sessions

Event Track: Infrastructure Management

03:00 PM - 04:30 PM MDT | Tue | Room 405

OVERVIEW: The NYC Department of Environmental Protection used adaptive strategies for collaboration and consistent communication for their public onsite green infrastructure projects at local schools and housing authority sites. ISI will review the EPA's EUM and illustrate how Envision parallels the EUM's Ten Attributes and Five Keys as applied to capital projects. The cement and concrete industry have developed a Roadmap outlining the opportunities and actions to reach carbon neutrality without sacrificing long-term performance.

PRESENTATIONS:

03:00 PM MDT

Collaboration and Creativity: Delivering Onsite Green Infrastructure Projects at Schools and Public Housing Sites in New York City

Improving stormwater management in New York City is a critical concern due to the prevalence of combined sewer systems and aged drainage infrastructure. The New York City Department of Environmental Protection (DEP) aimed to alleviate the strain on their drainage systems during heavy rainfall events through a robust green infrastructure program. This presentation describes how public onsite green infrastructure was implemented at various public schools and housing sites around the Brooklyn and Queens boroughs in New York City.

Speaker(s): Amanda Retta, Tetra Tech

03:30 PM MDT

Envision Sustainable Infrastructure Framework Guides Planning & Design to Support Outcomes Aligned with EUM's Ten Attributes

The EPA has evolved EUM over more than 15 years to increasingly aid water and wastewater utilities in improving organization-wide performance. Concurrently, Envision has been embraced by over 200 municipalities and water agencies to plan, design, construct, and prepare to operate and maintain more sustainable, resilient, and equitable water infrastructure. Considering facility sustainability early advances sustainable operations and supports outcomes outlined in EUM's Ten Attributes and aligns with the Five Keys to Management Success. This presentation provides an Envision overview illustrates how Envision parallels the Ten Attributes and Five Keys, as applied to planning, design, construction, and for preparing O&M of capital projects.

Speaker(s): Anthony Kane, Institute for Sustainable Infrastructure (ISI)

04:00 PM MDT

Using Voluntary Guidelines to Advance on the Road to Carbon Neutrality

Cement is the first ingredient in the concrete infrastructure that provides the foundation for the nation's built environment. With construction demands projected to increase, we have a once-in-a-generation opportunity to set a global example on building sustainably, utilizing new approaches, and advocating for updated technology. The cement and concrete industry have developed a Roadmap outlining the opportunities and actions to reach carbon neutrality across the entire value chain. This presentation will detail an approach that leverages relationships at each link of the value chain, demonstrating to the world that this industry can address climate change with ambition and audacity.

Speaker(s): Lindsey Geiger, Portland Cement Association

TUE129 - Operational Tools for Maintaining the Distribution System

Moderator(s):

Event Type: Educational Sessions

Event Track: Distribution System Operation and Management

03:00 PM - 04:30 PM MDT | Tue | Room 405

OVERVIEW: This session will cover topics regarding the Distribution System Operations & Maintenance, Main Breaks, Transients and DBP Management

PRESENTATIONS:

03:00 PM MDT

Las Vegas Doubles Down and Wins Big: How LVVWD Reduced Line Breaks by 30%

After a series of repeat main breaks and pressure spikes, one Las Vegas Valley Water District (LVVWD) engineer had a hunch: by mitigating pressure transients, might it be possible to significantly reduce pipe failures? Comparing pressure transient data collected over several years showed that this hunch was an effective break reduction strategy: High-resolution pressure monitoring has completely changed the way LVVWD operates their water distribution network, resulting in a 30% reduction in breaks. This presentation will detail how monitoring dynamic network changes over sub-second time intervals allowed LVVWD staff to reduce breaks and achieve efficiencies across their valve and pumping operations.

Speaker(s): Nicole Kaiser, Badger Meter

03:30 PM MDT

Under Pressure: Protecting Dallas' 84-inch White Rock North Transmission Main from Surge Events

Water surge events can cause catastrophic damage to equipment and pipelines. Operators must take care to minimize surge events and respond rapidly when damage occurs. Air release valves can be a cost-effective strategy for protecting against surge in water transmission mains, but they come with their own challenges.

Speaker(s): Wendy Martinez, CDM Smith, Inc.

04:00 PM MDT

Predictive Modeling for Disinfection Byproduct Management: Enhancing Water Quality and Regulatory Compliance in Water Distribution

Compliance with EPA regulations under the Safe Drinking Water Act is crucial for public health, particularly in controlling harmful Disinfection Byproducts (DBPs). The City of Baltimore's monthly DBP monitoring revealed several sites with elevated levels, prompting the need for a more advanced management approach. The City recognized the value of a predictive model to forecast future DBP concentrations using historical data.

Speaker(s): Sepideh Yazdekhasti, Xylem

TUE134 - Lessons Learned in Making The Most of Artificial Intelligence

Moderator(s):

Event Type: Educational Sessions, Focused Insights

Event Track: Intelligent Water

03:00 PM - 04:30 PM MDT | Tue | Mile High Ballroom 3ab

OVERVIEW: This session series explores lessons learned in effectively implementing AI within the water sector, highlighting key strategies and examples. The sessions emphasize best practices, ethical considerations, and practical solutions for leveraging AI to across procurement, data management and cybersecurity.

PRESENTATIONS:

03:00 PM MDT

AI in Utility Operations and Maintenance

03:10 PM MDT

Beyond the Buzz: Harnessing AI for Water Professionals – Practical Insights and Responsible Integration

This session explores how AI is transforming water management by automating repetitive tasks, boosting productivity, and supporting workplace accommodations. We will address key concerns like data privacy, bias, and human oversight, equipping attendees with strategies for responsible AI integration. This presentation is ideal for those seeking to understand AI's real-world applications and how it can complement existing workflows, and for those looking to ease concerns about AI by gaining a deeper understanding of the technology's applications.

Speaker(s): Rowan Hannan, Albuquerque Bernalillo Water Utility Authority

03:30 PM MDT

03:30 PM MDT

AI Software Procurement: Prerequisites, Conceptualization, and Vendor Evaluation for Water Utilities

Artificial intelligence (AI) is gaining traction in the water industry quicker than many would have expected. Whether an organization's journey into AI starts with an interest in optimizing operations or a push from the board, organizations often uncover many challenges when trying to get started. This presentation will demystify AI software procurement for water utility leaders – from understanding the prerequisites for deployment to evaluating vendors and ensuring long-term value for water industry specific applications of AI.

Speaker(s): Joberto Lee, *Enterprise Automation, A Tetra Tech Company*

03:50 PM MDT

Building Resilient Utilities with AI and Machine Learning: The Crucial Role of Data Management and Cybersecurity

As utilities face growing challenges such as aging infrastructure, climate change, and stricter regulations, the adoption of artificial intelligence (AI) and machine learning (ML) has become vital to driving operational efficiency, reducing risks, and enhancing preparedness. This two-part presentation will show how 1) AI/ML applications—such as predictive maintenance, process optimization, energy management, quality control, and fault detection—are reshaping the water utility industry and 2) how cybersecurity is an important dependency for the successful operation of these solutions.

Speaker(s): James Schultz, *Black & Veatch*

04:10 PM MDT

Technology Initiatives in the AI Era – Keys to Success for Your Organization

As the water infrastructure sector continues to face unprecedented challenges, including climate change, workforce challenges, population growth, and aging systems, the integration of artificial intelligence (AI) presents transformative opportunities. This presentation explores innovative technology initiatives, including those that leverage AI, to enhance operational efficiency, improve decision-making, and build a technology-enabled staff within organizations.

Speaker(s): Mitchell Dabling, *HDR*

TUE138 - Owner's Toolkit and Strategies for Project Delivery Success

Moderator(s): Darlene Helm

Event Type: Educational Sessions

Event Track: Capital Improvement Projects: Design, Construction, and Delivery

03:00 PM - 04:30 PM MDT | Tue | Room 503

OVERVIEW: This session is focused on the Owner's perspective in project delivery. Attendees will learn from Owner's on the trends and challenges they are facing, lessons learned in planning and commissioning

PRESENTATIONS:

03:00 PM MDT

Facing the Future: Agency Trends in Project Delivery

Upgrading and expanding aging water infrastructure presents ongoing challenges for project design and construction. Systematic changes are being experienced that are influencing how capital water projects are being completed. Most root causes for the trending changes are identified in publications such as the AWWA "Water 2050" series and "State of the Water Industry" reports, but what's not always clear is how systematic changes are impacting infrastructure project scope, schedule, and fee at the individual project level. This presentation provides an overview of perspectives on the challenges, project impacts, and solutions for three trending topics: Labor and Staffing; Complexity; and Uncertainty.

Speaker(s): Jonathan Tull, *Las Vegas Valley Water District*

03:30 PM MDT

Successfully Navigating Planning and Commissioning Challenges for a \$1.6B Water System

The \$1.6B Bois d'Arc Lake program recently completed commissioning and began supplying water to North Texas. This paper focuses on the collaborative effort required to attain the necessary regulatory approvals and how advanced planning among stakeholders led to a highly successful commissioning of the system in spite of numerous challenges.

Speaker(s): Aliza Caraballo, *North Texas Municipal Water*

04:00 PM MDT

Integrating O&M Staff into Project Execution and Cross-Project Construction Planning

Traditionally the need for new water supply infrastructure was identified during planning, engineers performed design, and contractors constructed the new facilities. Focus was on the project, with little focus on operations and maintenance. The trend toward greater involvement of operations and maintenance staff in planning, design, and construction of new water infrastructure has created

maintenance staff in planning, design, and construction of new water infrastructure has opened opportunities for better executed projects but also imposes challenges for operations and maintenance staff. This presentation explores approaches and lessons learned from the City of Santa Cruz Water Department, as they successfully integrate operations and maintenance staff into project execution and cross-project planning for their water supply program

Speaker(s): Donald Champenois, HDR Engineering, Scott Joslyn, PE WWTP, WTPO, WDO

TUE141 - Community Engagement & Empowerment: A Path to 2050

Moderator(s): Nancy Sullivan

Event Type: Educational Sessions

Event Track: The Future of Water | Roundtable Sessions

03:00 PM - 04:30 PM MDT | Tue | Four Seasons Ballroom 2-3

OVERVIEW: Water 2050 is a collaborative initiative that envisions the future of water and charts a course for success and sustainability. We aim to deepen our understanding of communities' water needs, build public trust in water service providers through education, and engage communities in water policy. Our goal is to foster a culture where everyone has a personal connection to - and shared responsibility for - our water future. This session will feature a conversation with members of Water 2050's Equity, Access, and Community Engagement Strategic Implementation Team. We'll discuss their intentions, the current state of consumer water knowledge, and the resources being developed. Following a brief fireside chat, participants can join roundtable discussions to provide feedback that will shape these efforts. The discussions will focus on best practices and practical approaches to engaging with communities and connecting with people. Attendees will leave with a deeper understanding of Water 2050 and the tools and resources being developed to support water utilities on the journey to 2050.

PRESENTATIONS:

03:00 PM MDT

Community Engagement & Empowerment: A Path to 2050

Speaker(s): Kelley Dearing Smith, Louisville Water, Samantha Villegas, Raftelis, Brian Bennon, Nancy Sullivan, American Water Works Association

TUE142 - Checking In On PFAS: A Mid-2025 Update on PFAS Related MultiDistrict Litigation (MDL)

Moderator(s): Ashley Campbell

Event Type: Educational Sessions

Event Track: Legal, Financial, and Management

03:00 PM - 04:30 PM MDT | Tue | Four Seasons Ballroom 4

OVERVIEW: This interactive discussion between legal and water utility experts will offer an update on PFAS regulations from a legal and operational perspective that includes challenges to the MDL and MCL and/or CERCLA. Discussion will also include updates on PFAS litigation settlements, updates on PFAS-related litigation at the state level, and any new developments relating to possible rollbacks (or proposed rollbacks) in PFAS regulations by the Trump Administration that could impact ongoing or future litigation. Our big picture (squishy) structure is as follows, but we welcome edits/notes/suggestions. Panelists will also discuss PFAS funding implementation and how utilities are receiving and handling litigation settlement funds.

PRESENTATIONS:

03:00 PM MDT

Checking In On PFAS: A Mid-2025 Update on PFAS Related MultiDistrict Litigation (MDL): Interactive Discussion

Speaker(s): Jessica Ferrell, Marten Law LLP, Dan York, Sacramento Suburban Water District

TUE143 - Water Conservation Programs

Moderator(s):

Event Type: Educational Sessions

Event Track: Water Use Efficiency Practices

03:00 PM - 04:30 PM MDT | Tue | Mile High Ballroom 1ab

OVERVIEW: Water utilities have considerable latitude to develop conservation programs that meet their goals. This session provides an overview AWWA's voluntary standard outlining the elements of a good program and provides examples of how conservation programs can be designed to reach specific types of customers within their service areas.

PRESENTATIONS:

03:00 PM MDT

G480-20 Water Conservation Standard – A Colorado Utility Works with National Nonprofit to Evaluate Compliance

This presentation will review the G480-20 standard, the Alliance for Water Efficiency's leaderboard and Aurora Water's exemplary water efficiency program. The presentation will explain the benefits of the voluntary standard and the voluntary leaderboard and how it has been of value to Aurora Water to participate in this effort.

Speaker(s): Peter Mayer, *Water Demand Management, LLC (dba WaterDM)*

03:30 PM MDT

Equitable Access to Water Efficiency: Challenges and Solutions for Mobile Home Residents

This in-depth session explores water efficiency in mobile home parks, a sector often overlooked in conservation efforts. This session will showcase the outcomes of a unique project conducted by the Alliance for Water Efficiency in partnership with communities in Colorado to provide no-cost services to residents—conducting water audits, replacing inefficient fixtures, repairing leaks, and offering education. We'll dive into groundbreaking research on potential water savings, submetering costs, and addressing equity issues in metering and billing. Attendees will learn key lessons on working with this underserved community and discover insights that could inform future policies and utility strategies for mobile home parks.

Speaker(s): Liesel Hans, *Alliance for Water Efficiency*

04:00 PM MDT

Desire to Action: Water Conservation Support Programs That Get the Job Done!

Water conservation is challenging for residential and commercial customers, requiring resources, or mechanical and operational knowledge that many lack. Even simple tasks such as programming irrigation controllers or adjusting toilet float valves can be overwhelming without a basic level of technical knowledge. Commercial properties are the same: from cooling towers, irrigation systems, and complex systems inside, few facilities have the knowledge to achieve and maintain optimal water use. Recognizing this gap, Spokane has developed a comprehensive suite of conservation support and rebate programs to assist residential and commercial customers. This presentation will overview the programs, their impact, and case studies.

Speaker(s): Will Rettig, *City of Spokane*

TUE144 - Water Loss Control Plan Implementation (1 of 2)

Moderator(s):

Event Type: Educational Sessions

Event Track: Water Use Efficiency Practices

03:00 PM - 04:30 PM MDT | Tue | Mile High Ballroom 4cd

OVERVIEW: Controlling water loss from distribution systems is an on going challenge for water utilities. Hear from utilities that are taking on the challenge and making real progress in controlling real losses.

PRESENTATIONS:

03:00 PM MDT

Tortoise and the Hare: Perseverance to Outpace Rising Water Loss

This presentation is the story of a mid-size water utility with high pressures and aged infrastructure in a never-ending race against water loss. As of 2021, the Asheville NRW program enters its 10th year, and there have been many twists and turns. Water loss is on the rise, after hitting a historic low in 2017. Despite a proactive leakage management program, new leakage continues to rise faster than the mitigative efforts can contain it. Our case study will be helpful for other utilities who already have a NRW program in place, but have encountered challenges and setbacks. We will present the lessons we are learning as highlighted above, as well as how we are measuring our progress beyond the total water loss measured.

Speaker(s): Will Jernigan, *Cavanaugh & Associates P.A.*

04:00 PM MDT

Miami Dade Water and Sewer Department NRW Reduction Efforts and Results

Miami Dade water and Sewer is a large Water/Wastewater utility serving a population of 2.3 million. Over the last several years, the utility has implemented a series of initiatives to address its non-revenue water results on several fronts, covering real and apparent losses. These initiatives have resulted in quantifiable results, serving as a measure of their effectiveness.

Speaker(s): [Francisco Martinez](#), *Miami-Dade Water & Sewer Department*

TUE152 - Risk-Based Framework for Developing Microbial Treatment Targets for Water Reuse

Moderator(s): [Ashley Harper](#)

Event Type: Educational Sessions

Event Track: Reuse

03:00 PM - 04:30 PM MDT | Tue | Mile High Ballroom 2ab

OVERVIEW:

PRESENTATIONS:

03:00 PM MDT

Risk-Based Framework for Developing Microbial Treatment Targets for Water Reuse

Speaker(s): [Ashley Harper](#), *USEPA Office of Water*, [Sharon Nappier](#), *USEPA Office of Water*, [Michael Jahne](#), *USEPA Office of Water*

TUE154 - Taste & Odor Monitoring and Treatment

Moderator(s): [Lauren Weinrich](#)

Event Type: Educational Sessions

Event Track: Water Quality Challenges

03:00 PM - 04:30 PM MDT | Tue | Mile High Ballroom 4ab

OVERVIEW: This session will discuss monitoring methods and treatment technologies for T&O compounds.

PRESENTATIONS:

03:00 PM MDT

Cracking the Code: Tackling Taste and Odor Issues in Marston Forebay

Marston Forebay has long faced seasonal taste and odor (T&O) challenges impacting WTP operations. In 2024, a study was initiated to investigate T&O challenges to identify root causes. Data collected in 2024 provided new insights into T&O events, guided follow-up monitoring, and informed management adjustments. Preliminary results confirmed that metabolite production is occurring in the Forebay. Given the low algal densities, low nutrients, and absence of macrophytes, it is likely that algae and cyanobacteria are being grazed upon by carp. The grazing pressure was determined to be a key driver to T&O events. This presentation highlights data trends, findings, and source water management approaches to address long-standing T&O issues.

Speaker(s): [Elizabeth Crafton](#), *Hazen*

03:30 PM MDT

Taste and Odor: The City of Bloomington Utilities Approach to (Hopefully) Mitigate an Unsavory Seasonal Event

The taste and odor compounds geosmin and methylisoborneol (MIB) have been a growing issue and treatment headache for the City of Bloomington Utilities Monroe Water Treatment Plant. Increasing warm weather patterns, paired with longer dry spells have amplified the taste and odor compounds which have become a seasonal sore spot for our drinking water utility. This presentation aims to show our approach and research into potential solutions to solve or mitigate these two compounds, which have been historically difficult to control in a conventional water treatment plant in high concentrations.

Speaker(s): [Justin Meschter](#), *City of Bloomington Utilities*

04:00 PM MDT

Effective T&O Control with Source-to-Plant Approaches for Monitoring and Treatment

Drinking water systems that rely on lakes and reservoirs which are vulnerable to algal blooms frequently experience T&O issues and subsequent customer complaints. This presentation will discuss case studies that successfully implemented techniques for monitoring and control of T&O compounds both in source water systems and at treatment plants. The presentation will emphasize the importance of a multi-barrier approach towards T&O control when source control methods are paired with treatment optimization at the plant.

Speaker(s): [Susheera Pochiraju](#), *Hazen and Sawyer*

TUE158 - Preserving Programs to Elevate Underrepresented Voices in Water

Moderator(s):

Event Type: Educational Sessions

Event Track: Water Education and Workforce

03:00 PM - 04:30 PM MDT | Tue | Room 504

OVERVIEW: This session will include reflective and potentially challenging conversations about the prevalence of diversity, equity, and inclusion in the workforce that lead to conversations about the ways in which it could be enhanced. The presenters will identify and engage in discussions about strategies that can elevate certain voices in the Water Resources industry that historically have not been well represented.

PRESENTATIONS:

03:00 PM MDT

Water Workforce Diversity: Is DEI in Danger?

Instituting a diversity, equity and inclusion program is extremely important. We must address policies and practices that contribute to disparities in areas, such as economic and workforce outcomes. We must look for ways to move us toward eliminating disproportionate outcomes and their negative impacts on the most vulnerable communities. As diversity, equity and inclusion initiatives and programs are implemented, they are now facing legal challenges. There are legal cases all over the country that are now questioning the impact and ways that diversity, equity, and inclusion are introduced and acted upon. This will address how to continue your diversity, equity, and inclusion journey in this changing legal landscape.

Speaker(s): [Kellie Watson](#), *Louisville MSD*

03:30 PM MDT

Water Sector DE&I - Driving Meaningful Change Together

As utilities re-evaluate organizational health, diversity, equity, and inclusion (DE&I) become essential. Water Research Foundation Project #5186 advances DE&I by tailoring strategies to the unique needs of water utilities. This presentation will highlight some of the actionable insights along with a case study a partner utility.

Speaker(s): [Tiffany Torres](#), *Brown and Caldwell*

04:00 PM MDT

Building an Interdisciplinary Water Cohort that Elevates Historically Underrepresented Voices in Water Resources

This would be a panel discussion with a member of the water fellow program faculty, leading a discussion with water fellows from each cohort (listed below) and the experiences that the fellows have had while being part of the 2024-25 cohort and how they benefited from the program as well as their thoughts on the future of the water workforce and education.

Speaker(s): [Daniel Dominguez](#), *Colorado Water Center*

Wednesday, June 11, 2025**WED001 - Advancements in Membrane Treatment**

Moderator(s): [Mark Beebe](#)

Event Type: Educational Sessions

Event Track: Advances in Water Treatment

08:30 AM - 10:00 AM MDT | Wed | Room 503

OVERVIEW:

PRESENTATIONS:

08:30 AM MDT

Decisions, Decisions – Selecting an RO Treatment Strategy for Emerging Contaminants at PTRWA

While RO membranes present an excellent technology for emerging contaminant treatment, significant risks are present: high capital and operational costs, generation of a waste (concentrate) stream, and potential for regulations on residual streams. This presentation presents a case study on how a drinking water utility made a selection for RO and concentrate stream treatment to handle PFAS and 1,4-dioxane present in their raw water source.

Speaker(s): Negin Salamat

09:00 AM MDT

Case Study: Competitively Bidding Submerged Membrane Filtration Retrofits via Design

Historically it has been difficult to competitively bid submerged filtration membranes retrofits because the membrane supplier is integral to providing the complete membrane system. However, as the membrane industry continues to develop "me-too" submerged membrane products, there is a new opportunity for utilities to design system upgrades independently from the original system suppliers to enable a competitive membrane bidding process. This presentation will provide examples from two case studies where this approach has been executed at full scale. The resulting benefits from this modified approach include project cost savings, capacity expansion, enhancements in membrane performance and improvement in operability.

Speaker(s): lee portillo, Black & Veatch

09:30 AM MDT

How to Plan for a Groundwater Desalter When You Have Little Space and Limited Information

This talk presents the planning approach for a desalter project that has little space and limited data.

Speaker(s): Zita Yu, Jacobs

WED004 - One Water Projects Across the World

Moderator(s):

Event Type: Educational Sessions, International

Event Track: Water Utility Management

08:30 AM - 11:30 AM MDT | Wed | Mile High Ballroom 1ef

OVERVIEW: To achieve sustainability, the One Water concept must be a part of water management strategy to ensure effective and efficient use of water resources to protect public health and the environment, and at the same time support economic activities and growth. Drinking water, wastewater, stormwater, reused water, and other forms of water are all part of the global hydrologic cycle and they are intricately linked. This session explore such linkages through the One Water concept to allow us to better manage our most vital resource.

PRESENTATIONS:

08:30 AM MDT

SBR for the home: a potential for innovation in wastewater treatment in the Philippines

This study describes a small scale modular sequencing batch reactor design for the home in the Philippines, with the goal of treating water onsite, with the design accompanied with technical, legislative and economic analyses

Speaker(s): Carlo Galicia, Cebu Institute of Technology - University

09:00 AM MDT

Packaged Treatment Plants, A Sustainable Boon to Individual Water Supply Schemes – A Case Study of Rajapur Village in Maharashtra, India

Speaker(s): Abhishek Jadhav

09:30 AM MDT

TBD

10:00 AM MDT

TBD

10:30 AM MDT
TBD

11:00 AM MDT
TBD

WED008 - Pipe Rehab, Disinfection and Dechlorination, PE Pipe, and Water Meters: New and Revised Standards

Moderator(s): [Paul Olson](#)

Event Type: Educational Sessions

Event Track: Infrastructure Management

08:30 AM - 11:30 AM MDT | Wed | Room 403 - 404

OVERVIEW:

PRESENTATIONS:

08:30 AM MDT

[The Direction of Water Meter Testing](#)

09:00 AM MDT

[Manual M55, PE Pipe – Design and Installation, Updates in the 2nd Edition](#)

Speaker(s): [Amster Howard](#), *Relativity Publishing*

10:00 AM MDT

[How AWWA C904-22 Ensures the Reliability of Crosslinked Polyethylene \(PEX\) Tubing for Water Service Line Applications](#)

Speaker(s): [Lance MacNevin](#), *Plastics Pipe Institute*

10:30 AM MDT

[The Direction of Water Meter Testing](#)

Speaker(s): [Craig Hannah](#), *Johnson Controls, Inc.*

10:30 AM MDT

[Updates to Disinfection of Facilities Standards, with an Emphasis on Updated Disinfection and Dechlorination Plans](#)

Speaker(s): [Betsy Reilley](#)

WED011 - Engaging with Communities to Discuss Forever Chemicals

Moderator(s):

Event Type: Educational Sessions

Event Track: A Focus on PFAS

08:30 AM - 10:00 AM MDT | Wed | Room 405

OVERVIEW:

PRESENTATIONS:

08:30 AM MDT

Be First, Be Right: PFAS Community Chats

In 2018, OWASA began monitoring PFAS in our drinking water sources and found elevated levels in our largest raw water source- Cane Creek Reservoir. Some PFAS compounds were found to be an order of magnitude higher than the EPA's proposed MCLs. In 2023, OWASA's PFAS Community Communications Plan was approved by its Board of Directors. This plan includes a series of "PFAS Community Chats" designed to inform and engage our community around PFAS in drinking water. This presentation will include our secrets to success, our observations and experiences, and our lessons learned in planning and executing this chat series to encourage more utilities to take this open approach to talking about PFAS with their communities.

Speaker(s): [Katie Hall](#), OWASA

09:00 AM MDT

Calming the Storm: Clear PFAS Communication for Scared Water Customers and Systems

Effective communication about Per- and Polyfluoroalkyl Substances (PFAS) in water systems is crucial for public health and regulatory compliance. This abstract explores current strategies, challenges, and future directions in PFAS communication within water management contexts

Speaker(s): [Swaroop Puchalapalli](#), STV

09:30 AM MDT

Engaging Underserved Populations in Program Development

The City of Greeley Water Conservation team is committed to improving services for low-income residents by introducing two new programs in 2024: Local Initiative Landscaping and Conservation (LILAC) and Flush and Flow, both shaped by community feedback. Discover how Greeley is addressing barriers to create equitable water efficiency improvements and foster stronger engagement across diverse neighborhoods.

Speaker(s): [Margarita Padilla](#), City of Greeley

WED013 - Prioritizing Water Investments Using Decision-making Tools and Procedures

Moderator(s):

Event Type: Educational Sessions

Event Track: Intelligent Water

08:30 AM - 11:30 AM MDT | Wed | Room 501 - 502

OVERVIEW:

PRESENTATIONS:

08:30 AM MDT

Risk-Based Optimization As A Decision-Making Framework & Tool to Prioritize Water Infrastructure Investments

Speaker(s): [Ghina Yamout](#), CDM Smith

09:00 AM MDT

Adapting to the Flow: Rethinking CIP Planning Amidst Declining Water Demands

Conservation measures have reshaped water demand patterns, influenced infrastructure investments, and guided long-term planning strategies. Eastern Municipal Water District (EMWD) in California has been at the forefront of implementing water conservation measures to address the state's persistent water scarcity challenges. The significant impacts of these conservation efforts on water supply management and capital improvement program (CIP) planning within the district will be discussed.

Speaker(s): [Brenda Estrada](#), West Yost

09:30 AM MDT

Innovative Decision-Support Tool for Climate-Resilient Water Infrastructure: Optimizing Investments for Utility Managers

As climate change intensifies extreme weather events such as floods, droughts, and wildfires, water utilities face increasing challenges managing stormwater, wastewater, and drinking water services. These impacts, combined with aging infrastructure and limited resources, make it difficult for utilities to prioritize and justify climate adaptation solutions (CAS). This project introduces an innovative decision-support tool that allows utility managers to assess and optimize CAS investments through a holistic, cost-benefit approach. The tool's unique design integrates climate risk data, real-time operational needs, and community input to model the cumulative benefits of multiple CAS portfolios. Piloted with four diverse utilities in Chester,

Speaker(s): [Lisa O'Fiesh](#), Corvias Infrastructure Solutions

10:00 AM MDT

Climate Change Resilience Assessment and Adaptation Framework, Case Study for the Elgin Area and Lake Huron Water Supply Systems

This presentation provides utility managers with options for assessing risk and resilience associated with potential climate change hazards to their water system based on scenarios with tailored timeframes and available models. Arcadis supported two regional water supply systems/utilities with developing a holistic and quantitative Climate Change Resilience Assessment and Adaptation Framework methodology based on integration and evaluation of international and national standards, including the AWWA/ANSI J100 standard. This framework can be applied at the infrastructure, system-wide, and organizational level. You will learn about development of this framework and to conduct an assessment and adaptation strategy over time.

Speaker(s): Corie Rockett Sapp, Arcadis

10:30 AM MDT

What FEMA's National Flood Insurance Program (NFIP) & Federal Flood Risk Management Standard (FFRMS) Mean for Water Utilities

Flood protection standards for critical and essential facilities such as water infrastructure are crucial to a community's resilience. Many existing utility-critical facilities are situated within regulated floodplains, posing significant challenges such as vulnerable equipment placement, service disruptions, and complicated post-disaster recovery. Our presentation highlights key opportunities for water utility capital improvement plans, flood control projects, GIS mapping, and hazard mitigation plan action items. We will demonstrate how critical facility functionality is integral to community resilience and attendees will understand the importance of flood protection standards as it relates to their existing and future water systems.

Speaker(s): Michael Bomar, Tetra Tech

11:00 AM MDT

The Santa Clarita Valley Water Agency Water Resilience Initiative

The Santa Clarita Valley Water Agency (SCV Water) is a public water agency that serves a population of 275,000 through 74,000 retail water connections across 195 square miles. The mission of SCV Water is to provide responsible water stewardship to ensure the Santa Clarita Valley has reliable supplies of high-quality water at a reasonable cost. SCV Water supplements local groundwater supplies with State Water Project water from northern California. As climate change continues to bring unprecedented droughts to the State of California, SCV Water has been working to plan for a resilient and sustainable water future.

Speaker(s): Najwa Pitois, SCV Water

WED014 - Digital Water Treatment Solutions

Moderator(s): Elizabeth Loughnane

Event Type: Educational Sessions, Focused Insights

Event Track: Intelligent Water

08:30 AM - 10:00 AM MDT | Wed | Room 406

OVERVIEW: This session showcases digital solutions implemented throughout various steps of the water and wastewater treatment process. The speakers will dive into how digitization of processes was key in driving efficiency and maintaining security while leveraging real-time data. If you are looking for opportunities to implement digital water solutions into your treatment processes, this session will offer insights into navigating that journey.

PRESENTATIONS:

08:30 AM MDT

Harnessing Digital Twin Technology for Optimized Wastewater Treatment: Reducing Costs, Emissions, and Enhancing Process Efficiency

In response to the increasing environmental challenges, process inefficiencies, and ongoing staff shortages faced by utilities, digital twin technology offers a transformative solution. This presentation will unveil the latest advancements in our new digital twin product, designed to drive process optimization, reduce environmental impact, and address operational gaps. Through real-world pilot results, we will demonstrate how this innovative tool, integrated with our data management solution, is helping utilities achieve sustainable, efficient, and reliable operations.

Speaker(s): Kassia Skolski, Aquatic Informatics

08:52 AM MDT

Predicting Water Treatment Processes for Extreme Weather Events Using a Deep Learning Model

This study addresses the challenges faced by water treatment plants due to the increasing frequency of extreme weather events linked to climate change, necessitating a shift from manual operations to automated systems. We present a deep learning model designed to predict key

operational parameters under normal and extreme conditions. Utilizing a hybrid deep learning architecture, the model analyzed real-time data from a water treatment plant in South Korea. The results showed strong predictive capabilities, enhancing operational responsiveness and resource optimization, thereby highlighting the potential of deep learning to transform water treatment process management in a changing climate.

Speaker(s): [Mi Hyun Park](#), *Dongguk University*

09:14 AM MDT

Boosting Efficiency at Westminster's 15 MGD Drinking Water Facility with Collaborative Digital Solutions

The City of Westminster is designing a new 15 MGD drinking water facility, leveraging advanced digital technologies to streamline project delivery, enhance collaboration, and strengthen design coordination. This involves working with four consulting firms across different regions and time zones, using effective communication tools. Central to this is BIM, which has accelerated the project timeline and improved quality control. The facility will treat water from Standley Lake using biofilters and ozone, replacing the aging Semper facility. The presentation will showcase how BIM has helped adapt the design to optimize costs and minimize delays, the benefits of digital innovation, and collaboration in large-scale projects.

Speaker(s): [Tim Rynders](#)

09:36 AM MDT

Enhancing Operational Visibility with Real-Time Data to your Digital Twin Solution while Securely Maintaining your SCADA System

Participants will learn from water/ wastewater operators about Digital Twin-supporting technologies that can physically protect air-gapped operational data networks (SCADA and ICS) while allowing real-time data out to business decision support systems on the corporate network, thereby enhancing operational visibility.

Speaker(s): [Christian Hager](#), *Fend Incorporated*

WED019 - Hot Topic Session on Lead Service Line Replacement Programs

Moderator(s):

Event Type: Educational Sessions

Event Track: The Latest on Lead And Copper

08:30 AM - 10:00 AM MDT | Wed | Mile High Ballroom 4ab

OVERVIEW: Identify and focus on the issues of the lead and copper rule associated with private property and replacing service laterals. The presenters will discuss funding strategies or programs they have developed to address these service laterals and what measure or steps they have taken to increase customer participation in these programs.

PRESENTATIONS:

08:30 AM MDT

Not In My Front Yard: How the LCRR Takes Water Utilities onto Customer's Private Property

The title, "Not in My Front Yard," encapsulates the common sentiment associated with infrastructure projects, which now extends to water utilities' initiatives as they enter residential spaces to comply with the LCRR and eventually, the LCRI. As the City of Englewood progressed toward construction, they embraced a multifaceted approach to engagement, encompassing updates to the municipal code, leveraging social media platforms, organizing public meetings, and personally responding to individual customers aiming to not only facilitate public education but also to foster trust in the utility's initiatives.

Speaker(s): [Jasmine Gamboa](#)

09:00 AM MDT

Increasing Customer Participation in the Lead Service Line Replacement Program

Greater Cincinnati Water Works has been replacing private lead service lines through the lead service line replacement program since 2018. Participation is voluntary in the program, which has changed from a cost-sharing model to fully utility funded. Despite the move to be fully funded, the program had seen only a slight improvement in participation. However, recent changes to the outreach process have brought significant increases in participation. This presentation will go through the outreach process that has resulted in over 80% participation in a voluntary program.

Speaker(s): [Kevin Kappers](#), *Greater Cincinnati Water Works*, [Kevin Osborne](#), *Greater Cincinnati Water Works*

09:30 AM MDT

The Evolution of a LSLR Program – The Pittsburgh Water Success Story

Born of a lead action level exceedance crisis in 2016, the Pittsburgh Water and Sewer Authority's (PWSA) Lead Service Line Replacement (LSLR) Program has evolved significantly from the early days of replacing only public-side LSLs. The program has progressed over the years as PWSA

days of replacing only public-side LSLs. The program has progressed over the years as PWSA works to remove all, both public- and private-side, residential LSLs by the end of 2027. At over 11,500 public and 8,300 private LSLRs removed to date, PWSA has a wealth of experience to share with other utilities.

Speaker(s): Shannon Connell, Pittsburgh Water & Sewer Authority

WED021 - Real-Time-Monitoring: Leveraging Today's Technology to Advance our Systems

Moderator(s): Delmas Johnson

Event Type: Educational Sessions

Event Track: The Future of Water | Roundtable Sessions

08:30 AM - 10:00 AM MDT | Wed | Four Seasons Ballroom 2-3

OVERVIEW: This session will highlight current advancements in technology that support the integration of real-time monitoring into utility operations. Speakers will also address operational needs that future real-time monitoring technologies will need to address to further integration. Participants will get perspectives from real-time monitoring technologists, utility practitioners, consultants, and public communications specialists. The session will start with perspectives from the panel (10 min each), this will be followed by Q&A session with the audience (30 min). If possible, a real-time survey will be administered to the audience regarding their thoughts on advancing real-time monitoring. Survey results will be displayed before the Q&A or at the end of the session (15 min)."

PRESENTATIONS:

08:30 AM MDT

Real-Time-Monitoring: Leveraging Today's Technology to Advance our Systems

Speaker(s): Delmas Johnson, Hansen, Allen & Luce, Ben Stanford, Hazen, Samantha Villegas, Raffelis, Shirley Ben-Dak

WED022 - AI in Water Utilities: Transforming Operations, Risk Management, and Regulatory Compliance

Moderator(s): John Nolte

Event Type: Educational Sessions

Event Track: Legal, Financial, and Management

08:30 AM - 10:00 AM MDT | Wed | Four Seasons Ballroom 4

OVERVIEW: This session will look at the financial, legal, and management aspects of AI and how it is changing the game in the water sector. Case studies would present how water utilities are using and managing AI, the financial and legal challenges encountered, and possibly include the perspective(s) from AI companies and how they are supporting AI products/implementation and water utilities

PRESENTATIONS:

08:30 AM MDT

AI in Water Utilities: Transforming Operations, Risk Management, and Regulatory Compliance

Speaker(s): Mano Chelladurai, TBD, Seth Johnstone, Alireza Parhami, DC Water

WED023 - Turf Transformation in Colorado: Water Leaders Redefining Landscapes and Conservation

Moderator(s): Victoria Arling

Event Type: Educational Sessions

Event Track: Water Use Efficiency Practices

08:30 AM - 10:00 AM MDT | Wed | Room 504

OVERVIEW: Join water leaders from Colorado that are paving the way to reduce outdoor water demand and promote sustainable landscapes through turf replacement. Panelists will discuss innovative policies, community-driven initiatives, funding strategies, case studies, and more, that support landscape transformation across the state, positioning Colorado as a leader in water conservation and efficiency.

PRESENTATIONS:

08:30 AM MDT

Turf Transformation in Colorado: Water Leaders Redefining Landscapes and Conservation

The Department of Local Affairs (DOLA): Sharing insights about their new model land use codes, with a focus on landscaping standards.

Speaker(s): [Victoria Arling](#), [Drew Beckwith](#), [City of Westminster Utilities](#), [Lisa Pace](#), [Colorado Springs Utilities](#), [Dylan King](#), [Town of Erie](#), [Libby Tart](#), [Commerce City](#)

WED024 - Water Loss Control Plan Implementation

Moderator(s):

Event Type: Educational Sessions

Event Track: Water Use Efficiency Practices

08:30 AM - 10:00 AM MDT | Wed | Mile High Ballroom 1ab

OVERVIEW: Controlling water loss from distribution systems is an on-going challenge for water utilities. Hear from utilities that are taking on the challenge and making real progress in controlling real losses.

PRESENTATIONS:

08:30 AM MDT

AMI Data and Colorado Springs Utilities' Digital Twin – Water Loss, Diurnal Curves and Operational Forecasting

This presentation will summarize Colorado Springs Utilities' work in the effort to leverage AMI and AMR data for improving Utilities digital twin of the finished water distribution system. It will identify key and sometimes unexpected findings related to diurnal demand uses and water loss. It will present this data in light of how it supports Utilities vision for improved operational control, water loss control, continuous water quality modeling, and energy optimization.

Speaker(s): [Jerry Edwards](#), [Colorado Springs Utilities](#)

09:00 AM MDT

See an End to NRW Loss with Data-Backed Leak Detection

Imagine running a marathon with no clear indication of the finish line. This scenario best describes the situation several utilities are facing by only indicating non-revenue water (NRW) values through annual audits. The Village of Skokie (Illinois), upon recognizing the potential for improvement in its water loss management, proactively shifted its program approach and incorporated near real-time water loss tracking and improved leak detection scheduling and coverage areas into its strategy.

Coupling leak detection with monitoring has yielded enormous results, including a projected 250-million-gallon reduction in purchased water for 2024.

Speaker(s): [Robert Eisenrich](#), [McKim & Creed](#)

09:30 AM MDT

A Tale of Two Cities - How Transatlantic Partnerships are Helping Communities Reduce Water Loss

The goal of this presentation is to demonstrate how transatlantic collaboration has helped build stronger water use efficiency, leak detection programs, and reduced water loss. There will be three speakers discussing the findings from a fact-finding delegation to Denmark relating to water use efficiency. The speakers will be a representative from the Water Technology Alliance of Denmark, a speaker from the City of Folsom, and a speaker from a Danish utility. Each speaker will give their perspective on "Water Use Efficiency as a Way of Life"; their current status, the challenges they've experienced establishing their programs and the results they have seen, and/or what they are expecting to see in the future.

Speaker(s): [Todd Eising](#), [City of Folsom](#)

WED027 - Industry Leading Treatment Strategies on the Front Range

Moderator(s):

Event Type: Educational Sessions

Event Track: Water in the West

08:30 AM - 10:00 AM MDT | Wed | Mile High Ballroom 4cd

OVERVIEW: The Front Range of Colorado is continuing to experience high sustained growth stressing aging utility infrastructure that is also confronted with new regulatory challenges. Colorado utilities are tackling these treatment challenges head on through innovation, leveraging existing assets, and building big for a sustainable future. Attendees at this session will learn of Colorado's newest 75 mgd treatment plant that integrates the latest tools for operations efficiency, alternative disinfection strategies at a 100 year old facility, and testing of novel media for optimizing PFAS removal.

PRESENTATIONS:

08:30 AM MDT

Denver Water's 75 MGD Northwater Treatment Plant: Challenges and Successes from Year One

This presentation describes lessons learned from operating Denver Water's new 75 MGD Northwater Treatment Plant, discusses the transition from construction and startup to operation, and presents plans for future optimization. These lessons will be applicable to a wide range of water treatment plant projects, from new construction and existing plant modifications to optimization studies.

Speaker(s): Hilary Feier, Jacobs

09:00 AM MDT

Revitalizing a Century-Old Chlorine Contact Basin: Modernizing the Disinfection Approach for a 200 MGD Water Treatment Plant

This presentation explores Denver Water's strategic initiative to modernize a century-old disinfection system at the 200 MGD Marston Treatment Plant. Attendees will learn about the evaluation process used to compare disinfection alternatives, including UV, sodium hypochlorite, and chlorine dioxide. The session will highlight strategies to overcome site-specific constraints such as constrained footprint, congested yard piping, and adjacent residential neighborhoods, all while maintaining full treatment capacity through high-demand season. By sharing lessons learned and insights into the decision-making process, this presentation offers valuable guidance for professionals involved in water treatment infrastructure upgrades.

Speaker(s): Lars Ellingson, Denver Water

09:30 AM MDT

Operational Challenges and Lessons Learned from Pilot-testing Novel Media in a Treated Surface Water

In this work, the operational challenges associated with piloting novel media for PFAS removal in a treated surface water will be explored. The PFAS pilot was installed in Englewood, CO on a treated combined filter effluent. The performance of two well established media, one granular activated carbon and one anion exchange resin, were compared against two novel media - a surfactant modified clay and a cyclodextrin adsorbent. The two novel media were evaluated for their ability to remove PFAS, pre-treatment needs, and operational requirements. This is one of the first pilot-studies to employ these media for surface water treatment and the lessons learned from operation will be discussed.

Speaker(s): Caitlin Glover, Stantec

WED030 - Advances in Water Resources Planning - A Teaser from the M50 Update

Moderator(s): Josh Weiss

Event Type: Educational Sessions

Event Track: Water Resources Planning, Protection & Management

08:30 AM - 11:30 AM MDT | Wed | Room 603

OVERVIEW: Explore the latest water resources planning and management approaches designed to meet the needs, goals and outcomes for the 21st Century as presented in the M50 manual update. This facilitated panel of water leaders will provide guidance on advancing the water resources approaches outlined in the M50 manual and use recent case studies to demonstrate how these approaches achieve the end goals of equity, resilience, and One Water thereby improving the prospects of sustainable access to water for all users.

PRESENTATIONS:

08:30 AM MDT

Advances in Water Resources Planning - A Teaser from the M50 Update

This session will highlight water resources planning and management approaches with needs, goals, and outcomes for the 21st century, as presented in the M50 manual update. Specifically, it will showcase the advances in water resources planning from project drivers to the end goals of equity, resiliency, and One Water aimed at improving the prospects for sustainable access to water for all.

Speaker(s): [Jessica Fritsche](#), *fritsche*, [Josh Weiss](#), *Hazen and Sawyer*

WED031 - Small Systems Approach to Water Supply Challenges

Moderator(s):

Event Type: Educational Sessions

Event Track: Water Resources Planning, Protection & Management

08:30 AM - 10:00 AM MDT | Wed | Room 407

OVERVIEW: When it comes to securing a reliable, safe, and sustainable water supply, small systems are faced with limited resources, fluctuating water demands, and potential contamination risks, these systems need creative, tailored solutions to ensure the long-term health of their communities. This session will explore the unique water supply challenges faced by small systems and provide practical strategies for overcoming these hurdles.

PRESENTATIONS:

08:30 AM MDT

Wayland's PFAS Woes and Wins: Small Water System Seeks Emergency and Long-term Alternative Water Supplies

The MWRA water supply for Metro Boston has flowed through Wayland, MA for over 120 years. Today, Wayland hosts parts of all three water supply conduits but lacks an interconnection. Due to PFAS contamination, the town evaluated alternative supplies, including PFAS treatment, new interconnections, and hybrid approaches. The Town selected, designed, and constructed an emergency connection to the MWRA's Hultman Aqueduct to ensure water supply security during the design, permitting, and construction of a long-term supply. Wayland is now designing a long-term water supply connection to the MWRA's MetroWest Water Supply Tunnel and Hultman Aqueduct, including a one-mile transmission main, two miles of distribution upgrades, and a pump station.

Speaker(s): [Michael Sanders](#), *Kleinfelder*

09:00 AM MDT

Promoting Small System Sustainability with the Oklahoma LRSP Program

The presentation will describe Oklahoma's Long Range Sustainability Plan (LRSP) Program, from its beginnings as a cooperative program created by an alliance of state environmental agencies and technical assistance providers to its current status as a state-wide honor and indicator of a public water and/or wastewater system that has committed to excellence in operations and has excelled in all aspects of sustainability.

Speaker(s): [Brandon Bowman](#), *ORWA*

09:30 AM MDT

History and Development of the Western Area Water Supply Project

Tami Madsen, Executive Director of the Western Area Water Supply Authority (WAWSA) and Cory Chorne, PE, Program Manager with Advanced Engineering and Environmental Services, LLC, will discuss the development, history, and status of the WAWSA. WAWSA owns, operates, and manages the WAWSP, a regional water supply project that serves a 5,000 square mile service area in the Bakken region of North Dakota. WAWSA was created in 2011 to construct a regional water delivery system to provide water for the rapidly growing population, which doubled between 2009 and 2012 and tripled by 2015. In addition, WAWSA developed a Private-Public-Partnership to sell excess water supply to the energy industry to aid with financing the project.

Speaker(s): [Cory Chorne](#), *Advanced Engineering and Environmental Services, L*

WED033 - One-Water Solutions - The Role of Water Reuse

Moderator(s): [Scott Alpert](#)

Event Type: Educational Sessions

Event Track: Reuse

08:30 AM - 11:30 AM MDT | Wed | Mile High Ballroom 2ab

OVERVIEW:

PRESENTATIONS:

08:30 AM MDT

Reclaimed Water Meets Stormwater/Rainwater: Water Quality Improvement for Potable Reuse

This presentation explores the feasibility of using excess urban stormwater as a low-total dissolved solids (TDS) diluent to improve reclaimed water quality for direct and indirect potable reuse (DPR/IPR). A key challenge for DPR/IPR is reducing TDS, as treated wastewater often exceeds the secondary contaminant level of 500 mg/L. We evaluate stormwater from well-managed systems as a low-TDS source in a non-RO-based DPR treatment train. Using Central Texas water quality and precipitation data, we model water blending scenarios and discuss the treatability and sustainability of this novel approach.

Speaker(s): Keisuke Ikehata, *Texas State University*

09:00 AM MDT

Acknowledging the Extent of De Facto Reuse in US Surface Waters: Are PFAS the Tipping Point? Lessons from WRF 5082 and UCMR5

This presentation summarizes findings from WRF 5082, which provided a comprehensive discussion of PFAS source identification and mitigation strategies for utilities across the one water spectrum. One major conclusion was that PFAS would be much more widespread in surface waters than assumed by prior evaluations – including those underlying the development of MCLs - due to the pervasive impacts of de facto reuse. The predictions made by WRF 5082 are now being corroborated by UCMR5 data, which not only confirm the previously unexpected widespread presence of PFAS in surface waters but support the de facto reuse connection because the most prevalent PFAS detected in UCMR5 data are the same as those most prevalent in wastewater effluents.

Speaker(s): Eva Steinle-Darling, *Carollo Engineers*

09:30 AM MDT

Water Reuse Treatment Plant (WrTP) Model Development

An initial step in overcoming technical barriers to water reuse implementation is to develop critical constituent removal models to understand individual treatment process capacities. In addition, an understanding of the performance potential of different treatment process trains and associated costs is then needed to allow a comprehensive technical evaluation of their implementation potential for water reuse. This work strives to provide an initial assessment and a comprehensive user-friendly tool for utilities, consultants and regional planning agencies to assist in their path to advance water reuse in their community.

Speaker(s): R. Scott Summers

10:00 AM MDT

Developing a Nimble Treatability Investigation Program from the Ground Up

The City of Boise's (COB's) Recycled Water Program (RWP) was established to preserve local water by protecting the Boise River, bolstering the local groundwater supply, and creating resiliency against the impacts of climate change. They developed a complex water quality sampling plan involving analysis of over 700 different analytes and selected a suite of potential future uses to define treatment objectives. The audience will learn about how to construct and execute a "living" test plan to develop the information needed to answer the technical data needed to inform decision making and treatment requirements when developing a new water source.

Speaker(s): Erin Mackey, *Brown and Caldwell*

10:30 AM MDT

Coagulation for Non-membrane Water Reuse: Carbon and Trace Metal Removal

Wastewater reuse will be a critical strategy to adapt to climate change. For non-membrane reuse processes, coagulation may be an essential pre-treatment to meet low dissolved organic carbon (DOC) targets. Jar testing over 20 diverse secondary wastewater effluents with alum demonstrates both the effectiveness of coagulation for non-membrane reuse and the power of fluorescence for predicting coagulation performance. This work challenges the transferability of specific absorbance (SUVA) to predict DOC removal from surface waters to wastewater and proposes that fluorescence metrics could be better monitoring surrogates. Analysis showed effective removal of toxic heavy metals below detection limits.

Speaker(s): Emma Wilder, *University of Colorado Boulder*

11:00 AM MDT

Identifying and Selecting Chemicals for Monitoring and Control at DPR Applications

The growing scarcity of freshwater resources, coupled with the ongoing urbanization pressures, prompted many communities consider treated wastewater as a source. Some states have enacted direct potable reuse (DPR) regulations and others are in the process. One of the primary challenges associated with implementing DPR is determining the appropriate prioritization and control of the numerous chemicals present in wastewater, especially those that may pose health risks but are not currently regulated under the Safe Drinking Water Act (SDWA). DPR regulations aim at identifying and prioritizing chemicals for monitoring and treatment. The presentation will offer an overview of the approach developed for Arizona's DPR regulations.

Speaker(s): Zaid Chowdhury, *Garver*

Moderator(s): Susheera Pochiraju

Event Type: Educational Sessions

Event Track: Water Quality Challenges

08:30 AM - 10:00 AM MDT | Wed | Mile High Ballroom 1cd

OVERVIEW: This session will discuss monitoring methods and treatment technologies for algae, cyanobacteria, and cyanotoxins.

PRESENTATIONS:

08:30 AM MDT

Close Call, Safe Outcome: Proactive Strategies for Mitigating Harmful Algae Blooms in River Ecosystems

In the summer of 2024, a cyanotoxin producing, harmful algal bloom occurred on the upper Mississippi River, which is a source of supply for four water treatment plants in Iowa and Illinois. Proactive source water monitoring revealed increasing cyanotoxins in this historically low-risk drinking water supply. This presentation will share insights into the value of utilizing crisis response teams for source water contamination events, benefits of cyanotoxin management plans, and novel data from the bloom event.

Speaker(s): Lauren Weinrich, *American Water Company*

09:00 AM MDT

Austin Water's Cyanotoxin Monitoring and Response Plan: Proactive, Prepared, and Proven to Protect Public Health

Cyanotoxins have been detected in the City of Austin's source waters for its three water treatment plants. Austin Water developed the Cyanotoxin Monitoring and Response Plan to adhere to EPA Health Advisory Levels for cyanotoxins and safeguard the health of the City of Austin's residents. During the summer and fall of 2023 and 2024, Austin Water (AW) implemented the Response Plan at its three water treatment plants. AW will share its approach to implementing the Response Plan, including lessons learned from elevated source water detections, bench scale testing, and modifications to the Response Plan to optimize future responses.

Speaker(s): William Bailey, *Austin Water*

09:30 AM MDT

Using Flow Imaging Microscopy to Build Phytoplankton & HABs Community Composition Profiles Impacting Water Supplies

This presentation will highlight the impact that common phytoplankton and cyanobacteria have of producing water quality issues at a drinking water facility as well as their monitoring program of said microorganisms. It will discuss the importance of identification of common and harmful phytoplankton, the different water quality issues they can cause along with the impact those problems can have on the plant's production of drinking water and customer faith in receiving safe drinking water.

Speaker(s): Katharine McNaught, *Passaic Valley Water Commission*

WED037 - Diversity in Leadership

Moderator(s):

Event Type: Educational Sessions, Diversity

Event Track: Water Utility Management

08:30 AM - 11:30 AM MDT | Wed | Mile High Ballroom 3ab

OVERVIEW: The business case for diversity in executive teams continues to grow. In the 2023 study by McKinsey and Company, "Diversity matters even more: The case for holistic impact", "Companies with representation of women (at the executive level) exceeding 30 percent (and thus in the top quartile) are significantly more likely to financially outperform those with 30 percent or fewer. Similarly, companies in our top quartile for ethnic diversity (at the executive level) show an average 27 percent financial advantage over others." In this track, we will explore first the business case for leadership diversity at senior and executive levels then delve into case studies exploring both the challenges and impacts of several water industry organizations of different types who have successfully built diverse senior and executive leadership teams.

PRESENTATIONS:

08:30 AM MDT

Setting the Stage: Unleashing the Power of Leadership Diversity

Speaker(s): Donnell Duncan

09:00 AM MDT

Building a Diverse Leadership Team at Henry County Water Authority

Speaker(s): Tony Carnell, Henry County Water Authority

09:30 AM MDT

Keeping Open for SFPU

10:00 AM MDT

GWLA -Putting Together a Diverse Leadership Team

Speaker(s): William Wolfson, Great Lakes Water Authority

10:30 AM MDT

Building a Culture of Inclusive Leadership at Prince William Water

Speaker(s): Shailaja Poluru, Prince William Water Authority

11:00 AM MDT

Panel Discussion

Speaker(s): Donnell Duncan, Tony Carnell, Henry County Water Authority, William Wolfson, Great Lakes Water Authority, Shailaja Poluru, Prince William Water Authority

WED038 - Credentialing: The Building Blocks to Your Future

Moderator(s): Veronica Cavera

Event Type: Educational Sessions

Event Track: Water Education and Workforce

08:30 AM - 10:00 AM MDT | Wed | Room 401 - 402

OVERVIEW:

PRESENTATIONS:

08:30 AM MDT

Credentialing: The Building Blocks to Your Future

Speaker(s): Paul Bishop, Water Professionals International, Veronica Cavera, American Water Works Association, Thomas Healy, Water Professionals International

WED041 - PFAS Design and Implementation

Moderator(s):

Event Type: Educational Sessions

Event Track: Advances in Water Treatment

10:00 AM - 11:30 AM MDT | Wed | Room 401 - 402

OVERVIEW: This section will provide practical solutions for the design and implementation of PFAS Treatment

PRESENTATIONS:

10:00 AM MDT

Achieving Quality Upgrades in Advance: Design Guidelines and Aqua PA's Journey to PFAS Compliance

In April 2024, the EPA released a new MCL targeting PFAS. To achieve compliance, Aqua Pennsylvania has a significant task in analyzing treatment needs and planning capital projects for

dozens of facilities. Implementation is being managed as a program which includes multiple design consultants, permitting jurisdictions, and operational districts. Unified design guidance will provide consistency across the breadth of sites and range of requirements. This presentation will describe the challenges Aqua PA faces in providing improvements to its water infrastructure, and how design standards were selected and developed. The objective is to demonstrate the benefits of standardized design guidelines, and share lessons learned from this effort.

10:30 AM MDT

Differentiating Fluoropolymer Coatings from PFAS: A Case for Low Concern in Water Infrastructure Protection

Fluoropolymer coatings, a specialized subset of PFAS, are essential in industrial applications, particularly for protecting water infrastructure from corrosion and wear. This presentation explores why fluoropolymer coatings are classified as PFAS of low concern, focusing on their minimal environmental and health risks compared to PFOA and PFOS. The session will discuss the distinction between fully fluorinated backbone fluoropolymers and side-chain fluoropolymers, highlighting their differing environmental behaviors. It will also address the need for a targeted regulatory framework that ensures the continued safe use of fluoropolymer coatings in critical infrastructure.

Speaker(s): Kyle Frakes, *Tnemec Company, Inc.*

11:00 AM MDT

Rapid Deployment of Drinking Water Treatment for Per- and Polyfluoroalkyl Substances (PFAS) at Alameda County Water District

In September 2024, Alameda County Water District completed the construction and commissioning of a 6 million gallon per day ion exchange PFAS treatment facility using an expedited delivery schedule in response to the California PFAS Notification Levels and United States Environmental Protection Agency Maximum Contaminant Levels. The presentation will delve into key strategies for swift decision making, methods implemented to expedite project delivery, challenges from design, construction, and commissioning, and lessons learned from this expedited project.

Speaker(s): Kerri Smyth, *Alameda County Water District*, Benjamin Egger, *Rekha Ippagunta*

WED043 - Removing Inorganics - Pilot Studies

Moderator(s):

Event Type: Educational Sessions

Event Track: Research

10:00 AM - 11:30 AM MDT | Wed | Room 406

OVERVIEW:

PRESENTATIONS:

10:00 AM MDT

A Pilot Testing Journey with Granular Ferric Hydroxide: Arsenic Reduction in ASR Water for Potable Use

Orange County Utilities (OCU) operates a potable ASR well system that is permitted for injecting 2 MGD of potable water into the Lower Floridan Aquifer. OCU has observed arsenic mobilization within their ASR system resulting in elevated arsenic levels in the recovered water exceeding EPA's maximum contaminant level. Therefore, OCU decided to pilot test a granular ferric hydroxide (GFH) media for arsenic removal. This presentation will review the GFH media's ability to remove arsenic during the pilot study, pretreatment operations for iron removal, logistical challenges for pilot source water and disposal, lessons learned from conducting and troubleshooting the pilot, and preliminary conclusions for full-scale design.

Speaker(s): Maria Arenas, *Tetra Tech*

10:30 AM MDT

Evaluation of RCF Technology for Hexavalent Chromium (Cr6) Removal in Drinking Water

Approximately 500 sites across California are affected by the 10 ppb MCL for Cr6. Results from two demonstrations of an innovative technology that uses an electrolytic process to generate a stannous reagent onsite and on-demand will be presented. During the demonstrations, the technology consistently reduced influent Cr6 to non-detectable levels and proved effective in removing Cr6 contamination from drinking water. These findings provide valuable insights for addressing Cr6 contamination challenges and ensuring compliance with the MCL, while supporting RCF with on-site generated stannous for Cr6 removal.

Speaker(s): Vladimir Dozortsev, *AMS*

11:00 AM MDT

Reduction Coagulation Filtration Pilot Testing to Inform Full-scale Design for Hexavalent Chromium Compliance

Reduction coagulation filtration (RCF) is an accepted compliance option for California's upcoming hexavalent chromium [Cr(VI)] regulation. This presentation summarizes a 12-week pilot study completed to evaluate centralized RCF treatment of three of Cr(VI) impacted groundwater production wells. The study's primary drivers were to verify and optimize process performance for Cr(VI) removal, while best managing filter backwash residuals. Optimization opportunities included chemical dose and reaction times, filter media design, hydraulic loading rates, as well as backwash residuals management. The results of this study were then incorporated into ongoing full-scale design decisions.

Speaker(s): Brittany Gregory, Corona Environmental Consulting, LLC

WED051 - Pilot Testing for PFAS - Multiple Considerations | WSRD 8

Moderator(s):

Event Type: Educational Sessions

Event Track: Research

10:00 AM - 11:30 AM MDT | Wed | Room 405

OVERVIEW: These presentations focus on pilot testing for PFAS removal from surface water sources. The first is a large-scale study in New Jersey that evaluates various technologies, including GAC, AIX, and low-pressure RO. The second is a North Carolina study exploring GAC and ion exchange, while tackling challenges like PAC interference and breakthrough prediction through PFAS spiking and modeling. The third covers parallel pilot tests and rapid small-scale column testing to assess GAC, anion exchange resins, and novel sorbents for PFAS removal in a new regional facility in North Carolina. These studies aim to identify effective, sustainable PFAS treatment solutions for surface water treatment plants while considering cost and operational factors.

PRESENTATIONS:

10:00 AM MDT

Surface Water PFAS Pilot Testing – Performance and Lessons Learned from Operating the Largest PFAS Pilot in North America

Veolia North America embarked on the largest PFAS pilot test program for surface water treatment in North America in 2023. Technologies tested included GAC, AIX, Novel Media and Sequential treatment trains. Additionally, Low-Pressure Reverse Osmosis (LPRO) operation and treatment of LPRO concentrate were conducted. The pilot is being run for 1 year and will conclude in early 2025. This presentation will discuss the specific challenges on pilot testing on post-filtration water at a surface water treatment plant, and overall outcomes from the testing program that will drive technology implementation at the existing 188-mgd WTP.

Speaker(s): Joe Nattress, CDM Smith

10:30 AM MDT

Catch-22: Operating a PFAS Pilot while Minimizing PFAS and MIB in Water Delivered to Customers

OWASA first detected PFAS in their raw and finished water supplies in 2018 with average raw water PFOA and PFOS of 62 ppt and 83 ppt, respectively. In May 2024, OWASA embarked on a pilot study to evaluate the performance of alternative PFAS treatment strategies with a key consideration of eliminating PAC from their treatment process. Catch-22: How do you effectively evaluate PFAS treatment strategies while minimizing the concentration of PFAS and MIB in water delivered to customers? This paper will present full-scale operational modifications to eliminate the influence of PAC feed on GAC performance, pilot design considerations to reintroduce PFAS in the pilot feed, and novel modeling techniques to expedite breakthrough evaluations.

Speaker(s): William Rhoads

10:30 AM MDT

Phone a Friend: Piloting and RSSCT for a Greenfield Water Plant in North Carolina

The Cape Fear River Basin, known to have higher PFAS levels, has challenged regional facilities to provide increased removal in the NC Triangle Region. The Western Intake Partnership (WIP) took a practical, multi-pronged approach to test PFAS removal for a 30-mgd greenfield WTP sourced from the basin. A 10-month pilot was conducted at a facility neighboring the proposed intake. RSSCTs were run in parallel to estimate the effects of raw water location, PAC addition, and different coagulants on PFAS media lifespan. The 10-month pilot was used to assess seasonal variations, as well as operational considerations such as anion exchange biofouling control. The study optimization, logistics, results, and proposed design will be reviewed.

Speaker(s): Kara DeGroot, CDM Smith

WED058 - Capital Project Delivery: Projects with a Twist | ECD 8

Moderator(s): Trooper Smith

Event Type: Educational Sessions

Event Track: Capital Improvement Projects: Design, Construction, and Delivery

10:00 AM - 11:30 AM MDT | Wed | Mile High Ballroom 4ab

OVERVIEW: This session highlights three projects that may seem typical but each have a unique twist in the project delivery. Attendees will learn how progressive design-build can drive a schedule at a U.S. Air Force Base's water treatment plant, lessons learned in converting an ongoing project to a different delivery method, and some options that can be incorporated into design-bid-build.

PRESENTATIONS:

10:00 AM MDT

Zero to Mach 2.5 in 13 Months: Design Build for the Mountain Home AFB WTP

A fast-paced design build project for a greenfield 3.5-MGD WTP at the Mountain Home Air Force Base in Idaho was awarded in May 2024 with groundbreaking in September of the same year. The WTP design consists of raw water storage and pumping, dissolved air flotation, multi-media filtration, GAC, and UV and chlorine disinfection to treat high-algae, moderate-turbidity raw water. Schedule limitations required the project team to think outside the box on design development and project roles. This presentation will discuss challenges and keys to success for fast-paced design-build projects.

Speaker(s): Christi Meyn, Jacobs Engineering

10:30 AM MDT

On-Ramping a CMAR: Converting an Ongoing Program at a Water Treatment Plant over to CMAR

This talk will discuss how DWU's journey toward converting the WQI program, which had been delivered using DBB, over to CMAR, and will discuss challenges encountered when on-ramping them to program in mid-construction.

Speaker(s): Gabriel Trejo, Arcadis U.S., Inc.

11:00 AM MDT

Collaborative Procurement with Design-Bid-Build Delivery - Integrated Pipeline Project Section 19 Long Tunnels

Abstract describes a project that utilized collaborative procurement within a Design-Bid-Build delivery. Project includes construction of large diameter pipeline and five tunnel crossings. This presentation will discuss project conditions, constructability reviews, the collaborative CSP procurement, and risk management for this interesting project. Status of construction to date will be addressed with respect to these points.

Speaker(s): Matt Gaughan, Plus Six Engineering, LLC

WED062 - Cyber Threat Impacts on Utility Ratings and Insurance

Moderator(s): Kevin Morley

Event Type: Educational Sessions

Event Track: Legal, Financial, and Management

10:00 AM - 11:30 AM MDT | Wed | Four Seasons Ballroom 4

OVERVIEW: This interactive session will feature an overview and discussion on cybersecurity risk management and its direct fiscal implications for water system credit ratings, insurance coverage, and incident response actions. Leading experts from the water utility, insurance, ratings and financial communities will share their insights on marketplace expectations and real world consequences, including their influence on water systems enterprise risk management strategies.

PRESENTATIONS:

10:00 AM MDT

Cyber Threat Impacts on Utility Ratings and Insurance

Speaker(s): Omid Ramani, Fitch Ratings, David White, Axioux

WED064 - Water Loss Auditing

Moderator(s):

Event Type: Educational Sessions

Event Track: Water Use Efficiency Practices

OVERVIEW: To improve water loss from distribution systems, you first have to know what you are losing and then track metrics to assess your progress in reducing losses. This session includes examples on how efforts in Colorado and California are focusing utility attention on measuring water loss and tracking progress. A third example shows how a utility in Florida is using satellites to complement on-the-ground technology to find leaks for treated and reclaimed distribution systems.

PRESENTATIONS:

10:00 AM MDT

Reaching the Summit: Colorado's Statewide Water Loss Program Ascends its Third Phase

Every water system faces the challenge of water loss control. The Colorado Water Loss Initiative helps guide Colorado water utilities to build their water loss program by establishing a baseline of water audit data and advanced validation practices to better inform how to properly invest in their water loss intervention strategies.

Speaker(s): Drew Blackwell, Cavanaugh

10:30 AM MDT

Preparing for California's Water Loss Standards: Lessons from Eight Years of Validated Water Audits

The California Department of Water Resources has accrued and published one of the largest water loss audit datasets in the country, which contains over 3,000 unique validated water loss audits submitted from 2017 to 2024. E Source has analyzed this dataset to provide insight on water loss performance indicators at the statewide level and among utilities with similar system characteristics, and gauge utilities' progress towards compliance with the SWRCB's water loss standards. E Source will highlight changes in water loss performance indicators from 2017 to 2024 to assess statewide variability in water audit data and readiness for compliance with the SWRCB water loss standards.

Speaker(s): Madeline Gorchels, E Source

11:00 AM MDT

Taming Real Water Loss with a Technology Trifecta

Texarkana Water Utilities serves nearly 30,000 connections across 2 states. Recent changes in source water ownership made reducing real water loss a top priority. The utility used a performance contract to fund real and apparent water loss improvement measures. To quickly locate leaks in a service area that runs for 60 miles from east to west and 34 miles from north to south, the utility used 2 scans of L-Band synthetic aperture radar from a satellite. The utility also permanently installed leak noise loggers across residential zones and uses correlating leak noise loggers with cellular radios in commercial zones. This presentation will present the results of the different approaches to real water reduction and gauge their effectiveness.

Speaker(s): Craig Hannah, Johnson Controls, Inc.

WED069 - Blue - Green Strategies for Climate-Adaptive Cities

Moderator(s):

Event Type: Educational Sessions

Event Track: Water Resources Planning, Protection & Management

10:00 AM - 11:30 AM MDT | Wed | Mile High Ballroom 4cd

OVERVIEW: "This session explores transformative initiatives associated with building climate-resilient, multi-benefit projects that integrate "grey" (streets/sidewalks), "green" (landscaping/biodiversity), and "blue" (stormwater/water quality) infrastructure strategies to respond to climate change impacts and build resilient infrastructure and communities. Recent case studies in New York City and Los Angeles will be presented that are designed to fortify urban environments against climate-related challenges. From flood planning to green infrastructure to cloudburst resiliency, this session delves into innovative approaches, partnerships, and community-focused solutions reshaping how cities respond to stormwater-related threats."

PRESENTATIONS:

10:00 AM MDT

Combining Grey, Green, and Blue Infrastructure Together for Climate-Resilient Transportation Networks in Vulnerable Communities

Climate change impacts are an increasing threat to urban infrastructure and are expected to disproportionately affect vulnerable communities. The Los Angeles City's Department of Public Works Bureau of Street Services (StreetsLA) is collaborating with partner agencies and the community to apply a One Infrastructure approach to proactively plan safe, sustainable, and equitable streets that prioritize the needs and character of each community

equitable streets that prioritize the needs and character of each community.

Speaker(s): Tess Sprague, Brown and Caldwell

10:30 AM MDT

New York City Housing Authority Cloudburst Infrastructure Design: Adapting Urban Amenities to Manage Extreme Rainfall

New York City Housing Authority, nation's largest affordable housing, is pushing design boundaries in building reinforcements, storm surge protection, and cloudburst infrastructure for climate resiliency. At the NYCHA campuses, WSP is leading a team designing cost-effective blue-green infrastructure, relying on detain, absorb, store, transfer strategies. The affordable housing setting requires the integration of blue-green infrastructure with open space planning and design at the forefront to improve the lives of residents and mitigate flooding while providing overall resilience for the surrounding neighborhood.

Speaker(s): Pinar Balci, WSP USA Corp

11:00 AM MDT

Working with Water: Envisioning a Citywide Bluebelt Program

This presentation will provide a history of New York City DEP's Bluebelt Program, an innovative approach to stormwater management by working with natural and engineered water features to store, convey, filter and attenuate flows, and how this program plays a role in New York City's response to climate change and resiliency.

Speaker(s): Sangamithra Iyer, New York City Department of Environmental Protecti

WED074 - Managing Distribution System Residuals and Nitrification

Moderator(s): Meg Roberts

Event Type: Educational Sessions

Event Track: Water Quality Challenges

10:00 AM - 11:30 AM MDT | Wed | Mile High Ballroom 1cd

OVERVIEW: This session explores strategies for optimizing distribution system residuals, introduces a new rapid method for measuring ammonia in water, and examines risk factors and tools for managing nitrification and chloramine stability.

PRESENTATIONS:

10:00 AM MDT

Mix it Up: Distribution System Residual Optimization and Management

Loudoun Water is located in Northern Virginia just outside the Washington DC metropolitan area. With extensive system capacity being installed in undeveloped areas, Loudoun battled water age, high water temperatures, and low system demands creating a challenge to sustain sufficient chlorine residuals in two newly integrated water storage tanks and rising nitrification in far ends of the distribution system. A newly discovered Residual Control System would be piloted and eventually adopted making nitrification a thing of the past. This presentation will highlight installation and operational challenges along with lessons learned providing a potential solution for attendees experiencing similar challenges within their water systems.

Speaker(s): Brandon Isenhardt, Loudoun Water, Tom Caulfield

10:30 AM MDT

An Update on a New Rapid Method for Measuring Free and Total Ammonia in Water

The authors developed a non-proprietary analytical method for measuring total and free ammonia in water in the presence or absence of chloramine. The method relies on the addition of two simple and non-proprietary chemicals as pretreatment before the sample is analyzed with a standard total chlorine analyzer. The result is then used to calculate the total and free ammonia concentrations. The method is the subject of a Water Research Foundation Tailored Collaboration project led by East Bay Municipal Utility District and five other municipal water agencies. The method is being evaluated for both manual and online analytical approaches to be used for proper chloramine boosting in water distribution systems.

Speaker(s): Issam Najm, WQTS, inc.

11:00 AM MDT

Nitrification Non-Sense: Risk Factors, Case Studies, and Practical Tools for Assessing Nitrification and Chloramine Stability

Chloramine decay in water systems is driven by nitrification (biologically-mediated decay) and chloramine disproportionation (chemically-mediated decay). Both processes occur in all chloraminated systems and can challenge water safety if unchecked. This presentation will discuss risk factors, discuss these in context of two case studies from medium-sized utilities, and practical tools like data visualization, jar testing, and USEPA's (free) chloramine decay model. The presenter, an author on the revised M68 nitrification chapter, will review strategies for identifying and mitigating both biological and chemical chloramine decay.

Speaker(s): Simon Horsley, Stantec Consulting Ltd

WED075 - The Long View of Strategic Planning in Three Utilities

Moderator(s):

Event Type: Educational Sessions

Event Track: Water Utility Management

10:00 AM - 11:30 AM MDT | Wed | Room 607

OVERVIEW: Strategic planning is a core concept and function of utilities. However, that function needs to be customized to fit each utility's needs. This session will identify how to do that with some practical examples and interesting approaches employed by utilities in their planning process.

PRESENTATIONS:

10:00 AM MDT

Tailoring a Strategic Planning Framework to Fit Your Utility's Needs

Tualatin Valley Water District (District) recently refreshed its mission, vision, and values to better reflect its evolving role as a regional water provider. As a natural progression, the District launched the Strategic Planning Framework project to align its strategic planning process with the newly defined vision. The final outcome was a well-balanced framework that maintained the strengths of the District's existing process, supplemented by tools and insights from the EUM model. This presentation details how utilities can design a framework tailored to their specific needs, using the EUM model and other resources to streamline and improve outcomes.

Speaker(s): Paul Matthews, Tualatin Valley Water District

10:30 AM MDT

Taking a Long View for Better Strategic and Operational Planning: CAW's 2050 Strategic Plan

Using long view tactics in strategic planning, utilities can address near-term operational challenges, align with longer-term challenges (e.g., regulations, master planning), and foster new solutions to emerging challenges. Traditional strategic planning often uses a five-year planning horizon with limited consideration to slower cycle market trends and solutions. This approach can emphasize near-term needs over positioning for long-term strategic opportunities. It can also promote incremental thinking while stifling new ideas that represent a larger change to business as usual. This presentation will explore various tactics to leverage long view thinking to improve the value of the strategic planning process and enhance plan resilience.

Speaker(s): Katelyn Skornia, Arcadis U.S. Inc.

11:00 AM MDT

New York City Sewer Atlas & Utility Planning

In 2023, DEP shifted to using hydraulic modeling for drainage planning. From this, DEP has launched the Sewer Atlas, a multi-phase program starting with a criticality analysis of the sewer network and evaluating performance at various levels; ultimately providing a dynamic geospatial tool for municipal engineers to facilitate more effective capital planning. The Sewer Atlas supports master drainage planning and the integration of programs – including flow monitoring and smart sewers.

This presentation will focus on the Sewer Atlas, its goals and objectives, and initiatives that are facilitated by this effort. Attendees will learn more about DEP's latest approach to drainage and capital planning, and the City's roadmap to mitigate flooding.

Speaker(s): Steve Carrea, NYC Dept. of Environmental Protection, Russ Dudley

WED078 - Catalyzing Careers in Water Through Learning and Training

Moderator(s): Stephanie Estabrook

Event Type: Educational Sessions

Event Track: Water Education and Workforce

10:00 AM - 11:30 AM MDT | Wed | Room 503

OVERVIEW: From internships to overall workforce development and hiring: highlights why having trained YPs in-house impact projects.

PRESENTATIONS:

10:00 AM MDT

Establishing an Effective Approach to Providing Impactful Experiences for the Next

Developing an Effective Approach to Retaining Impactful Experiences for the Next Generation of Water Industry Professionals

Fostering the next generation of young professionals in the water industry will be crucial for overcoming workforce challenges. Two of the most impactful experiences for a young professional are internships and involvement in mentorship programs. Both opportunities are common for companies and businesses to offer due to their benefit in attracting new talent and reinforcing the interest of existing employees. Although a company may provide these opportunities, it can be difficult to navigate whether the opportunity is providing the maximum benefit to those involved in the experience. Ultimately, how can internships and mentorship programs positively impact the young professional while also providing value to the company and water industry?

Speaker(s): Nicole Martindale, HDR

10:30 AM MDT

Keep Up the Flow: Focus on Recruiting and Hiring Water Workers

The convergence of aging infrastructure and a wave of retiring employees presents a unique challenge for utility managers and engineers. Building a sustainable water workforce requires a tailored approach to attracting and retaining the next generation of water employees. This presentation will evaluate this multifaceted issue, provide effective strategies for recruiting young talent, and showcase the benefits of investing in all areas of the future water workforce.

Speaker(s): Abigail Hall, Garver

10:30 AM MDT

Know Thyself: Building Institutional Knowledge and Delivering Quality Planning with In-House Water Distribution System Planning

Colorado Springs Utilities recently completed a finished water distribution system plan (master plan) entirely in-house. This presentation summarizes the lessons learned from this project. It will present the original justifications for this project, a discussion of the methodology, and the challenges and benefits observed by the project team. The key takeaways are that internal system planning: 1) builds substantial institutional knowledge, 2) requires dedicated staff and expertise, and 3) provides flexibility at the expense of time. This presentation will be useful to the decision-making at other water providers considering or interested in internal system planning.

Speaker(s): Renn Hankawa, Colorado Springs Utilities, Katie Clair

WED079 - Bridging Water Education and Community Development

Moderator(s):

Event Type: Educational Sessions

Event Track: Water Education and Workforce

10:00 AM - 11:30 AM MDT | Wed | Room 605

OVERVIEW: Education is a foundation on which public and community understanding can be built. These presenters will highlight the techniques they have taken to enhance the understanding within their communities and customers about various aspects of water utilities and services, including their economic impacts and environmental benefits.

PRESENTATIONS:

10:00 AM MDT

Building and Sustaining Support for Proactive Pipeline Management: Strategies for Effective Communication

This session brings together water utility leaders to explore the challenges and strategies for building and maintaining support for proactive pipeline management. Attendees will gain practical insights into developing a compelling business case, quantifying ROI, and effectively communicating program results to stakeholders.

Speaker(s): Antonio Flori, Denver Water, Lázaro Cabrera, Miami-Dade Water and Sewer Department, Natalie DeRoock, Tucson Water, AJ Rees, EPCOR Water Services, Inc., Logan Fesenmair, Xylem, Lynne Putnam, Xylem

10:30 AM MDT

Elevating Water Education: The Aquacademy Initiative

Valley County Water District's Aquacademy is an innovative, community-based initiative designed to elevate water education and stewardship among students within their community. Presentation attendees will learn how to bridge the gap between knowledge and action, offering resources tailored to instill water-wise habits in your own community. Learn how classes, tours, and events will inch you closer to a community that values, conserves, and celebrates its most precious resource—water.

Speaker(s): Jose Martinez, Valley County Water District

11:00 AM MDT

Water Education in Action: Aurora Water's Environmental Education and Outreach Program

Program

For more than 25 years, Aurora Water has provided water education and outreach programs for the community in many forms. Providing water education programs on all levels from preschoolers to adults not only creates a community that is knowledgeable about water and values water, but acts on that knowledge to change behaviors and make water smart choices. For many of Aurora Water's programs to be successful – whether they be new water projects, incentives, regulations or attracting a future water workforce – a water literate public that values water as a natural resource is fundamental. Learn about these award winning, engaging and innovative programs and how they support the Colorado Statewide Water Education Action Plan.

Speaker(s): [Natalie Brower-Kirton](#), *Aurora Water Department*

WED080 - Grundfos Demand Driven Distribution: The Intelligent Solution for Water Network Control

Moderator(s): [Robert Montenegro](#)

Event Type: Educational Sessions

Event Track: Intelligent Water

10:00 AM - 11:30 AM MDT | Wed | Room 601

OVERVIEW: Pressure management is now well recognized as being essential to effective leakage management. Grundfos Demand Driven Distribution, a unique pressure management system -integrated with our pumping solutions-, ensures complete, instant control and efficiency while reducing leakage loss, energy costs, and maintenance work, leading to a reduced environmental impact.

PRESENTATIONS:

PST03 - Wednesday Poster Session

Moderator(s):

Event Type: Educational Sessions

Event Track: Poster Session

10:30 AM - 12:00 PM MDT | Wed | Exhibit Hall Booth 3202

OVERVIEW: Take advantage of this great opportunity to interact directly with presenters at the poster sessions being held in the Exhibit Hall. The poster presenters will be present for the full duration of each poster session to provide attendees with the opportunity for in-depth discussions about their topic.

PRESENTATIONS:

10:30 AM MDT

Aid Africa: Empowering Ugandan Communities through Sustainable Water Solutions

With a Starbucks located on every major corner across the U.S. and many other countries, an alarming 2.2 billion people in the world still lack access to clean water. Aid Africa takes a more intentional and wholistic approach to project sustainability to ensure success in bringing clean water to communities in Northern Uganda by factoring in resiliency and local context throughout each project. This presentation will address the key considerations in sustainable design, how Aid Africa has successfully implemented approaches to addressing this global water need, and how these approaches can impact our way of thinking about designs locally and across the globe.

Speaker(s): [Katy Corkill](#), *Kimley-Horn*

10:30 AM MDT

Show Me the Money! A Water Agency's Experience with PFAS Funding

The Water Replenishment District of Southern California (WRD) is the largest groundwater agency in California, managing and protecting two of the most heavily utilized groundwater basins in the United States. These basins supply drinking water for over 4 million residents in 43 cities within southern Los Angeles County. PFAS have been detected in multiple drinking water wells above Maximum Contaminant Levels. To assist water purveyors with remediating their wells, WRD established a \$61 million grant program for the design and construction of wellhead treatment systems, and prepared and submitted applications for Federal and State funding. This presentation provides an overview of our experience with funding for PFAS remediation projects.

Speaker(s): [Phuong Watson](#), *Water Replenishment District of Southern Calif*

10:30 AM MDT

Addressing PFAS Rule Compliance at a Surface Water Treatment Plant

An in-depth planning strategy for treating PFAS in surface water plant will be presented. While the

EPA has estimated that less than 10% of systems will be affected, the actual number may be much higher. According to current UCMR5 data, approximately 15% of water systems have had at least one quarterly measurement above the standard. It is anticipated that many of these systems will only slightly exceed the standards, requiring a reduction of less than 50% from the influent levels. Surface water treatment plants facing these challenges must carefully select appropriate treatment solutions. The author's experience assisting a water system in South Carolina will provide valuable insights that can guide utilities in similar circumstances.

Speaker(s): Zaid Chowdhury, Garver

10:30 AM MDT

HALT 101 for PFAS Destruction: Industry Perspectives and Emerging Frontiers of Hydrothermal Alkaline Treatment

PFAS treatment and destruction in complex water and solid matrices is an increasing area of research. This presentation will provide a brief overview of PFAS concentration and separation technologies followed by a focused discussion on the efficacy and feasibility of HALT for PFAS treatment. Data and findings will be presented for HALT treatment in liquid matrices including drinking water, firefighting foam, and concentrate streams like foam fractionate and ion exchange still bottoms as well as in PFAS contaminated solids such as soils, biosolids, and spent adsorbent media. The latest research on increasing HALT efficacy will be reviewed and discussion of cost and challenges to implementation will be summarized.

Speaker(s): Anderson Ellis, Colorado School of Mines

10:30 AM MDT

Two Rigs are Better Than One - Distinct Approaches to Evaluate Orthophosphate for Lead Corrosion Control

This presentation describes an innovative, multifaceted pipe loop study to evaluate optimal corrosion control treatment and proactively reduce lead release to drinking water. The study combines an on-site pipe loop designed to evaluate the impacts of orthophosphate with an off-site lab-scale pipe loop intended to evaluate the stability of pre-existing Pb(IV) scales in lead service lines. In addition, sequential sampling and scale analysis of harvested lead service lines was performed to bolster the pipe loop study. The methodology and results will help other utilities optimize corrosion control treatment and effectively implement a pipe loop study.

Speaker(s): Roger Arnold, Hazen and Sawyer

10:30 AM MDT

Operating Distribution Systems in the Age of Reuse: Corrosion Control Guidance for Arizona's AWP Program

Recent legislative changes in Arizona permitting DPR have created a need for updated guidance for advanced water purification systems, including on distribution system corrosion control. The introduction of DPR product water leads to potential water quality shifts in distribution systems, as both RO and non-RO treatment trains create distinct but important considerations for product water corrosivity. The extent of RO treatment along with the selected post-conditioning processes are important for system-level corrosion control. Distribution system operation with DPR requires characterizing existing and proposed conditions, evaluating water quality shifts, selecting control measures, and providing for long-term monitoring.

Speaker(s): Michael Adelman, Stantec

10:30 AM MDT

The Benjamin Button Effect: The Curious Case of Distribution System Water Age and Why It Matters

Water age is the time it takes for water to travel from the treatment facility to any point in the distribution system. With dynamic hydraulic models, water age data is now routinely developed during master planning studies, but interpreting the data can be confusing - how old is too old? This is a cause of routine confusion. This presentation focuses on developing system-specific water age targets. Case studies will illustrate key points. The presenter, an author on the revised M68 manual, has extensive experience in water quality modeling and troubleshooting.

Speaker(s): Simon Horsley, Stantec Consulting Ltd

10:30 AM MDT

Placement is Everything: Addressing Bromide, Algae, and Design Challenges by Implementing Pre-Ozone at the 90 mgd QCWTP

The Quail Creek Water Treatment Plant needs to expand capacity from 60 mgd (gross) to 90 mgd (net) to meet growing demand, as well as add ozone to mitigate the effects of climate variability and to increase process resilience. Innovative solutions included re-rating existing processes, adding new capacity within the existing footprint with stacked DAF (dissolved air flotation over filters) and inserting ozone into the hydraulic profile. Most importantly, planning and design evaluated how raw water characteristics drive the placement of ozone within the plant (pre- vs intermediate) for algae and cyanotoxin treatment, and how dose management can be used to control bromate formation.

Speaker(s): Jeremy Williams, Hazen and Sawyer

10:30 AM MDT

Viable Technologies for Removing Lithium From Drinking Water

As of July 2024, 22% of the 6,517 Public Water Systems reporting data under UCMR5 have at least one entry point into the distribution system with an average lithium concentration above the USEPA Health Reference Level of 10 ug/L. There is no data in the drinking water treatment literature on lithium removal technologies, but there is a large body of work on lithium removal from saline water due to the high demand of lithium-ion batteries for electric vehicles. An ongoing study jointly funded

by the Water Research Foundation and AWWA is looking at documenting the state of knowledge on lithium treatment technologies and collecting preliminary data on their performance.

Speaker(s): Issam Najm, WQTS, inc.

10:30 AM MDT

Nature Meets Water Reuse Engineering: Expanding TRWD's Water Supply with the largest Constructed Wetlands in North Texas

As an alternative source of raw water, Tarrant Regional Water District is designing and permitting the Cedar Creek Wetlands system. This new water supply will increase TRWD's annual water supply, including drought resiliency, by diverting the effluent dominated Trinity River water through a constructed wetlands and discharging to the existing Cedar Creek reservoir. This presentation will discuss three main topics: the purpose and benefit of constructed wetlands, including TRWD's experience using their George W. Shannon Wetlands located at Richland Chambers Reservoir; TRWD's efforts and lessons learned over the past ten years in planning for the project; and technical considerations for moving water through the wetlands system.

Speaker(s): David Schroeder, Tarrant Regional Water District

10:30 AM MDT

An Adaptive Management Framework for Accounting for Climate Change and Multiple Objectives in Water Infrastructure Design

This presentation introduces a practical approach for designing and managing water infrastructure based on future climate and accounts for multiple river basin objectives from stakeholders. The approach is a hybrid approach that applies the updated flood frequency methodology for accounting for climate change and an adaptive management framework for managing uncertainty and multiple basin objectives. The adaptive management approach allows for regular review and refinement of the application of climate data and adjustments to basin objectives, thereby reducing uncertainty within the data needed for decision-making.

Speaker(s): Kenneth Hunu, Atkinsréalis

10:30 AM MDT

Climate Change: The Trio of Tricky Problems

The water industry is facing many challenges that are impacting how we maintain and operate our systems. In addition to aging infrastructure, a retiring workforce, increasing regulations, and limited resources, we are also facing the impacts of Climate Change. Climate change is presenting our industry with what I like to call the Trio of Tricky Problems. This presentation will discuss how climate change is resulting in Too much water, Not enough water, and Dirty water. Examples of how we are addressing these challenges will be shared.

Speaker(s): Christa Campbell, Esri

10:30 AM MDT

Optimizing Corrosion Control Strategies for Changing Water Supplies in Sarasota County, FL.

A Corrosion Control Treatment Study was conducted to evaluate Sarasota County's current corrosion inhibitor dosing strategy given the expected drinking water supply changes in 2027. The study includes a desktop evaluation and a demonstration study (coupon testing). Results and methodology of this study will be helpful for other utilities that anticipate a change in distribution system supplies/blends in the future, and utilities interested in optimizing their current corrosion control practices.

Speaker(s): Melina Bautista, Carollo Engineers, Inc.

10:30 AM MDT

High Mountain Source Water Protection

Speaker(s): Carolyn de Groot, Town of Crested Butte, Erin Vander Zee

10:30 AM MDT

Harnessing the Power of SCADA at Plants with UV Disinfection

Denver Water has a new treatment plant that is utilizing UV disinfection. This requires more complex reporting with far more data analysis than their existing plants which simply report minimum chlorine residual. Denver Water worked with CDPHE to simplify the reporting process for calculating log inactivation for a treatment plant that has both UV and chlorine disinfection.

Speaker(s): Jennifer Gelmini, Stantec

10:30 AM MDT

An integrated approach for water quality assessment in African catchments based on physico-chemical and biological indicators

The African catchments experience problems and threats to water quality. Assessing progress towards SDG target 6, part of the 2030 Agenda, requires regular monitoring of ambient water quality. Level 1 reporting for SDG target 6.3.2 is focused on comparing physico-chemical parameters. However, level 2 reporting may also include biological parameters and data collected via citizen science initiatives like miniSASS. It is also suitable for citizen science initiatives in African catchments, where citizen science can cost-effectively expand current monitoring schemes. The objectives of this study were to assess the physico-chemical water quality parameters; evaluate the ecological health condition of the catchment using miniSASS tool and make r

Speaker(s): Bitew Kassaw Dessie, Newcastle University and WLRC

WED084 - University Forum

Moderator(s):

Event Type: Educational Sessions, International

Event Track: Research

01:30 PM - 03:00 PM MDT | Wed | Mile High Ballroom 1ef

OVERVIEW:

PRESENTATIONS:

WED086 - Rising Above: Elevating Infrastructure Planning with Asset Management to Create a Master Plan

Moderator(s): [Lisa Lattu](#)

Event Type: Educational Sessions, Focused Insights

Event Track: Infrastructure Management

01:30 PM - 03:00 PM MDT | Wed | Room 401 - 402

OVERVIEW: As cities age, many utilities capital programs have changed focus to the replacement of aging infrastructure. Replacement planning is now one of the most important components of a comprehensive plan. This session will discuss how asset management and master planning can work together to create a comprehensive planning process.

PRESENTATIONS:

01:30 PM MDT

The Integration of Asset Management and Master Planning

The nexus between asset management plans and master planning, as a vital component of a comprehensive plan. An overview of how asset management contributes to the comprehensive planning process.

Speaker(s): [Matthew Huang](#), *Carollo Engineers, Inc.*

01:45 PM MDT

An Asset Management-Focused CIP Plan

The focus of Mesa Water's CIP Update is the integration of condition assessment into CIP planning with traditional hydraulic and water supply planning. The plan also developed a roadmap for the asset management system to work with existing CMMS.

Speaker(s): [Karyn Igar](#), *Mesa Water*

02:00 PM MDT

Holistic Distribution Planning: Leveraging your Hydraulic Model to Plan for Asset Replacement

Leveraging hydraulic models to assess pressure zone performance and master plan the pipeline distribution system by identifying pipeline replacement sizes and upgrades to meet customer level of service under future demand and fire flow scenarios.

Speaker(s): [Sandra Mulhauser](#), *East Bay Municipal Utility District*, [Jae Suh](#)

02:15 PM MDT

CIP Synergy

Incorporating Tulsa's mature asset management program with their 10-year comprehensive plan.

Speaker(s): [Joan Gausvik](#), *Tulsa Metropolitan Utility Authority*

02:30 PM MDT

2 for 1; Doing More by Planning Ahead

Combining lift station condition assessment with rehabilitation/replacement planning to increase capacity/ resilience of facilities.

Speaker(s): [Lauren Kubin](#), [Amin Tehrani](#)

02:45 PM MDT

Panel Discussion

WED088 - Innovative Approaches for Treatment Plant Rehabilitation and Upgrade

Moderator(s): [Alex Wohlgermuth](#)

Event Type: Educational Sessions

Event Track: Infrastructure Management

01:30 PM - 04:30 PM MDT | Wed | Room 403 - 404

OVERVIEW: This session will discuss innovative approaches for upgrading water treatment plants. The session covers multiple unit processes including ozone, DAF and dual media filtration.

PRESENTATIONS:

01:30 PM MDT

Floating and Filtering in the Same Structure: How Stacked DAF/Filtration Maximized Quail Creek WTP Site to Expand to 90 MGD

As demands in Utah's Washington County Water Conservancy District increase, the Quail Creek Water Treatment Plant faced the challenge of increasing its treatment capacity from 60 to 90 million gallons per day (mgd). The existing 20 mgd flocculation and sedimentation basin was identified as a bottleneck, prompting a detailed evaluation of potential alternatives to replace this process. This presentation will highlight the evaluation process, cost savings, site impacts, and design details for 30 mgd of a unique stacked dissolved air flotation and filtration process, in a single structure, to be built within the existing floc/sed footprint.

Speaker(s): [Matt Ridens](#), [Garver](#)

02:00 PM MDT

Three Facilities, Two Phases - Commissioning Houston's First Ozone Disinfection System

This presentation will explore the experience of a young professional on the Houston Waterworks Commissioning Team. It will include the challenges of commissioning ozone equipment over two phases, across three facilities, and the unique barriers encountered in each phase.

Speaker(s): [Lander Kennedy](#), [CDM Smith](#)

02:30 PM MDT

Physical Modeling to the Rescue; Addressing the Design Challenges of a 50 MGD Expansion of Eagle Mountain WTP in Fort Worth, TX

This presentation discusses challenges related to the design of a 500,000 gallon hydraulic break tank that serves as a storage reservoir for 3 filter backwash pumps as well as 6 Ultrafiltration (UF) membrane feed pumps in an extremely tight space as part of a 50-MGD expansion at Eagle Mountain Water Treatment Plant in Fort Worth, TX. The presentation also covers how those challenges were addressed with creative design ideas for the current and future scenarios, and a physical model study to meet the Hydraulic Institute acceptance criteria for pump intake. Vibration concerns and requirements for a dynamic vibration analysis will also be discussed.

Speaker(s): [Chetan Soni](#), [CDM Smith](#)

03:00 PM MDT

Filter Overhaul at a Massive Scale – Rehabilitation and Automation of the 214+ MGD Alexander Orr Jr. Water Treatment Plant

The presentation details a large-scale rehabilitation effort for Miami Dade County (Florida) Water and Sewer Department. The project includes the replacement of all filter internals for over 214 mgd worth of treatment (32 filter boxes) and the addition of air scour blowers and piping. The project also includes the complete automation of the filters, with actuator replacement, new control consoles, and all supporting infrastructure. Topics such as equipment alternatives, detailed maintenance of plant operations (MOPO) planning, and modern filter control strategies are discussed to give attendees insight into how to carry out similar large and complex projects.

Speaker(s): [Wesley Oehmig](#), [HDR](#)

03:30 PM MDT

Setting the Stage for the New West Parish Filters Water Treatment Plant

The presentation will focus on the planning and design efforts made to modify existing facilities in order to prepare the site of the existing West Parish Filters Water Treatment Plant for a major construction project, a new 65-mgd WTP. The goals of these efforts include minimization of risk to the existing facilities, maintenance of water supply to existing customers and facilitating the construction of the new facility while minimizing impacts to existing operations.

Speaker(s): [Marc Morin](#), [Hazen and Sawyer](#)

04:00 PM MDT

Operations and Maintenance Focused Design for Resilient Treatment Facilities

A valuable session for utility operators, management, and consulting engineers, alike, this presentation will explore the importance of operation staff input in design, the need for detailed O&M manuals presented during equipment/facility startup, and the need to consider long-term maintenance, repair, and replacement strategies from the onset of design.

Speaker(s): Jonathan Williams, Garver

WED089 - Advances in Pipeline Rehabilitation

Moderator(s): David Katzev

Event Type: Educational Sessions

Event Track: Distribution System Operation and Management

01:30 PM - 04:30 PM MDT | Wed | Mile High Ballroom 2ab

OVERVIEW: This session focuses on innovations in both the research and application of rehabilitation methods for water mains and other pressure pipelines.

PRESENTATIONS:

01:30 PM MDT

C623 Design Appendix: A Blueprint for CIPP Lining of Pressurized Pipelines

This presentation provides an overview of the design appendix which will supplement AWWA C623. This addendum to the CIPP water main rehabilitation standard is currently in development and provides a detailed approach to cured-in-place pipe (CIPP) design as a Class III or IV system for pressure pipe applications.

Speaker(s): David Kozman, HammerHead Trenchless Equipment

02:00 PM MDT

EPA-Compliant Solutions: Replacing Asbestos Cement Pipes Using Close Tolerance Pipe Slurrification

Close Tolerance Pipe Slurrification (CTPS) technology was approved by the EPA on June 10, 2019, as a compliant method for rehabilitating Asbestos Cement (AC) pipes. This innovative technique provides municipalities with an alternative to traditional open-cut methods, which are often disruptive and costly. CTPS allows for efficient remediation of aging AC pipes while minimizing public disruption and environmental risks associated with asbestos exposure. By offering a safer and more effective approach, CTPS equips agencies, owners, and engineers with a valuable tool to address the challenges of aging infrastructure as AC pipes reach the end of their design life.

Speaker(s): Brian Goad, Azuria Water Solutions

02:30 PM MDT

Air Quality Monitoring and Testing During CIPP Installation for Water Mains: A DC Water Case Study

DC Water rehabilitated century-old cast iron water mains using Cured-In-Place Pipe (CIPP) with a non-styrene-based epoxy resin. In response to a resolution by local elected officials following a recent sewer main rehabilitation project, the Department of Energy and Environment (DOEE) mandated that DC Water submit an Air Quality Monitoring and Testing Plan (AQMP). 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.

Speaker(s): Burak Kaynak, DC Water, William Elledge

03:00 PM MDT

Advances in SIPP Linings that allows for Same Day Return to Service

Aging pressurized sewer force mains and potable water mains are now leaking, failing, and in need of renovation or replacement. Replacement is very costly and disruptive. The main method to renovate pressure pipelines has been the installation of a reinforced Cured-In-Place-Pipe (CIPP) liner. This presentation will present recent advances in Spray-In-Place-Pipe (SIPP) lining technologies developed to renovate pressure pipelines that allow for a faster return to service (hours compared to days), at significantly lower construction cost and the reduced need for the construction of a temporary bypass system.

Speaker(s): Mark Knight, University of Waterloo

03:30 PM MDT

Catastrophic Failure, Condition Assessment, Rehabilitation, and Long-term Protection of a 36-inch Concrete Cylinder Pipeline

Catastrophic failure, condition assessment, rehabilitation, and long-term protection of a 36-inch concrete cylinder pipeline with installation of an impressed current cathodic protection system.

Speaker(s): Greg Jones, Helix Water District

04:00 PM MDT

Service life testing of trenchless rehabilitation technologies under external loading

This presentation will focus on the mechanical performance and structural integrity of pipelines rehabilitated using trenchless technology. Full-scale testing was conducted on 12-inch diameter steel and cast iron specimens, simulating real-world stress conditions such as traffic loads, temperature fluctuations, and excavation-induced deformations. Both axial and bending loads were applied to assess the resilience of the CIPP system at critical stress points like circumferential cracks and joints. The presentation will provide valuable insights into material behavior, repair design, and future applications for trenchless pipeline repair technologies.

Speaker(s): [Sina Senji](#), *University of Colorado Boulder*

WED090 - Distribution System O&M - Thinking Outside the Box

Moderator(s):

Event Type: Educational Sessions

Event Track: Distribution System Operation and Management

01:30 PM - 03:00 PM MDT | Wed | Room 405

OVERVIEW: This session will cover topics regarding the Distribution System Operations & Maintenance, including Adopting Valves, disappearing system storage and sizing service Zones for energy reduction

PRESENTATIONS:

01:30 PM MDT

The Secrets to Adopting Valves

Valves are often overlooked, yet they are essential components that regulate pressure, control flow, and ensure efficient operation. At WRO, we have embraced a proactive approach by "adopting" key valves across our system, creating a comprehensive maintenance program to ensure their longevity and optimal performance. Neglecting a valve, like neglecting a pet, comes with consequences. A valve that isn't well-maintained could malfunction, causing imbalances in water pressure, damaging infrastructure, or interrupting service. Proper care, however, ensures that the valve not only functions correctly but also serve as a valuable measurement station.

Speaker(s): [Arnaldo Colon Maldonado](#), *Puerto Rico Aqueduct Authority (PRASA)*

02:00 PM MDT

Thinking Further Inside the Box – Right Sizing a Service Zone when Replacing a Booster Station for a 75% Reduction in Energy Use.

The City of Minneapolis WTDS' Southwest Pump Station (SWPS) is scheduled for replacement. During preliminary design, we found that by relocating the SWPS, the pressure zone area could be reduced by 85%. This case study emphasizes the importance of thinking "outside" the box and thoroughly exploring ideas before replacing assets. Long term energy savings with minimal changes to customer level of service can be achieved through thoughtful planning and analysis.

Speaker(s): [Christopher Larson](#), *City of Minneapolis*, [Tricia Berger](#)

02:30 PM MDT

Poof! 23 Million Gallons of Treated Water Storage Instantly Evaporated

When the City of Greeley, Colorado suddenly lost 23 million gallons of storage following a regulatory inspection, alternatives were desperately needed to solve the problem. The city ultimately came up with a solution that optimized its existing system and delayed significant capital expenditures to replace the lost storage by 10-15 years.

Speaker(s): [Jim Paulson](#), *City of Greeley*

WED091 - Tackling PFAS As A Small System

Moderator(s): [Stephanie Elliott](#)

Event Type: Educational Sessions

Event Track: A Focus on PFAS

01:30 PM - 04:30 PM MDT | Wed | Room 501 - 502

OVERVIEW: Per- and Polyfluoroalkyl Substances (PFAS) pose a growing challenge to drinking water safety, particularly for small water systems with limited resources. This session will explore the unique obstacles faced by small systems in managing PFAS contamination and provide actionable insights on available treatment technologies, regulations, and funding opportunities.

technologies, regulations and funding opportunities.

PRESENTATIONS:

01:30 PM MDT

Navigating PFAS Challenges: Cost-Effective Treatment Approaches for Rural and Mid-Sized Utilities

PFAS is a huge concern for many small to mid-sized utilities in the country. The urgency propagated by the promulgation of the PFAS Rule, and the funding opportunities offered by the federal and state governments, forcing these utilities to take action and "Do Something" to address their PFAS issues. This presentation summarizes the work done by two such utilities who proactively started strategizing to manage their PFAS issues. The projects they undertook, provided pathways to understand the issue in their systems, identify technical alternatives to remedy the issues, know the cost implications and prepare funding arrangements (loans / grants). This process is replicable; will help other similar utilities to manage PFAS.

Speaker(s): Aziz Ahmed, CHA Company

02:00 PM MDT

Small Town, Big Plans: Pursuing PFAS Upgrades to Enhance a Water Supply through Pilot Testing

This study focuses on one of the first pilot studies in the State of Virginia for per- and polyfluoroalkyl substances (PFAS) in the Town of Purcellville, which highlights PFAS treatment applications for small water systems. This work assessed how PFAS treatment media perform in the context of small groundwater systems including: intermittent plant operation (i.e., nightly well shutdowns), pre-chlorination, and the impact of dual-media filters for iron and manganese pretreatment before PFAS treatment. The findings from this pilot study are important to better understand PFAS treatment options that can feasibly combat the unique challenges Small Systems overcome to provide safe drinking water in light of recent PFAS regulatory changes.

Speaker(s): Donald Ryan, Stantec

02:30 PM MDT

Navigating PFAS in a Small Community

The presentation will provide a case study of how a small system in south-eastern Pennsylvania overcame the daunting challenge of addressing elevated PFAS levels in its community water system while under a consent order and public scrutiny through successful partnerships with engineering experts, regulators, and funding agencies.

Speaker(s): Michael Brown, Gannett Fleming

03:00 PM MDT

Evaluating How Small Utilities in Colorado Can Best Comply with The New PFAS Regulations

This presentation discusses the unique challenges small groundwater utilities in Colorado are facing when navigating the new PFAS MCLs. Many such utilities have PFAS concentrations that are close to, or just above the newly adopted regulatory limits. Two case studies will be presented that summarize their approach to sampling, data interpretation, and the different treatment alternatives considered.

Speaker(s): Talia Assi, Jacobs

03:30 PM MDT

Programmatic Approach to PFAS Treatment for Small-Scale Systems

Small systems are disproportionately impacted by the PFAS regulation. This presentation details how a utility is tackling their PFAS challenges by implementing a programmatic approach to deployment of small-scale treatment systems at 209 impacted sites. One system has been implemented to-date, with approximately 10 more planned for commissioning by the end of 2024 and the rest in a phased approach through 2028. In addition to programmatic benefits for expedited schedule and reduced costs, piloting performance of various AIX resins and a novel media product will be shared. The novel product tested can be regenerated for non-potable reuse, reducing disposal risks with forthcoming regulations, and is less susceptible to inorganic fouling than

Speaker(s): Sean Lammerts, Black & Veatch

04:00 PM MDT

POU Treatment Strategies to Assist Disadvantaged and Underserved Homeowners with Removal of PFAS from Drinking Water

As the PFAS issue continues to evolve, Small Public Water Supplies should stay up to date on the drinking treatment technologies that are available for use in homes or buildings, and the use limitations of these devices. Disadvantaged and underserved communities are the most vulnerable and least equipped to address adverse human health effects of PFAS in drinking water. This session will explore the in-home treatment technologies that are available, and funding programs to assist Small Systems with implementation.

Speaker(s): Eric Yeggy, Water Quality Association

Event Type: Educational Sessions

Event Track: Intelligent Water

01:30 PM - 03:00 PM MDT | Wed | Room 406

OVERVIEW: This session will introduce various tools which consume CMMS data, which help in daily business decisions, including visualization, decision support, and predictive analytics tools. As the mountain of CMMS data mounts with increasing volumes of work orders and inspections, analysis with spreadsheets becomes prohibitively burdensome. This session will explore ways to automate the process.

PRESENTATIONS:

01:30 PM MDT

Use of predictive analytics and CMMS data to support distribution pipe renewal and reduce break rate

STPUD will present case study on using predictive analytics, consuming CMMS data, to select and prioritize break rates using predictive analytics.

Speaker(s): Megan Colvey, South Tahoe Public Utility District

01:52 PM MDT

City of Houston builds dashboards to make key asset information available to all

The presentation will highlight the process taken from the initial CMMS configuration to the development of the utilized data pipeline and showcase example report dashboards developed using Microsoft PowerBI.

Speaker(s): Andrew Burton, Carollo Engineers, Inc.

02:14 PM MDT

Data Driven Rehab: Utilizing CCTV to Make Informed Decisions

Speaker(s): Abel Borunda

02:36 PM MDT

Panel Discussion

WED102 - The Perspectives of the Ratings Agencies on the Water Sector

Moderator(s): Jessica Williams

Event Type: Educational Sessions

Event Track: Legal, Financial, and Management

01:30 PM - 03:00 PM MDT | Wed | Four Seasons Ballroom 4

OVERVIEW: This interactive session will feature senior representatives of S&P Global, Fitch, and Moody's ratings agencies who will offer their assessments of the current and evolving challenges facing water and wastewater utilities. This discussion will focus on these challenges and their impact on the financial health and ratings for utilities. Panelists will tackle issues including inflation, workforce challenges, climate change, regulatory changes (e.g., lead and copper, PFAS), cybersecurity and the relative strengths of utility management. Water utility revenue generation, costs of services, affordability, and capital planning/asset management will also be discussed.

PRESENTATIONS:

01:30 PM MDT

The Perspectives of the Ratings Agencies on the Water Sector: Interactive Discussion

Speaker(s): Jessica Williams, City of Denton, Texas, Audra Dickinson, Fitch Ratings, Jenny Poree, S&P Global, Heather Correia, Moody's

WED104 - SMART Water Loss Technology

Moderator(s):

Event Type: Educational Sessions

Event Track: Water Use Efficiency Solutions

Event Track: water use Efficiency Practices

01:30 PM - 03:00 PM MDT | Wed | Mile High Ballroom 1ab

OVERVIEW: New technology, AI, and Machine Learning are helping water utilities monitor and manage water loss. This session has three examples to show how these new SMART approaches are helping to tackle water loss.

PRESENTATIONS:

01:30 PM MDT

Using Pressure Data to Determine Event Localization

The presentation will cover the methodology behind using a hydraulic model using pipe, hydrant and valve data, a pre-constructed time matrix, and pressure sensors can help determine how a hydraulic event is detected and propagates through a water distribution system creating a heat map of affected areas.

Speaker(s): KAREN SIU, *IHYDRANT/MCWANE INC*

02:00 PM MDT

Case Studies: Water Leaks Detection through Industrial IoT and Machine Learning Technologies in South Korea and Vietnam

This study introduces an AI-based water leak detection system aimed at enhancing accuracy and response time. The objective is to develop a robust, real-time monitoring system utilizing machine learning. Over 100,000 leak sounds were collected to train the AI, and the system was tested in Wanju, South Korea, and Phan Thiet City, Vietnam. Fifteen pressure sensors were installed, allowing untrained locals in Vietnam to detect leaks after brief training. Results showed the system identified ten leaks in Wanju and eight in Vietnam, achieving a 20% reduction in water loss and saving approximately 188,000 cubic meters annually. These findings suggest the AI system can significantly improve water management and effectively utilize local manpower.

Speaker(s): Gyeong Sung Kim, *California State University, Bakersfield*

02:30 PM MDT

Beyond the Band-Aid: Analyzing Risks for Enhanced Leak Detection at the City of Toledo, OH

Aging infrastructure, budget restraints, and labor shortages pose significant challenges for utilities like Toledo in managing water main replacement and minimizing Non-Revenue Water. While industry standards recommend replacing 1% of water mains each year, a \$462 billion funding shortfall renders this goal unrealistic with \$2.6 billion spent annually on repairs as a stopgap. Toledo took a smarter approach by looking Beyond the Band-Aid and recognized leakage recovery as a viable option to fund replacement. By implementing AI-driven predictive risk analysis to evaluate pipe condition, Toledo adopted an intelligent leakage recovery strategy deploying acoustic sensors in high-risk areas, optimizing water main replacements and reducing losses.

Speaker(s): Emma Quail, *Ferguson Waterworks*

WED106 - Cyber Security and the Circular Economy

Moderator(s): Shannon Wedding, Michael Morris

Event Type: Educational Sessions

Event Track: Utility Risk and Resilience

01:30 PM - 04:30 PM MDT | Wed | Room 603

OVERVIEW: Cyber Security and the Circular Economy – The integration of cybersecurity into the circular economy is vital in ensuring the transition toward circular practices in Industry 4.0. This presentation addresses the relationship between cybersecurity and the circular economy from economic, social, and environmental perspectives: Cybersecurity plays a significant role in enhancing process control and reducing uncertainty in industrial decision-making.

PRESENTATIONS:

01:30 PM MDT

Introduction to Circular Economy & Cybersecurity

Speaker(s): Gigi Karmous-Edwards

01:55 PM MDT

Standards and Legal Framework

Speaker(s): Kevin Morley, *Federal Relations*

02:20 PM MDT

Federal & State Resources

Speaker(s): Craig Conway

02:55 PM MDT

Manufacturers & Vendors

Speaker(s): Ahmik Hidman, Jason Pennington, Kenneth Crowther, Xylem Inc

03:20 PM MDT

Consultants & System Integrators

Speaker(s): John Karabias

03:45 PM MDT

Integrating all Stakeholders for a Secure Solution

Speaker(s): Ahmik Hidman, Jason Pennington, Kenneth Crowther, Xylem Inc

04:10 PM MDT

Collaborative Discussion & Q&A

WED111 - Novel Approaches for Building One Water Frameworks

Moderator(s):

Event Type: Educational Sessions

Event Track: Water Resources Planning, Protection & Management

01:30 PM - 03:00 PM MDT | Wed | Room 407

OVERVIEW: Starting with one of the most common One Water concepts, this session will then expand the One Water conversation to be more holistic and identify the potential methods or frameworks that utilities can use to guide them in planning and implementing a One Water approach that meets the current and future objectives of their utility reflecting its unique circumstances.

PRESENTATIONS:

01:30 PM MDT

Purple Pipe to Potable: A Case Study

Utilities throughout the state are at a decision point regarding the application of their recycled water: purple pipe or potable? The Los Angeles Department of Water & Power is navigating the balance between NPR and IPR in the course of delivering the Groundwater Replenishment Project with consultant Jacobs.

Speaker(s): Sebastien Rossouw

02:00 PM MDT

A How-to Guide for One Water Action in Your City

A One Water approach is a flexible, long-term strategy for comprehensively managing drinking water, reclaimed water, wastewater, and stormwater. It considers all water sources within a community to maximize environmental and community benefits, connecting all elements of the water cycle. This integrated approach aims to meet goals for water quantity, quality, equity, and resilience, allowing coordinated actions that benefit the community. Examples from a One Water Plan development, from defining One Water at the city management level to implementation strategies, as well as insights shared from One Water Planning (WRF 5175), will serve as a diverse analog for cities seeking to plan for their future water supplies with a One Water lens.

Speaker(s): Paula Jo Lemonds, HDR

02:30 PM MDT

Embracing the One Water Framework to Build Resilient Utilities

The purpose of this presentation is to help utilities and cities understand how the One Water Framework (OWF) can be utilized to either start or progress on their One Water journey and become a utility of the future. The presentation will first describe the development and structure of the OWF. Next, the application of the OWF will be illustrated using a variety of One Water case studies. Lastly, the case studies' lessons learned are shared to give the audience practical steps to make their One Water vision a reality.

WED114 - Effective Treatment Strategies and Key Challenges for Small Water Systems

Moderator(s): Michelle Peters

Event Type: Educational Sessions

Event Track: Water Quality Challenges

01:30 PM - 04:30 PM MDT | Wed | Mile High Ballroom 3ab

OVERVIEW: Small water systems are met with a set of challenges when it comes to providing safe, clean drinking water to their communities. From limited budgets and staffing to the complexities of treatment technology and regulatory compliance, managing water quality in these systems requires innovative, cost-effective solutions.

PRESENTATIONS:

01:30 PM MDT

Small System Challenges and Strategies for Removing Natural Organics

The meaning of "high organics" means something different to all water professionals. Small communities in Northern Alberta struggle with "high organic" laden source waters with levels ranging from 15 to 40 mg/L of dissolved organic carbon (DOC). As expected, these high organics cause concerns about colour, taste, odour, disinfection residuals, and disinfectant by-products (DBP). These organic-laden waters are challenging for those with the resources of a large municipality, let alone those with small systems.

Speaker(s): Nicholai Kristel, Associated Engineering

02:00 PM MDT

Guidance on Practical and Affordable Manganese Treatment for Small Drinking Water Systems

In August 2024, US EPA's Office of Research and Development awarded a two-year research contract to a research team led by Cornwell Engineering Group to evaluate Manganese treatment capital and operational costs, treatment performance, and residuals handling/disposal, targeting water systems serving less than 10,000 population. The project team will provide technical assistance for demonstrated innovative, affordable, and easily operated/maintained manganese treatment technologies. The work will produce a simplified tool for helping small utilities select economical Mn treatment and a Regulators' Guide highlighting key guidance. This is an update of progress and request for added participation.

Speaker(s): Everett Skipper, Cornwell Engineering Group, Inc

02:30 PM MDT

Overcoming Small System Challenges: Lessons Learned from Consolidated Management of Nitrate Treatment in California

Nitrate contamination is a critical, expensive water quality concern for many small water systems, further complicated by technical knowledge and capacity gaps to implement and operate advanced treatment systems, as well as the burden of high operational costs. To reduce funding hurdles and test the viability of consolidated management of nitrate treatment, the State of California allocated funding through Proposition 50 to implement and operate strong base anion exchange systems at economically disadvantaged nitrate impacted small water systems. The project evolved through funding changes, cost and bidding challenges of the pandemic, and many other hurdles and has reached its conclusion with two operational nitrate treatment systems.

Speaker(s): Nathan Macarthur, Corona Environmental Consulting, LLC

03:00 PM MDT

GAC Is Not Just for PFAS - Meeting Both Short-Term & Long-Term DBP Compliance with GAC

This presentation will step through a small, rural town's journey to maintain DBP compliance, first with short-term mitigation through replacement of the anthracite media in the existing filters with GAC and then with a more sustainable long-term solution of post-filter GAC adsorption. Their lessons learned on implementing these solutions and the steps taken to minimize the financial burden on the community will be reviewed.

Speaker(s): Ji Im, CDM Smith

03:30 PM MDT

Cost-Effective Solutions for High-Quality Membrane Filtration in Small-Scale Systems Amid Rising Construction Costs

The Public Utility District No. 1 of Skamania County (District) serves 3,000 people the City of Carson, WA. This presentation will focus on funding limitations for small systems, operational considerations for small system operators, and the design of cost-effective membrane systems for small systems.

Speaker(s): [Brian Rowbotham](#), [Stantec, Inc.](#)

04:00 PM MDT

Bridging the Gap: POU/POE Devices and the Human Right to Water in California

Achieving California's human right to water resolution is going to require a set of short- and long-term strategies including Point-of-Use/Point-of Entry (POU/POE) devices. POU/POE devices used by public water systems (PWS) in California for the purpose of complying with drinking water standards must be independently certified. Currently, the certified POU/POE devices in the market do not meet California's water quality objectives for 1,2,3-TCP, hexavalent chromium, uranium, and high levels of nitrate. To bridge this gap, this study evaluated service connections of small water systems and domestic wells that could potentially benefit from implementation of POU/POE devices to address contamination issues.

Speaker(s): [Yamrot Amha](#)

WED115 - Power Up Your Impact: Connecting Through Creativity and Storytelling

Moderator(s):

Event Type: Educational Sessions

Event Track: Water Utility Management

01:30 PM - 03:00 PM MDT | Wed | Room 607

OVERVIEW: Building support for infrastructure projects and budget priorities requires more than data—it demands impactful messaging that resonates with the audience. This presentation provides actionable strategies for crafting creative, audience-focused communications that engages elected officials, decision-makers, and the public.

PRESENTATIONS:

02:00 PM MDT

Beyond the Town Hall PowerPoint: How To Conduct Effective Engagement To Build Understanding and Support For Your Project

Is your idea of conducting community engagement doing a PowerPoint presentation on a Tuesday night to a small group of the usual suspects in your service area? If so, you aren't just missing a chance to engage with the majority of your service area, you are missing a major chance to build trust and relationships. This presentation takes you from PowerPoint to power participation. Through case study examples and proven methodologies from the International Association of Public Participation, you will learn how to create, then successfully facilitate, effective and meaningful engagement techniques that don't just build awareness for your work, but also build understanding, trust, and value for the service you provide.

Speaker(s): [Samantha Villegas](#), [Raftelis](#)

02:30 PM MDT

Tapping into Graphic Design Basics and How to Create More Effective Public Communication Deliverables

Graphic design is so simple, that's why it is so complicated. Luckily, there is a repeatable process and creative strategists that can help your team tap into the answers that are foundational when communicating to the public about water projects. Attendees will learn when to work with creative problem solvers and how their collaborative process helps reduce public misunderstanding by creating audience targeted, vision-driven, easy-to-understand public-facing communications. This session will also focus on the dos and don'ts of graphic design for utilities and offer up resources for those that don't have budget or creative staff to help build public communication deliverables.

Speaker(s): [Anita Langemach](#), [Leslie Hough](#)

WED116 - Digital Tools to Elevate Water Utility Customer Experience

Moderator(s):

Event Type: Educational Sessions

Event Track: Water Quality Challenges

01:30 PM - 03:00 PM MDT | Wed | Mile High Ballroom 1cd

OVERVIEW: Improving customer experiences is a top priority for many utility systems. This session will focus on areas that certain utilities are leaning into that are intended to enhance the customer experience. From first call resolution, to increasing engagement with customer portals, to revamping the utility billing process to cloud-

based solutions, this session will identify a range of options that can be explored to improve engagement of customers and efficiency.

PRESENTATIONS:

01:30 PM MDT

Latest Advancements in AI Overview

02:00 PM MDT

Motivating Customers to Sign Up for Your Portal

Westminster, Colorado launched an online portal allowing customers to view their AMI-based hourly water use, pay bills, receive leak alerts, and more. After the first nine months, staff wanted more customers using the portal and conducted a randomized control trial experiment to test which outreach was most effective: postcards or emails; and messages about leak alerts, ease of bill payment, or viewing water use. Come learn what worked best so you can get more customers into your portal!

Speaker(s): Drew Beckwith, *City of Westminster Utilities*

02:30 PM MDT

Transforming Utility Billing: Meridian Metropolitan District's Cloud-Based Future

Join us for an insightful presentation on the future of utility billing at the Meridian Metropolitan District (MMD). Ken Lykens, Meridian's General Manager, and Marie King, Associate at Hazen and Sawyer, will explore MMD's ambitious project to transition to a fully integrated, cloud-based utility billing system. Learn about MMD's vision for a more efficient, customer-centric solution, cost savings, comprehensive system requirements, implementation roadmap, lessons learned, and benefits realized. A must-attend for utility professionals and tech providers looking to enhance billing and customer service in a growing community.

Speaker(s): Marie M King, *Hazen and Sawyer*

WED119 - Navigating Current Workforce Challenges

Moderator(s):

Event Type: Educational Sessions

Event Track: Water Education and Workforce

01:30 PM - 03:00 PM MDT | Wed | Room 605

OVERVIEW: Given the understanding of continued and continued labor shortages, this session will focus on strategies to address workforce needs from a geographic and innovation perspective. Moreover, this session will identify some thinking relative to knowledge transfer approaches that can help utilities keep continuity of operations and efficiency/effectiveness as many more experienced staff exit the workforce.

PRESENTATIONS:

01:30 PM MDT

Water Utilities Unite: Global Collaboration to Address Workforce Needs

The Water Tower and Sydney Water conducted three parallel design sprints with utility staff to identify and prototype solutions to address utility challenges in recruiting, retaining, and upskilling the fit-for-future workforce. This presentation will provide participants with insight into the data collected including the top challenges experienced by skilled trade staff, college-track staff and utility leadership as well as solutions developed by the participants to address these key challenges. A new candidate employee experience will be revealed that integrates the ideas from the first-hand perspectives of the utility participants.

Speaker(s): Joanna Brunner

02:00 PM MDT

People Power: Navigating the Human Side of Innovation

Utility innovators discuss the crucial human side of progress in today's fast-paced, competitive landscape. Three trailblazers share experiences and tools that maintain project momentum, boost staff motivation, and secure leadership support for new technologies. Learn how balancing people skills with innovation drives success in the evolving utility sector.

Speaker(s): Stephanie Corso, *Isle, Inc*

02:30 PM MDT

Surviving the Silver Tsunami

The Great Retirement Wave is a reality for utilities, and it's not going away any time soon. Seattle Public Utilities will describe tools it's built in the hope of improving workforce development: recruiting, professional growth, and succession planning. Race and Social Justice elements are also part of the toolbox we're using, and we'll share data on how we're doing in this challenging time for utilities.

Speaker(s): Alex Chen, *Seattle Public Utilities*

WED124 - University Forum

Moderator(s):

Event Type: Educational Sessions, International

Event Track: Research

03:00 PM - 04:30 PM MDT | Wed | Mile High Ballroom 1ef

OVERVIEW:

PRESENTATIONS:

WED126 - Hands-On Physical Condition Assessment of Facility Assets with Exercises Using Actual Utility Condition Assessment Frameworks

Moderator(s): [Kevin Campanella](#)

Event Type: Educational Sessions

Event Track: Infrastructure Management

03:00 PM - 04:30 PM MDT | Wed | Room 504

OVERVIEW: This session will provide exercises using basic and advanced physical condition assessment frameworks so participants can experience the pros and cons of each. Attendees will be given photos of different types of assets to rate their condition. Pros and cons of the frameworks and how the condition data is used to make asset decisions will be covered.

PRESENTATIONS:

03:00 PM MDT

Intro to Physical Condition Assessment and AWWU Case Study

Introduce the premise of physical condition assessment in the context of overall asset health assessment, provide an example of a complex condition assessment framework, and facilitate attendees through the assessment of assets using that framework.

Speaker(s): [Kevin Campanella](#), [Burgess & Niple, Inc.](#)

03:30 PM MDT

Sammamish Plateau Water Condition Assessment Framework

Introduce the premise of physical condition assessment in the context of overall asset health assessment, provide an example of a complex condition assessment framework, and facilitate attendees through the assessment of assets using that framework.

Speaker(s): [Tammy Whipple](#), [AMCL](#)

04:00 PM MDT

Utilizing Physical Condition Data to Make Valuable Asset Decisions

Speaker(s): [Todd Helgeson](#)

WED130 - Maintenance Topics

Moderator(s):

Event Type: Educational Sessions

Event Track: Distribution System Operation and Management

03:00 PM - 04:30 PM MDT | Wed | Room 405

OVERVIEW:

PRESENTATIONS:

03:00 PM MDT

You Wouldn't Drive Your Truck with a Faulty "Check Oil" Gauge, so Why Operate a Pump w/out a KPI Dashboard that Tells You Whazz-up

This presentation will describe the limitations of traditional asset management likelihood of failure (LOF) accuracy and outline the importance of integrating the energy management strategies into the asset management protocol to evaluate the remaining useful life of critical electro-mechanical equipment, which is accomplished by Kimley-Horn's tried and true Xak-Pak™ for field wire to water efficiency testing audits. For permanent pumping installations, Kimley-Horn incorporates real-time pump performance and troubleshooting dashboarding into the control and monitoring platform with their Pump Doc Tool

Speaker(s): [Eric Dole](#), [Kimley Horn and Associates](#), [Zachary Purvis](#)

03:30 PM MDT

The Importance of Electrical System Maintenance

This presentation will educate the audience on the criticality of performing scheduled and routine maintenance on their electrical system. Electrical equipment commonly encountered throughout the Water and Wastewater industry will be the focus of the presentation. Recommended maintenance intervals, maintenance/testing activities, electrical distribution system modeling, and critical failure prevention using advanced instrumentation and diagnostics will be examined.

Speaker(s): [Adam Wahler](#), [AE2S](#)

WED132 - Understanding Risk Communication and PFAS: What We Know and What Remains Unexplored

Moderator(s):

Event Type: Educational Sessions

Event Track: A Focus on PFAS

03:00 PM - 04:30 PM MDT | Wed | Room 401 - 402

OVERVIEW: A panel of expert researchers and practitioners in risk communication will present an overview of existing communication tools, tactics, templates, and current resources and research surrounding PFAS risk communication. The discussion will cover themes such as managing uncertainty, affective responses, and beliefs about personal risk. Additionally, the panel will engage the audience to examine challenges faced in communicating about PFAS and identify further tools, resources, and research needed to enhance communication strategies regarding this pressing environmental issue.

PRESENTATIONS:

03:00 PM MDT

Challenges in Delivering Risk Messages About Drinking Water:

Speaker(s): [Matthew Seeger](#), [Wayne State University](#)

03:15 PM MDT

Trending in an Instant, Crisis Communications for Water Utilities, Resources on PFAS Communications within the Guide

Speaker(s): [Matthew Junker](#), [The Municipal Authority of Westmoreland County](#)

03:30 PM MDT

Considering Risk Communication and PFAS?"

Speaker(s): [Ashleigh Day](#), [Northern Arizona University](#)

03:45 PM MDT

What Crisis Communication Can Tell Us About PFAS Messaging.

Speaker(s): [Lahne Mattas-Curry](#)

04:00 PM MDT

SALT Framework: Strategy, Action, Learning, Tools for PFAS Communication

Speaker(s): [Madeline Beal](#)

04:15 PM MDT

Discussion: What We Need to Improve PFAS Communication.

Speaker(s): Shawn McElmurry

WED134 - AI in Action: Enhancing Work with Intelligent Solutions

Moderator(s): Stephanie Estabrook

Event Type: Educational Sessions

Event Track: Intelligent Water

03:00 PM - 04:30 PM MDT | Wed | Room 406

OVERVIEW: This session features an engaging panel of young professionals who will discuss how AI is reshaping the workday and boosting efficiency to transformatively impact daily workflows. Following this, a presentation will delve into how AI was used to compile and understand young professionals' insights on the AWWA's Water 2050 initiative and the future of water management. Don't miss this opportunity to learn how young professionals are using AI and innovative thinking to shape the future of work

PRESENTATIONS:

03:00 PM MDT

How AI is Reshaping the Workday and Boosting Efficiency

Speaker(s): Alfredo Zendejas Rodriguez, CDM Smith, Jacob Phillips, American Cast Iron Pipe Co. :
American Ductile Iron Pipe

03:30 PM MDT

YP Perspectives on Water 2050

Speaker(s): Renee Lanza, GEI Consultants Inc

WED142 - Meeting & Addressing New Challenges in the Water and Wastewater Industry

Moderator(s): Debbie Albrecht

Event Type: Educational Sessions

Event Track: Legal, Financial, and Management

03:00 PM - 04:30 PM MDT | Wed | Four Seasons Ballroom 4

OVERVIEW: The water industry faces unprecedented challenges, including system investment, rehabilitation, and maintenance, while balancing environmental compliance and climate variability. These pressures impact customer bills and affordability amidst a flat customer base/limited customer base growth.

PRESENTATIONS:

03:00 PM MDT

**Meeting & Addressing New Challenges in the Water and Wastewater Industry:
Interactive Discussion**

Speaker(s): Debbie Albrecht, American Water Company, Jennifer Capitolo, California Water Association, Matthew Prine, American Water

WED144 - Leak Detection Technology Case Studies

Moderator(s):

Event Type: Educational Sessions

Event Track: Water Use Efficiency Practices

03:00 PM - 04:30 PM MDT | Wed | Mile High Ballroom 1ab

OVERVIEW: While many utilities may focus on detecting leaks in distribution systems, transmission lines are not immune to water loss. This session features two examples of approaches to evaluating transmission lines for leakage. A third example describes how CCTV coupled with AI can be used to assess pipe for potential leaks within pressurized water mains.

PRESENTATIONS:

03:00 PM MDT

Transmission Pipes are not the Sleeping Giants We Might Think: Considerations for Proactive Transmission Pipe Leak Monitoring.

The perception that 'Transmission pipes don't leak', is commonplace. These 'sleeping giants' are often overlooked or deferred for review based on fewer linear miles and lower break rates. While true, this logic does not capture the high consequence of failure, and broad potential for missed leaks on large diameter pipes. This paper will offer factors that Utilities should consider when assessing and monitoring critical transmission pipes. It will dive into a specific district example of using a permanent transmission pipe leak monitoring (TPLM) system in New Jersey. Finally, this example will offer insight on how a fixed solution can offer valuable supervision on a critical pipe, and add capacity to a utility's operations.

Speaker(s): [George W Smidhum Jr](#), *New Jersey American Water*

03:30 PM MDT

Leak Detection on Large Diameter Transmission Mains

There are many options for finding leaks on water distribution mains. Large diameter transmission mains typically operate at low to medium pressure and have very few access points for monitoring therefore pinpointing leaks is more difficult. Hydrophones were installed on a 7.5 km 24 inch pipe at intervals of up to 1/3rd mile. Two leaks were found in the first 4 days of operation. This presentation will show how the use of extremely sensitive hydrophones can detect acoustic signatures of leaks and other in-pipe disturbances on large diameter transmission mains where there are large distances between sensor points.

Speaker(s): [Paul Gagliardo](#), *Gagliacqua Consulting*

04:00 PM MDT

CCTV of Pressurized Water Mains? Why This Is Now an Important Tool in the Water Industry Water Loss Toolbox!

Water utilities have not traditionally seen the value of televising pressurized water mains. Until now. While most industry professionals agree that closed-circuit television (CCTV) cameras can't 'see' leaks, water utilities are combining CCTV cameras with new technology able to automatically identify leak locations and estimate flow rates, replacing less accurate acoustic sensors? The result: a dramatic reduction in the digging of dry holes, a more complete assessment of full length pipes to dramatically improve water loss management. The secret is not using CCTV cameras for continuous recording. Instead, using new technology to know where to STOP the camera so AI can confirm water particulates exiting the pipe.

Speaker(s): [Chuck Hansen](#), *Electro Scan Inc.*

WED148 - Asset Management in the Rockies

Moderator(s):

Event Type: Educational Sessions

Event Track: Water in the West

03:00 PM - 04:30 PM MDT | Wed | Mile High Ballroom 4cd

OVERVIEW: Learn how Rocky Mountain utilities are identifying regional challenges and planning for the future. Topics include sustainable approaches for on-site carbon generation, rehabilitation of pipes in challenging terrain and identify novel water sources in the region's arid climate.

PRESENTATIONS:

03:00 PM MDT

On-site GAC Reactivation for Communities in Colorado and Across the US

As GAC has been increasing in adoption for drinking water facilities to address multiple contaminants, concern has been growing about the economics and availability of raw material to meet industry needs. In response, more communities have been evaluating the feasibility of on-site GAC reactivation at local, utility-lead locations. In some cases, adjacent communities are looking at the prospects of banding together to offset capital investment and labor needs. This presentation will highlight results of multiple feasibility investigations from diverse communities in different geographies across the US including Aurora Colorado.

Speaker(s): [Brent Tippey](#), *HDR*

03:30 PM MDT

Under Pressure: Trenchless Rehabilitation of Raw Water Supply Pipelines in the Rocky Mountain Region

An overview of the various trenchless technologies available for rehabilitation of raw water supply pipeline applications is presented, with focus on methodologies that are best suited for difficult to access locations commonly encountered in mountainous regions of the Rocky Mountain West. System design considerations, installation procedures, and advantages of using a trenchless approach for raw water and pressure pipeline rehabilitation projects will be covered. Emerging trends and innovations that are occurring within the pressure pipeline rehabilitation sector will also be discussed, with example projects in the Rocky Mountain region highlighted where trenchless methods have been successfully used for raw water pipeline rehabilitation.

Speaker(s): [Jeff Maier](#), *Dewberry Engineers, Inc.*

04:00 PM MDT

Building Resilience: How Loveland Transformed Stormwater Management through Data-Driven Innovation

the City of Loveland, Colorado, was severely impacted by catastrophic floods, exposing critical vulnerabilities in its stormwater infrastructure. This session will explore how the city transformed its stormwater management practices through data-driven decision-making and advanced technology integration. Attendees will gain insights into the process of enhancing stormwater inspection workflows, improving asset management, and leveraging GIS for better infrastructure planning and maintenance. The session will showcase the real-world impact of these efforts, including improved public safety, environmental protection, and operational efficiency.

Speaker(s): [Mark Grabowski](#), *ITpipes*