2025 AWWA/PNCWA Cascade to Coast Short School Class Descriptions

Note: All classes are designated as follows:

(W) – Water Certification
(WW) – Wastewater Certification
(B) – Both Water and Wastewater Certification

COLLECTIONS

(WW) Package Lift Stations for FAST Retrofits: *Rich Owens, Owens Pump & Equipment.* Retrofits of a lift station can be very time consuming, and require expensive engineering in order to do a simple retrofit. Learn how fast and simple you can retrofit your lift station and discuss the advantages to each. 0.1 CEU

(B) Large Fuel Spills and How They Affect Your Water/Wastewater System: *Mark Landau and Matt Johnson, City of Monmouth.* Fuel spills in Monmouth; how the water and wastewater systems are affected, steps taken, testing, monitoring, air quality, disposal, cleanup, DEQ involvement, stakeholders, meeting held. 0.1 CEU

(WW) City of Eugene's Automotive Sector Stormwater Program: *Jon Wilson, City of Eugene.* The City of Eugene's municipal stormwater discharge permit was renewed by DEQ in 2021, and new permit requirements necessitated the development of an automotive sector stormwater program. In addition to automotive facilities, the scope of this program also includes the marine and powersports businesses within the City of Eugene's Urban Growth Boundary. This sector was chosen for its high potential to directly impact water quality due to the nature of material used and industrial practices commonly performed at these types of businesses. The focus of this program is to provide education/outreach to identified businesses and conduct inspections to assist with compliance efforts.
Today's presentation will focus on the development, initial, and ongoing implementation of the automotive sector stormwater program and will also highlight the workgroup resources needed, and collaboration with other programs and work groups that have contributed to the program's success. 0.1 CEU

(WW) Get the F.R.O.G. Out: *Dan Lawrence, RootX*. Chemical root and grease control for sanitary sewer systems. How & why roots grow in sewers, chemicals used for root control, Microbial vs Enzymes for FOG control and Emulsifier. 0.1 CEU

(WW) Sampling Wastewater and Streams for NPDES and WPCF Permits: *Emma Prichard, Oregon DEQ.* Training on DEQ's new Guidance Document titled "guidance for NPDES and WPCF Permit Monitoring". Sampling of pH, temperature, BOD, TSS, and bacteria. 0.1 CEU

(B) Vendor Tour: *Moderator: Lisa Erkert, EWEB.* Interactive time for attendees to learn about new technologies, equipment, and useful tools for the water and wastewater sectors by taking a tour of this year's vendors. Attendees will report to classroom and get instructions. They will select five vendors to hear 10-minute presentations from each vendor. Vendor tours are offered at various times and tracks throughout the short school. **Attendees only get CEUs for one vendor tour**. 0.1 CEU

(WW) When Dumb PIGS Get Smart - Innovative Tech for Inspection of Force Mains and Other Pressurized Pipe: *Mike Lemmen, SFE Global.* Presenting project details from two force main pigging and inline condition assessment projects with Clackamas County WES. Discussion will include planning and preparation, on-site activities, and verified results. Pump station analysis determined reduced pumping capacity was due to the force mains, not the lift stations. 0.1 CEU

(WW) Using Artificial Intelligence to Code Sewer Infrastructure: *Jim Brown, True North Equipment.* This class introduces Artificial Intelligence in Sewer/Stormwater Inspection coding and reporting. With the development of AI reporting software, the class will see how software has been trained to provide accurate observation recognition as compared to the standard we use today. 0.1 CEU

(WW) Advancements in Wastewater Collection System Monitoring: *Brogan Quist, SmartCover Systems.* This presentation focuses on how several local Oregon agencies can adopt and utilize unique monitoring technology, which gives them data in the field that they did not have before. Remote monitoring is now a mainstream tool for utilities to monitor level, flows, hydrogen sulfide and more, as they battle several different challenges in their wastewater collection system. Utilizing the latest in communication technology (satellite), these specific monitoring tools that can mount directly on the manhole covers – thereby eliminating the need for a confined space entry - and use ultrasonic/pressure sensors to monitor

water levels. In the Pacific Northwest, Inflow and Infiltration (I&I) studies are important to track and eliminate unwanted rain water in sewer systems. Remote monitoring can assist agencies in tracking down where I&I is coming from. These monitoring tools can be used in several remote monitoring applications. Many agencies are looking for ways to prevent and eventually eliminate Sanitary Sewer Overflows (SSOs). By collecting level data and sending specifically set alarms, one site can yield return on investment (ROI) by alerting field staff, who can then visit the site and prevent a spill. Other solutions can also include placing the remote monitors at sites which are cleaned multiple times a year (due to FOG, roots, etc). With the data going directly to the system operator via phone, mobile app, or desktop website, the knowledge of these water levels and the lack of problems at these sites has enabled re-deployment of staff to other problem areas. This yields both ROI in time and money within one year of utilizing the system. By utilizing this same general deployment, agencies can now monitor H2S levels in their sewer systems as well. This new feature can assist in odor studies, dosing, and overall health of the pipe/manhole. 0.1 CEU

(WW) Brewery Wastewater Permitting: *Zach Foster, City of Eugene.* Breweries produce and discharge large volumes of industrial wastewater with corrosive contaminants that may be easily overlooked but can have large impacts on receiving streams, conveyance systems, and worker health and safety. In this presentation, Zach discusses the history of the Industrial Pretreatment Program, EPA's "Significant Industrial User" designations, and how wastewater regulations apply specifically to production breweries. Case studies are included using several examples with varying permit requirements. Regulatory alternatives and proactive measures are also discussed for breweries that do not necessarily qualify for a permit but still require oversight or Best Management Practices to prevent damage and disruptions to wastewater treatment facilities and conveyance systems. 0.1 CEU

(WW) Alternative to Gravity Sewer – Pressure Sewer: *Tim Owens, Correct Equipment.* The industry misunderstanding of low-pressure sewer, flow study and analysis of gravity vs low pressure collection systems. 0.1 CEU

(WW) Bypass Pumping, Contingency Planning, and Dedicated Bypass Systems: *Don Ehly, Xylem.* Basics of bypass pumping including tips to be successful, why it is important to have an emergency plan for your existing pump stations, and what are the benefits of having a dedicated bypass system installed at your pump station. 0.1 CEU

(WW) Oregon City Private Lateral Rehabilitation Program - Challenges and Solutions: *Kenneth Cannady-Shultz, City of Oregon City.* Private sewer laterals constitute a significant source of I&I for Oregon City's sewer system. The city instituted a Private Lateral Rehabilitation Program to address failing laterals at City expense and City funds. Trenchless technologies have proven key to keeping property owners happy and prices low. 0.1 CEU

(B) Reducing Operating Costs with Energy Efficiency: *Nick Lorenz, Energy350.* An overview of energy use in water and wastewater treatment. By understanding how and where energy is used we can identify common opportunities and utilize Energy Trust incentives to support project completion. 0.1 CEU

(WW) Case Studies in Computer Vision & Cloud in Sewer Assessment and Rehab Planning: *Andrew Florita, Sewer AI.* An in-depth look at the use if a new and innovative approach to capital planning and asset management through leveraging AI Computer Vision, Photogrammetry, and, Cloud software tools by several large utilities; including the City of Houston, Los Angeles County Sanitation Districts, and the City of Phoenix. 0.1 CEU

(WW) FOG Inspection 101 and One Water Concept: *Destin Ranch, City of Eugene.* Food Service Establishments (FSE's) can very quickly reduce the capacity of your community wastewater conveyance system or potentially cause sanitary sewer overflows in their area. FSE's often fail to effectively implement Best Management Practices and neglect to maintain an important part of their kitchen equipment – the grease interceptor (GI). FSEs can also have a negative impact on the stormwater conveyance system by improperly managing their used cooking oil or by performing kitchen maintenance activities outside, which is unfortunately quite common. In this presentation Destin will go over the basics of performing FSE Fats, Oils & Grease (FOG) inspections including crucial things to look for to have the greatest positive impact at reducing FOG in the wastewater conveyance system. He'll also talk about extra steps to take such as providing education and outreach about stormwater catch basin protection and maintenance, and some best practices to reduce or eliminate illicit discharges caused by FSEs. 0.1 CEU

(WW) Sewer Rehabilitation in Access Limited Sites: *Brendan O'Sullivan, Consor.* Overview of how to approach sewer improvements in difficult to access sites. Discussion of developing selection criteria, technology alternatives analysis, design approach, and how to develop contract documents to address risks and challenges associated with site constrains. Will include project case studies. 0.1 CEU

(WW) DEQ Operator Certification Basics: *Kimi Grzyb, Oregon DEQ.* This one-hour presentation provides an overview of the process for getting certified as a Wastewater Operator in Oregon. Content will cover how to get and stay certified, reciprocity, and opportunity for program feedback/questions. 0.1 CEU

(B) Math for Operators: *Brian Stevens, Oregon Environmental Solutions.* This course will cover math and hydraulics skills used by water and wastewater system operators. Upon finishing this course, the student will demonstrate the ability to solve problems in math and hydraulics in a logical, legible and easily followed format. Topics will include unit conversions, loading, area/volume, dosing and more. 0.2 CEUs

WASTEWATER

(WW) WCOS Lab Training: *April Stratton, Waterlab.* Lab procedures, BOD, TSS, and troubleshooting. 0.1 CEU

(WW) Upgrade your Air and Save - Aeration Blower: *Yunsoo (Ryan) Song, TNE Global Inc*. Blower overview and industry trend for high efficiency and clean technology. 0.1 CEU

(WW) Thickening: Simple Process, Mixed Results: *Mario Benisch, HDR, Inc.* Thickening is simple process but rarely provide consistent performance at any level, let alone consistent high performance. This lesson reviews what different technologies can accomplish, what designs and operators should consider, and what common pitfalls are encountered. 0.1 CEU

(WW) Factors Impacting Dewatering: *Mario Benisch, HDR, Inc.* Dewatering and disposal of biosolids accounts for the second largest operation cost in treatment facilities. This lesson discusses the many factors that impact dewatering (e.g. process design, polymer, external substrate, process chemicals, environmental), and strategies for improvising performance. 0.1 CEU

(B) Planning for Data Management and Visualization: *Mario Benisch, HDR, Inc.* Many emerging tools like machine learning, digital twins, or advanced data analytics require data. This data should be vetted, interlocked, and include all necessary performance to evaluate performance. Most utilities do not have the necessary infrastructure to support these tools and require planning to the allocate necessary resources. 0.1 CEU

(WW) Process Control - How do I know if My Plant is Working Correctly: *Max Hildebrand, City of Corvallis.* To help O&M staff know the importance of how each unit process should be operated. We will discuss the functionality of each process and how to track performance. 0.1 CEU

(WW) Revolutionizing Sludge Dewatering: *Rich Owens, Owens Pump & Equipment.* Why dewater your sludge? Find out how sludge can be dewatered and with what types of equipment. Each type of equipment has its positives and negatives. What are the essential features you want in your plant. 0.1 CEU

(WW) Basics of Membrane Bioreactor (MBR) Technology: *Hiro Kuge, Kubota Water and Environment.* Overview of Membrane Bioreactor (MBR) Technology, covering key aspects of its design, operation, and troubleshooting. Produce effluent that meets Class A recycled water standard. Achieve nitrogen and phosphorus limits. 0.1 CEU

(WW) Common DMR Reporting Errors: *Bradley Eagleson, Oregon DEQ.* The lesson will touch on some of the more common errors DEQ sees and how to ensure that operators are reporting accurately. Topics will include bacterial resampling, mass load suspension, and weekly average calculation. Session will provide resources on reporting. 0.1 CEU

(B) Vendor Tour: *Moderator: Lisa Erkert, EWEB.* Interactive time for attendees to learn about new technologies, equipment, and useful tools for the water and wastewater sectors by taking a tour of this year's vendors. Attendees will report to classroom and get instructions. They will select five vendors to hear 10-minute presentations from each vendor. Vendor tours are offered at various times and tracks throughout the short school. **Attendees only get CEUs for one vendor tour**. 0.1 CEU

(WW) Compliance Pitfalls: *Johnny Leavy, City of Medford.* Regulatory permits contain a multitude of monitoring, reporting, and recordkeeping requirements - often stated directly but sometimes incorporated by reference. The devil is in the details, and what you don't know (or don't do) can hurt you. 0.1 CEU

(WW) Your DEQ Online: *Tiffany Yelton Bram, Oregon DEQ.* In February 2023, the Wastewater Operator Certification program transitioned to the new cloud-based system called Your DEQ Online. This presentation will provide a demonstration of how to register and set up an account in Your DEQ Online so applications and renewals can be submitted and paid for online. 0.1 CEU

(WW) Discharge monitoring Reports in YDO: *Mark Bentz, Oregon DEQ.* This one-hour presentation provides an overview of Your DEQ Online and why it is being used, the importance of account set up and how an account is used to access the Discharge Monitoring Report function of YDO, orientation of how a DMR looks and works in YDO, how to fill out the DMR, special things to pay attention to and how to submit additional information. 0.1 CEU

(B) Applying SANS Critical 5 Cybersecurity Controls for Water Utility Systems: *Dr. Kenneth G. Crowther, Xylem Inc.* 6 small lesson segments with mini-exercises that can be completed; will cover introductory materials about the value and purposes of cybersecurity; then will have one module for each of the SANS Critical 5 cybersecurity controls. Those attending will leave with a holistic, but simple-to-remember mental model with application. 0.1 CEU

(WW) Activated Sludge Treatment Basics: *Jonathan Gasik, Retired Oregon DEQ*. An overview of the history of activated sludge treatment development, activated sludge treatment theory, and activated sludge treatment facility configurations. 0.1 CEU

(WW) Activated Sludge Process Control: *Jonathan Gasik, Retired Oregon DEQ*. This class is based on Michigan DEQ's training manual for wastewater treatment plant operators "Activated Sludge Process Control". The class covers calculations of organic loading, food-to-microorganism ratio, cell residence time, and wasting; and using of settlometer, OUR, and microscopic examination. 0.1 CEU

(WW) Activated Sludge Process Control Practical Workshop: *Jonathan Gasik, Retired Oregon DEQ*. This workshop is a practical continuation of "Activated Sludge Process Control". It will include three 40 minute sessions at the wastewater treatment plant: A) plant walkthrough with use of sludge judge and DO measurements, B) microscopic examination, and C) Settlometer, OUR, and calculations. ***At the Albany/Millersburg WRF at 405 NE Davidson St. Provide your own transportation.*** 0.2 CEUs

(B) Hach Wims First Impressions and Initial Setup: *James Green, City of Corvallis.* Every plant stores data whether it is pen/paper, Microsoft Excel, Hach Wims, custom built DB. This is our story of our transition to Hach Wims DB from a SQL DB, what we learned, what we would have done differently, what Hach Wims reports look like, how to setup variables, how to create a location hierarchy. This is a one-year review of the software application Hach Wims. Lessons learned and what the salespeople won't tell you. How we set up the database, what was required, and how we are using it to this day. How to maintain data integrity and what is really required in order to achieve that goal. 0.1 CEU

(WW) Flammable Gas Systems Purging Practices Incorporating Federal Standards: *Spencer Goodro, City of Eugene.* Purging flammable gas systems in and out of service using federal standards found in NFPA 56 and AGA Purging Principles and Practice. 0.1 CEU

DISTRIBUTION

(B) Valve Maintenance and Backflow: *Carl Schaumburg, City of Corvallis.* This presentation will deal with the operation, repair, and maintenance of valves. 0.1 CEU

(B) Active Shooter Response Planning: *Ray Johnson, BMI.* Today you are 18 times more likely to experience workplace violence than a fire. OSHA requires all employers to have Emergency Action Plans including a written plan and training for an Active Shooter event. Learn how to construct a plan, what to expect when police arrive, conduct a head count and train employees how to respond to an Active Shooter using the "Run, Hide, Fight" protocol. 0.2 CEUs

(B) Cross Connection Control Awareness: *Ray Johnson, BMI.* An EPA funded study found that almost 96% of all cross connections in the US were health hazards. All Water Distribution, Water Treatment Plant, Wastewater Collection and Wastewater Plant Operators should have a basic understanding of how to identify a cross connection and what causes backflow. This presentation will cover the basics of Cross Connection Control and Backflow including; Terminology and Definitions; Hydraulics of Backflow; Common Cross Connections; Documented Backflow Incidents; Regulatory Jurisdictions; Methods of Protection; Backflow Devices; Backflow Prevention Assemblies; Overview of Water System's Cross Connection Control Programs; Duties of Backflow Testers and Cross Connection Specialists. 0.1 CEU

(W) Hydraulic Modeling & the Importance of Collaboration between Engineering/Operations: *Brandon Nakamura, Carollo.* Brief overview on hydraulic modeling and the importance of collaboration between engineering, management and operations for hydraulic model construction, calibration and distribution system controls. 0.1 CEU

(B) Underground Utilities: What You Don't See Can Hurt You: *Joshua Thomas, Oregon Utility Notification Center.* Attendees will gain understanding and appreciation for the importance of safe excavation when digging above the critical infrastructure beneath our feet in communities across our state and beyond. Knowing what's below can help prevent costly damages, temporary loss of critical utility services, injuries or worse. 0.1 CEU

(B) The Mystery of Water Samples: *Rebecca Picton, Eurofins Edge Analytical.* Learn how samples need to be collected, stored, and transported. Find out what goes on in the laboratory where the samples are analyzed. 0.1 CEU

(B) Couplings, Restraints, and Pipe Repair: *John McCulley, Romac.* The class will review the various types of couplings, restraints, and pipe repair products. We will spend time looking at examples from the field, review proper installation techniques, and discuss best practices. 0.1 CEU

(B) Vendor Tour: *Moderator: Lisa Erkert, EWEB.* Interactive time for attendees to learn about new technologies, equipment, and useful tools for the water and wastewater sectors by taking a tour of this year's vendors. Attendees will report to classroom and get instructions. They will select five vendors to hear 10-minute presentations from each vendor. Vendor tours are offered at various times and tracks throughout the short school. **Attendees only get CEUs for one vendor tour**. 0.1 CEU

(B) Chlorine Chemistry: *Brian Stevens, Oregon Environmental Solutions.* Covers the importance of the disinfection of drinking water and wastewater through the use of chlorine and chlorine compounds. This course will focus on the use of chlorine for disinfection. Topics include chlorine chemistry, chloramines, break point chlorination, environmental conditions, and troubleshooting. 0.1 CEU

(B) Oregon Dig Laws: *Jason Williams, NW Natural.* Update on Oregon Dig Laws and discussion on how to prevent damages to public utilities. 0.1 CEU

(W) Smart Utility Solutions: *Eric Ongstad, Xylem*. In the United States, nearly 6 billion gallons of treated water is lost each day due to leaking pipes. Additionally, contaminants from old pipes or pollution can suddenly and unknowingly enter the water system, putting consumers at risk. Water systems are becoming more challenging to manage as assets are spread across a physical footprints spanning miles.
This class explores the integration of advanced technologies in water utilities to improve efficiency, reduce waste, and ensure sustainable water management. Students will learn about the latest innovations in smart water systems, including IoT devices, data analytics, and automated control systems.
Key Topics: Introduction to Smart Water Utilities, Definition and importance of smart water utilities and overview of current challenges in water management. Technological Components, IoT devices and sensors for real-time monitoring. Data analytics for predictive maintenance and leak detection. Automated control systems for efficient water distribution.
Case Studies, Successful implementations of smart water technologies in various cities and lessons learned and best practices. Benefits of Smart Water Utilities: Improved water conservation and reduced leakage, enhanced operational efficiency and cost saving, and better customer service and engagement. Challenges and Solutions: Technical and financial barriers to implementation. Strategies for overcoming these challenges. Future Trends: Emerging technologies and their potential impact on water utilities. The role of smart water utilities in addressing global water scarcity.
Learning Outcomes: Understand the key components and benefits of smart water utilities. Be able to analyze and evaluate different smart water technologies. Gain insights into the practical challenges and solutions in implementing these systems. Be prepared to contribute to the development and management of smart water utility projects. 0.1 CEU

(W) Replacing One Pre-Stressed Concrete Tank with Two Welded Steel Tanks: *David Looney, Springfield Utility Board (SUB).* Project overview presentation for a water storage tank replacement project in Springfield that involved several components related to seismic resiliency and improvements to provide functional access and promote operator safety. 0.1 CEU

(W) Optimizing Water Quality in Drinking Water Distribution Systems: The Role of Active Mixing: *Haley Goddard, Cleanwater1.* This presentation will explore real-world applications of active mixing technology and its role in addressing key water quality challenges within drinking water storage tanks. Through case studies and performance data, it will demonstrate how active mixing can optimize disinfectant residual levels, reduce disinfection byproducts, and enhance overall water quality in distribution systems. 0.1 CEU

(B) Incident Preparedness for Water and Wastewater Facilities Tabletop Exercise: *Leslie Ann Kainoa, CISA.* Tabletop exercise to discuss and practice incident preparedness based on an organization's incident response plan. This is an interactive session that will require participation and information sharing. Bring incident management plans. 0.2 CEUs

(W) Proactive Distribution Network Management with Pressure and Leak Monitoring: *Nicole Kaiser, Badger Meter.* This presentation will highlight the benefits of remotely monitoring for pressure changes and leaks in a distribution network, along with practical considerations for developing these monitoring programs. 0.1 CEU

(W) Restoring Water System Confidence with UV CIPP: *Brendan O'Sullivan, Consor*. Overview of CIPP design, how it can be applied to water system rehabilitation, review important/critical design elements that need to be considered, and highlight case studies with lessons learned. 0.1 CEU

SOURCE/TREATMENT

(B) Intermediate Treatment with Ozone: 20 Years and Beyond: *Kim Reid, Veolia.* The Willamette River Water Treatment Plant has treated drinking water with ozone for 23 years. We will cover ozone technology, the history of treatment outcomes, costs, and the challenges of replacing the original equipment during the summer of 2024. 0.1 CEU

(B) Vendor Tour: *Moderator: Lisa Erkert, EWEB.* Interactive time for attendees to learn about new technologies, equipment, and useful tools for the water and wastewater sectors by taking a tour of this year's vendors. Attendees will report to classroom and get instructions. They will select five vendors to hear 10-minute presentations from each vendor. Vendor tours are offered at various times and tracks throughout the short school. **Attendees only get CEUs for one vendor tour**. 0.1 CEU

(W) Fires in the Watershed – Lessons Learned from the PNW and Beyond!: *Jude Grounds, Carollo and Kimberly Gupta, Portland Water Bureau.* Presentation will focus on five case studies of watershed wildfires, and their associated impacts on raw water quality. Lessons learned will focus on water quality treatment strategies to monitor and mitigate the impact of raw water quality 'challenges' on finished water quality and ultimately, public health. 0.1 CEU

(B) Management of Aging Infrastructure: *Leo Newberg, Inn at Otter Crest Water.* Discuss strategies, resources, and tools for overcoming the numerous challenges associated with running an aging water or wastewater system. 0.1 CEU

(W) Cascade Groundwater Alliance – Developing a Groundwater Partnership: *Mike Whiteley, City of Gresham.* The City of Gresham and the Rockwood Water People's Utility District are partnering to develop an independent drinking water source. This presentation will discuss how the partnership was formed, water rights issues, project management allocations and funding options. 0.1 CEU

(W) PFAS Drinking Water Rule Overview: *Gregg Baird, OHA.* This presentation will provide an overview of the new PFAS drinking water regulations that were finalized April 2024. Topics covered include the new MCLs, monitoring requirements, compliance determinations, treatment options, implementation timelines, and funding available to address PFAS and other emerging contaminants. 0.1 CEU

(B) Applying the New Effective Utility Management Framework to Your Utility: *Michael Grimm, West Slope Water District.* Effective Utility Management (EUM) is a management approach developed by water sector leaders for water sector leaders. This presentation provides an overview of the modernized EUM Framework for 2024 including 5 Keys to Management Success and the 10 Attributes of an effectively managed utility. 0.1 CEU

(W) Water Treatment Chemistry 101 - Conditioning, Coagulation, & Flocculation: *Chris Beebe & Gregory Nieckarz BWS, Inc.* The focus of this seminar will be on the basics of water treatment from a Chemistry perspective including a discussion of the important role of alkalinity for conditioning water for effective separation of solids.0.1 CEU

(W) Building a Spill Response Program Step by Step: *Arlo Todd & Katie Baker, Medford Water Commission.* Stakeholders determine need for spill response/protection program. Obtained series of grants for scoping, risk

assessment, plan development, specialized training, and material acquisition. Each phase required partnership and planning to proceed. We will walk you through the steps we took to develop a Spill Response Program 0.1 CEU

(W) Water Supply Resiliency and Curtailment: *Tamera Smith & Kerri Cope, Oregon Water Resources Department.* We will discuss the importance of curtailment plans and their role in ensuring water supply resilience including examples of strategies for building long-term supply reliability. 0.1 CEU

(W) Regenerable Resin Brine Waste Reduction: *Chris Beebe, BWS, Inc. & Cathy Swanson, Ecolab, Purolite Resins.* Learn the best ways to minimize brine waste with ion exchange resins. 0.1 CEU

(B) Unveiling the Science of Polymer Activation: Exploring the Benefits through Applications: *Haley Goddard, Cleanwater1.* The optimization of polymer use in water and wastewater treatment processes remains a challenge, leading to high recurring expenses and sub-optimal process performance. This presentation emphasizes the critical role of polymer activation and its direct impact on process efficiency. By selecting suitable polymer and employing appropriate mixing technologies, polymer activation can reduce polymer usage and enhance the downstream separation process, resulting in improved overall performance and substantial annual cost savings.
The presentation focuses on the science of polymer activation, offering insights into the fundamental principles of polymer mixing. It showcases the advantages of adopting a two-stage mixing approach, characterized by high initial mixing energy followed by low and uniform mixing energy. Theoretical considerations and practical test data provide tangible evidence of the benefits of this approach for both emulsion and dry polymers. Additionally, a comparative analysis of mechanical, hydro-mechanical and hydraulic mixing technologies will be presented to aid in equipment selection for specific applications.
The presentation not only highlights the impact of polymer savings but also demonstrates the effect on the downstream process. Comparisons between different mixing technologies will provide insights for decision-making processes when optimizing polymer activation. Additionally, the discussion will include design considerations and valuable lessons learned, offering practical guidance for implementing effective polymer activation solutions. 0.1 CEU

(B) On-Site Sodium Hypochlorite Generation: A Safe & Cost Effective Solution for Disinfection: *Haley Goddard, Cleanwater1.* The adoption of on-site hypochlorite generation (OSHG) systems for disinfection has experienced significant growth in recent years, driven by safety concerns associated with chlorine gas usage in water and wastewater utilities. However, with soaring commodity prices post-covid, converting to OSHG presents utilities a rare opportunity to make a significant improvement investing in the safety of operations staff and surrounding community while simultaneously providing a positive return on that investment. This presentation highlights the economic advantages of OSHG, including excellent return on investment, better cost control, and enhanced operational planning for utilities. By utilizing safe and readily available raw materials such as electricity and salt, OSHG systems offer consistent operating costs over time, in contrast to the unpredictable cost of bleach deliveries.
Real-world case studies, including those from major water utilities, will be showcased to highlight the success of selecting OSHG over bleach 12.5% for disinfection. Estimated annual savings based on actual usage and historical chemical and electricity prices will be reviewed, along with the positive environmental impact of reducing chemical deliveries and greenhouse gas emissions.
Lessons learned from over 30 years of OSHG installations will also be shared. Key aspects such as salt handling, salt purity, water softener reliability, ongoing maintenance, and system layout will be addressed, offering practical insights to ensure successful implementation and operation. 0.1 CEU

(W) Cyanotoxins and the City of Salem: *Cody Marrs, City of Salem.* From the 2018 “do not drink” notice to record toxin levels at the treatment facility in 2024, this class will cover discovery, impact, upgrades, treatment techniques and lessons learned since the discovery of cyanotoxins in 2018. 0.1 CEU

(W) Green Peter Drawdown Project: *Chris Germond, City of Albany.* Green Peter Drawdown plan, impacts, and future. 0.1 CEU

(W) Groundwater Basics and Source Protection: *Tom Pattee, Oregon Health Authority.* Basic introduction to the occurrence and movement of groundwater. Overview of well construction and OHA/DEQ produced Source Water Assessments. Introduction to basic elements of drinking water source protection and how to make use of Source Water Assessments. 0.1 CEU

(B) Cascadia -Preparing to Be Ground Zero: *Jenny Demaris, (EWEB).* 1) Review of characteristics to the Cascadia Subduction Zone earthquake fault: magnitude, frequency, impact zone, liquefaction, local tsunami, landslides, coastal subsidence, impacts to infrastructure. 2) Anticipated local, state, federal response, 3) Preparedness efforts needed at the personal and local level. 0.2 CEUs

WATER TOURS

(W): Hayden Bridge Water Treatment Plant Tour: *Scott Brown, EWEB.* Two-hour tour of the Eugene Water & Electric Board's Hayden Bridge Water Treatment Plant including ponds, chemical feed system, SCADA controls, pilot filters, basins, filtration, SHC disinfection, laboratory, finished water pumping and SHC generation. ***At 3957 Hayden Bridge Rd, Springfield. Provide your own transportation.** 0.2 CEUs

Backup presentations in case of cancellation:

(W) Water Operators Roundtable: *Lisa Erkert, EWEB.* Interactive course to have water operators discuss technologies, equipment, and processes that contributed to plant improvements. Also discuss common issues at water treatment plants to see how others address the issues and make improvements. 0.1 CEU

(WW) Wastewater Operator Roundtable: *Brian Stevens, Oregon Environmental Solutions.* This course will provide a collaborative space for wastewater operators to discuss current issues in the community it is experiencing. Topics will include regulatory changes, operational efficiencies, workforce issues, energy savings, and more. 0.1 CEU

(WW) Cleaning and Televising Sewer & Storm Pipe: *Sheldon Teeples, Subsite/Ditchwitch.* New and better methods of cleaning and televising sewer and storm pipes. 0.1 CEU

(WW) Inflow and Infiltration-Manhole Inspections: *Jim Brown, True North Equipment.* This class discusses some of the differences between Inflow and Infiltration, where to look, and methods of inspection manholes in sewer systems. reasons for inspection and assessment, and methods and terminology used in manhole inspection as well as a brief discussion into NASSCO and MACP assessment. 0.1 CEU

(WW) Pipe Assessment 101: *Jim Brown, True North Equipment.* This class discusses some of the history of sanitary sewer, reasons for inspection and assessment, and methods and terminology used in CCTV inspection as well as a brief discussion into NASSCO and PACP assessment. 0.1 CEU