

2023 AWWA 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

(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

(B) Submersible Pumps and Preventative Maintenance: *Dave Olson, Xylem.* What makes up a pump and how to maintain it. 0.1 CEU

(WW) Reduce Operating Costs with Energy Efficiency: *Kelson Redding PE, Energy 350.* It is a common misconception that energy is a fixed cost. This presentation will highlight the biggest energy users common in wastewater treatment plants and present ideas to help reduce operating costs. In addition, we will show you how to get utility incentives for energy efficiency projects. 0.1 CEU.

(B) Cellular Telemetry: *Tim Owens, Correct Equipment.* Introduction to cellular based telemetry. An overview of different types of radio architectures. Navigation of how these systems work while detailing the pros and cons of each type. 0.1 CEU

(WW) Wipes in Our Pipes – Recent Product Labeling Laws: *Frank Dick, City of Vancouver.* Overview of conditions and problems caused by consumer wipes entering sewer systems and wastewater treatment plants over the last 20 years. Recent legislation in the Pacific Coast states now require more prominent “Do Not Flush” labeling on packages. Is it making a difference? 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. Complete vendor passport required for attendance. 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) Inline Pipeline Inspections: Technologies & Methodologies: *Jenna Mariano, Pure Technologies, a Xylem Brand.* Attendees will learn modern inspection, assessment, and management techniques of pressurized pipelines through the use of state of the art and innovative solutions and technologies. 0.1 CEU

(WW) Manhole and Trenchless Pipe Repair: *Doug Troyer, Underground Tech.* What to look for in storm or sanitary sewer systems and a look at technologies available to protect and extend the life of infrastructure. 0.1 CEU

(WW) Solutions for Pump Plugging: *Rich Owens, Owens Pump & Equipment.* How to prevent plugging in wastewater collections. 0.1 CEU

(WW) Influent Pump Station Flow Equalization at the Rock Creek AWWRF: *Chris Maher, Clean Water Services.* Lesson covers the development and implementation of influent flow equalization including data analytics, programming, and plant benefits such as energy efficiency, equipment runtime, process stability and monitoring of collection system conditions. 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, assessment, and methods and terminology used in manhole inspection as well as a brief discussion into NASSCO and MACP assessment. 0.1 CEU

(WW) Package Lift Stations for FAST Retrofits: *Rich Owens, Owens Pump & Equipment.* How to upgrade your lift station with minimal downtime and retrofit. 0.1 CEU

(WW) Intelligent Wastewater Pumping – Station, Pump & Control Considerations for Your Next RFP: *Simon Cartwright, Xylem – Flygt Products.* Over the course of two hours, we will explore the newer wastewater lift station controls

which if used correctly can reduce operational costs significantly. We will also cover the optimal station design and pump considerations that are needed to implement these controls culminating in a look at the next generation of combined systems. 0.2 CEU

(WW) Pump Station and Wastewater Construction: *Zach Toney, K&E Evacuation.* Contractor point of view on constructing pump stations and wastewater facilities. 0.1 CEU

(WW) Wastewater Collections Asset Management in Albany, Oregon: *David Twenge, City of Albany.* Overview of our use of NASSCO inspections and asset management process for sanitary and storm sewer wastewater systems. 0.1 CEU

(WW) Working Towards Compliance: Case Study and Industrial Pretreatment Program Development: *Stephanie Kerns, City of Newport.* A Case Study of permitting a large brewery in a small community which includes steps taken, successes, failures and lessons learned. Describes the breweries effect on the Wastewater Treatment Plant and how the permit was created to help lessen those negative effects. Development of the Pretreatment Program. 0.1 CEU

(B) Utility Operator Math: *Brian Stevens, City of Albany.* This course will cover basic math and hydraulic skills used by water/wastewater plant operators. Topics include unit conversion, area and volume, dimensional analysis, chemical dosing, flow, and velocity. 0.1 CEU

WASTEWATER

(WW) Sludge Screen Pilot Project at the City of Corvallis WWRP: *Max Hildebrand & Bob Esch, City of Corvallis.* To investigate the efficacy of the Huber StrainPress sludge cleaning screen in processing primary and secondary sludges. 0.1 CEU

(WW) MWMC Renewable Natural Gas Project, An Operators Perspective: *Steve Barnhardt & Spencer Goodro, City of Eugene.* Discuss RNG project origins, timelines, start-up, commissioning, and lessons learned. 0.1 CEU

(WW) Talking Water Gardens Temperature Treatment Wetland: *Joe Deardorff, City of Albany.* Talking water gardens utility as a wastewater reuse, recreation, and ecological resource. 0.1 CEU

(WW) Activated Sludge Foundations for Process Control: *Mark Walter, Waterdude Solutions.* Present process control tests and analysis for activated sludge operation. Identify key parameters and expected ranges. Discuss operational response options to out-of-range parameters. Utilize case studies and data analysis to illustrate how tests are interpreted. 0.1 CEU

(WW) Wastewater Treatment Plant Condition Assessment: *Mark Walter, Waterdude Solutions.* Present techniques to perform asset condition assessment of WWTP systems. Illustrate how systems are developed to include associated components. Discuss how accurate equipment inventory contributes to a complete WWTP assessment. Show how results contribute to effective asset repair, replace, refurbish decisions. 0.1 CEU

(WW) Operational Strategies: Part of the Big Picture: *Max Hildebrand, City of Corvallis.* To help O&M staff to understand the importance of how each unit process should be operated. We will discuss Key Performance Indicators, goals, and expectations. 0.1 CEU

(WW) Alternatives to SO₂ for Dechlorination: *Matt Barrier, Northstar Chemical.* To provide a current market snapshot for SO₂ and what is driving the challenges with price and availability. We will review Sodium Bisulfite as an alternative and provide a market update for that chemistry as well. 0.1 CEU

(WW) Lagoon Rehabilitation Including Cold Weather Nitrification by MBBR: *Tom Daugherty, Triplepoint Environmental.* This presentation will profile real world case studies to evaluate the performance of lagoon rehabilitation alternatives with the view of lowering maintenance, energy inputs, and improving treatment. It is common knowledge that wastewater infrastructure is aging. Given the limitations of conventional lagoon aeration technologies, the potential upgrading of these municipalities is hindered by financial difficulties, the desire to limit treatment downtime, and a general lack of technology options. The purpose of this presentation is to evaluate lagoon rehabilitation using data from multiple case studies. Lagoon systems requiring rehabilitation are often limited to the installation of one of two process non-interruptive technologies: suspended fine bubble diffused aeration and surface aeration. Improvements in fine-bubble technology have led many plants to switch from coarse bubble diffusers, which yield greater surface area per volume of air. Numerous clean-water laboratory tests have demonstrated the improved oxygen-transfer efficiency of the fine bubble

(USEPA, 1989). Surface Aerators have undergone few technological changes in the past decade and occupy a stalwart presence in the lagoon aeration market. While this technology represents a suitable option for lagoons, its frequent maintenance requirements, and high energy consumption drive municipalities to seek out treatment alternatives. Ammonia is a compound of nitrogen and hydrogen that comes from a number of different sources in municipal wastewater. When discharged into the environment, ammonia causes environmental degradation including directly harming fish and amphibians. Due to the impacts of ammonia and other nutrient pollution, the EPA is issuing new permits requiring certain lagoon systems to meet low ammonia effluent levels as low as 0.6 mg/L as a 30-day average. The most common method of ammonia removal in wastewater treatment is via nitrification. Nitrification is the process by which ammonia is converted first into nitrite, then nitrate by a specific kind of bacteria known as nitrifiers. Municipal lagoon systems can struggle to nitrify due to several common shortfalls, including low water temperatures in winter, a lack of dissolved oxygen, high BOD levels (above 20-30 mg/L), insufficient nitrifier mass, and lack of mixing. MBBRs can be designed as a nitrification reactor to guarantee nitrification at any lagoon temperature. Based upon treatment processes proven over 30 years, MBBRs can be incorporated into an existing lagoon system likely without the need for any additional land, with a typical footprint requirement of just 250 square feet for a 0.25 MGD lagoon system. 0.1 CEU

(WW) Compliance Pitfalls: *Johnny Leavy, City of Medford.* How to avoid pitfalls of commonly overlooked NPDES permit requirements. 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. Complete vendor passport required for attendance. 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, City of Albany.* Presentation on the basics of chlorine chemistry pertaining to water and wastewater treatment. Chlorine math will be included. 0.1 CEU

(WW) Fundamentals of Oxygen Transfer and Biological Growth Kinetics: *Chris Maher, Clean Water Services.* Lesson covers oxygen transfer with two film theory, alpha and beta coefficients, fouling and diffuser measurements, Monod kinetics, and phases of biological growth. 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

(WW) Chemical Treatment Fundamentals: *Chris Maher, Clean Water Services.* Lesson covers chemical concentration calculations, dosing calculations, stoichiometry, reaction orders and kinetics, chemical reactions, and safety. 0.1 CEU

(WW) Wastewater Operator Roundtable: *Brian Stevens, City of Albany.* Offer a collaborative environment among operators to discuss and learn from each other's facilities and events. Topics include operations, maintenance, chemicals, permit renewal, etc. 0.1 CEU

(WW) Albany WRF Dewatering and Compost Upgrade: *Charles Wright, KJ and Brian Stevens, City of Albany.* This lesson will chronicle the history behind the need for a composting project, compost facility construction, facility start-up, and composting basics. 0.1 CEU

(WW) DEQ Operator Certification Basics: *Kimi Grzyb, Oregon DEQ.* Content will cover how to get and stay certified, reciprocity, and opportunity for program feedback/questions. 0.1 CEU

(WW) Your DEQ Online Account Registration: *Jessica Lorenz (Oregon DEQ).* The Wastewater Operator Certification program will be transitioning in February 2023 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. 0.1 CEU

WASTEWATER TOURS

(WW) City of Salem's Willow Lake Water Pollution Control Facility Tour: *Daniel Hill, City of Salem.* Plant profile tour of Willow Lake Water Pollution Control facility. 0.1 (CEU)

(WW) City of Jefferson Wastewater Facility Tour: *Kyle Ward, City of Jefferson.* Review City of Jefferson Wastewater Treatment system processes and equipment. The facility is an intermittent cycle extended aeration system with aerobic digestion and solids holding lagoon. 0.1 CEU

DISTRIBUTION

(W) What if Your Meters Can Hear the Leaks You Can't See: *Tim Owens, Correct Equipment.* Acoustics are extensively used for locating leaks within a water grid. A new approach is used in an ultrasonic sensor housed inside of a water meter. Since meters are installed at every customer location, operators will have greater coverage to monitor the system for leaks in service lines as well as the distribution lines. 0.1 CEU

(B) Extending the Useful Life of Your Existing Concrete Tank Infrastructure: *Dan Gancher, DN Tanks.* The presentation will discuss condition assessment, common rehabilitation and retrofit scopes of work on all types of concrete tanks. This includes both water and wastewater storage tanks. 0.1 CEU

(W) The Tale of Two Tanks: sometimes Its a Blast Sometimes Its Not: *Laura Farthing, EWEB.* The presentation will discuss EWEB's recent experience with construction of two 7.5-million-gallon water tanks in a developed residential neighborhood. The presentation will cover the planning, land use, public outreach, coordination with operators, construction phasing and sequencing, and lessons learned to date. 0.1 CEU

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(B) New Developments for the Humble Butterfly Valve: *Wade Esplin, Av-Tek Valves.* Teach the difference between Zero, Single, Double and Triple-Offset Butterfly Valves. Explain their history, primary functions, strengths, and weaknesses, and why you would not use one type instead of another in different applications. 0.1 CEU

(B) The Mystery of Water Samples: *Rebecca Picton, Edge Analytical Labs.* 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

(W) Understanding the Lead and Copper Rule Revisions: *Pierre Kwan, HDR.* This presentation provides a summary of all the changes in the federal Lead and Copper Rule and the steps that all drinking water utilities throughout the country, including Oregon, have to implement to maintain regulatory compliance. 0.1 CEU

(B) Combatting Security Threats to Our Critical Water/Wastewater Infrastructure: *Chass Jones, Cybersecurity and Infrastructure Security Agency.* The first hour will discuss active assailant preparedness. With all of the recent senseless shootings occurring across the country at schools, businesses, nightclubs, shopping malls, concerts, movie theaters, etc., we are all at risk. Given today's ever-changing threat environment, preparing for and training employees to cope with workplace violence should be a key piece of an organization's incident response planning. The second hour will discuss CISA and combatting other security threats. CISA is the Nation's risk advisor, working with partners to defend against today's threats and collaborating to build more secure and resilient infrastructure for the future. PSAs provide assessments which inform facility owners and operators about security vulnerabilities and gaps as well as protective measures for all threats/hazards. 0.2 CEU

(W) Leveraging GIS for Lead Pipe Tracking and Water Meter GPS Locating: *Caleb Anderson, EWEB.* Using web-based Geographic Information systems (GIS) for tracking and sharing lead pipe information and GPS equipment to capture water meter locations. 0.1 CEU

(W) iHydrant Technology: *Vaughn Barber, Kennedy/M&H Valve.* This will be a presentation on iHydrant technology for pressure and temperature monitoring. 0.1 CEU

(B) Confined Spaces and Excavation Hazards: *Christian James, Oregon OSHA.* Identify many of the hazards associated with confined spaces and excavations. 0.1 CEU

(W) Amador Water Agency Disinfection Byproduct Study: *Bryan Phinney & Dylan Carey, Keller Associates.* Amador Water Agency has experienced violations in disinfection byproducts (DBPs) in their distribution system. This presentation overviews the causes of DBP formation in water systems and recommends actionable steps to maintain regulatory standards in finished water. 0.1 CEU

(B) Shutoff and Check Valves: *Matthew McQuillan, Mueller Water Products.* An overall look into different shutoff and check valves and which application they can be used. These applications can include media, high pressure, confined spaces, and pipe sizes with each one affecting which options can be utilized. 0.1 CEU

(B) ORWARN Tabletop Exercise: *Jeremiah Hunt, EWEB.* Using the ICS structure and ORWARN resources, participants of the class will work through a scenario coordinating water distribution recovery after a massive event. This will be a very interactive class as the group will brainstorm, plan, and react to injects of the event. 0.4 CEU

SOURCE/TREATMENT

(W) Wildfire Water Quality and Infrastructure Impacts: Research Findings and Colorado Experience: *Frank Blaha, The Water Research Foundation.* This lesson will address water quality and infrastructure focused wildfire research, with an emphasis on the several projects funded by The Water Research Foundation (WRF). It will also highlight the utility experience with recent Colorado Front Range wildfires. Emphasis on practical resilience planning insights for utilities. 0.1 CEU

(W) A Multi-Barrier Drinking Water Treatment Process during a Harmful Algal Bloom: *Xue Jin, OSU.* Well controlled laboratory experiments were performed to investigate the performance of chitosan as an alternative to traditional metallic coagulants in a hybrid coagulation-ultrafiltration (UF) process for addressing multiple HABs impacts in drinking water treatment. 0.1 CEU

(B) Augmenting Operator Knowledge and Experience with AI and Analytics for Improved Decision Making: *Keaton Lesnik, Maia Analytica.* Lesson will highlight how analytics and advanced modeling techniques are used to augment decision-making in water/wastewater industry with a demonstration of new tools and approaches on how to best incorporate them into one's own decision-making process. 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

(W) Water Use and Well Level Monitoring: *Ted Ressler & DeEtta Fosbury (Summit Water Resources).* Attendees will learn about basic water level monitoring methods and best-practice procedures and receive hands-on practice making manual water level measurements. The presentation will include a discussion of record-keeping and water use reporting requirements, and the practical value of tracking water levels and use. 0.1 CEU

(W) Using Satellite Imagery and National Surveys to ID Lakes at Risk for Toxic Cyanobacteria Blooms: *Amalia Handler, EPA.* Identify lakes at risk using the Cyanobacteria Assessment Network satellite imagery and US EPA National Lakes Assessment field surveys to model the probability of large lakes exceeding lower and higher demonstration thresholds of microcystin toxin, cyanobacteria, and chlorophyll a. 0.1 CEU

(B) Safe, Non-contact Troubleshooting of Motors and Controls: *Chuck Arrera, Arrera Engineering.* Operators can significantly improve the reliability of their treatment plants and pumps stations by improving their understanding of plant electrical and control systems. Many valuable troubleshooting tasks can be completed without the specialized training of an electrician or controls specialist. When things do go wrong, the operator must decide when to call in the appropriate specialist and how to explain the problem. This one-hour presentation will focus on information that will lead to safe, non-contact troubleshooting that will prove valuable in day to day operations and shorten down time during emergencies.

Topics covered will include:

- Understanding the layout of your plant electrical system.
 - Example: Do I call the power company or an electrician?
- What visual indicators do I have to assist me in trouble shooting:

- Example : Is that LED on my VFD normally red?
- Observing operating temperatures, sounds and smells
 - Example: What is the normal operating temperature for that motor and what is too hot?
- Understanding documentation and reading drawings.
 - Example: During an emergency is not the time to decide if these are the “real” As-built drawings.

Operators will leave with significant homework assignments if they choose to learn more about the inner workings of their plant.

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(W) Using ESRI Mobile Applications for Water Quality Source Protection: *David Richey, EWEB.* This presentation will introduce attendees to the suite of ESRI mobile applications in use by EWEB as part of a collaborative group of watershed stewardship organizations, the Pure Water Partners. The applications were developed and deployed following the Holiday Farm Fire of 2020. 0.1 CEU

(W) Collaborating on Source Water Protection: *Kim Swan, Clackamas River Water Providers.* Why collaborating on source water protection efforts is valuable and can provide economies of scale and can save money by sharing implementation costs. 0.1 CEU

(W) What Can Gaseous Chemicals Tell Us About Toxic HABs?: *Kimberly Halsey, OSU.* New monitoring strategies are needed to protect the public and understand the complex factors leading to toxic HABs. Volatile organic compounds may be effective indicators of toxicity, ecosystem stress, and microbial composition. New instrumentation and data analysis tools are enabling rapid evaluation of water samples. 0.1 CEU

(W) Amity Water System Improvements Project: *Bryan Phinney & Jesse Fields, Keller Associates.* A review of the needs, problems, and solutions associated with Amity’s raw water intake, treatment plant improvements (pretreatment, new backwash ponds, finish water tank and pumps, chemical storage, and electrical), and storage reservoir circulation improvements. 0.1 CEU

(W) Source Water Protection – Evaluating Risks and Building Water System Resiliency Using Natural Infrastructure: *Julie Harvey, Oregon DEQ.* Your community’s drinking water source area is the first line of a multi-barrier defense for economically keeping your drinking water clean, reliable, and safe. Public water system officials and staff can rarely develop and implement strategic plans for pollutant reduction without detailed information on their watershed, assistance from partner organizations, and links to funding sources. In this session, we will share tools to inform community-led discussions on groundwater and surface water protection and restoration; examples of partnerships that can be transferred to other areas; and sources of funding for watersheds and groundwater source areas. Highlights will include an overview of Oregon’s Updated Source Water Assessments that provide the base data; information on how to identify and prioritize various risks within your watershed such as harmful algal blooms, land management, and emerging contaminants; how to identify partners for local collaboration; and details on funding resources available for source water protection. Through source water protection, water systems can also enhance community involvement and support and leverage many different resources to lower long-term treatment costs, build resiliency, and lower the risk to public health. 0.1 CEU

(W) WWSP, Raw Water Facility, Geotechnical and Seismic Improvements: *Jason Bock, GRI.* The Willamette Water Supply Program is a consortium of local agencies in the Tualatin Valley that aim to develop a new resilient water supply for the region. This work involves new pipelines, reservoirs, water treatment plants, and seismic retrofits/expansions to existing raw water facilities. This presentation will focus on the existing Raw Water Facility and present design efforts to retrofit and expand the facilities at the crest of the Willamette River near Wilsonville, Oregon. The presentation will focus on how the design incorporated the program’s unique level of service goals into a site-specific basis of design that met the intent of ASCE design guidelines for both retrofit and new structures, including a 56-foot diameter embedded caisson. 0.1 CEU

(W) Basics of Ozone Disinfection in Drinking Water Treatment: *Spencer Adams, Jacobs.* “Back to the Basics” style presentation on ozone disinfection including biological oxidation and basic disinfection chemistry and covering the major components of typical ozone generation systems found at drinking water plants. 0.1 CEU

(W) Planning a Full-Scale Plant Hydraulic Test at Maximum Instantaneous Capacity: *Spencer Adams, Jacobs.* Case study of planning a full-scale hydraulic test of a 150 MGD water filtration plant to validate a computer model produced for a water system master plan. Discuss how to plan the test, mitigate risk, conduct a Go/No-Go review, collect testing data, and gain the confidence of operations at maximum capacity. 0.1 CEU

(W) Steigerwald Reconnection Project: *Chris Collins, Lower Columbia Estuary Partnership.* The Steigerwald Reconnection Project is the largest restoration project ever implemented in the lower Columbia River. The presentation will provide an overview of the project, including site history, project goals, design approach, benefits, permitting, construction, and carbon emissions and sequestration. 0.1 CEU

(B) Preparing for the Big One: Integrating Earthquake Early Warning Technology into Your Infrastructure: *Kelly Missett, U of O Oregon Hazards Lab.* Lesson will explain how utilities can use ShakeAlert and identify steps to implementation, funding sources, and cybersecurity efforts. Attendees will be encouraged to participate in discussion about how ShakeAlert could benefit their system. 0.1 CEU

WATER TOURS

(W): Geren Island Water Treatment Plant Tour: *Cody Marrs, City of Salem.* Twenty-minute overview of the treatment plant then tour intake, filters, ozone, pumpstation, chemical building, and lab. 0.1 CEU

(W) City of Jefferson Water Treatment Facility Tour: *Alex Kemmer, City of Jefferson.* Review City of Jefferson Water Treatment system and processes and equipment. This facility is a Pall Membrane treatment plant with UV and chlorine for disinfection, ACH for coagulation, soda ash for pH control. 0.1 CEU

Back-up Classes (In the event of a cancelation we would like to offer the below as back-up classes)

(W) Water Operators Roundtable: *Mark McGuire & Lisa Erkert, EWEB.* Interactive course to have water operators discuss technologies, equipment, 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) City of Aumsville Wastewater Treatment Plant Tour: *Matthew Etzel, City of Aumsville.* Tour of City of Aumsville Wastewater Treatment Plant. Describe treatment flow and process of a lagoon and reuse site. 0.1 CEU (Back-up for City of Salem’s Willow Lake Pollution Control Facility if inclement weather)

