ORWEF
Oregon Water Education Foundation

Clackamas Community College

WATER ENVIRONMENT SCHOOL PROGRAM

© Photo By Tim Kunene, Clackamas Water Environment Services.

2025

PROGRAM COVER PHOTO CONTEST

Want to see *your* photo on next year's conference program cover? You could be the next featured photographer and have your beautiful shot grace our 2026 program cover!

WHEN TO VOTE: Thursday During Lunch
On-site voting only!
Stop by the photo display near the registration table to cast your vote.

HOW TO ENTER:

Step 1: Submit Your Photo(s)

Email your photo to: orwef.mnm@gmail.com
Include:

- Your name
- The category you're entering
- Your contact info
- Include a short 1-2 sentence story of the photo or subject (optional)

Deadline:
***Before* Thursday Lunch (12:25 PM,6/26/25)**

Step 2: Vote in Person

Photos will be posted by lunchtime Thursday come to the display near the registration area and vote before lunch ends!
Yes, you can vote for yourself 😉

Step 3: Win Big!

🏆 **1st – 3rd place winners will:**

- **Be announced at Thursday's last break**
- **Be featured on our website**
- **Appear in next year's printed program!**

Categories:

1. **The Cover Shot** - Stunning, scenic, or dramatic worksite photos
2. **Work Wildlife** - Nature meets wastewater (rats, geese, raccoons!)
3. **Best of the Worst** - Gnarly clogs, wipe balls, crazy fixes
4. **Anything Awesome** - Cool moments, team photos, or "just wow" shots

The Fine Print:

- **You don't have to be present to win**
- **You can submit in multiple categories**
- **By entering, you agree that ORWEF can use your photo in future materials**
- **No legal-case photos or location info.**

WELCOME INSTRUCTIONS

We are glad you are here and ready to learn. Now, let's get you going to earn some CEUs!

CEU AWARD TRACKING SHEET (In-Person Only)

In this packet, you will see your award sheet. After each instruction session, you will receive a stamp for your attendance. Please keep track of this Award Sheet.

This sheet will be proof of your in-person participation to be eligible to receive CEUs.

After your last session with us, you will need to turn in this sheet to the registration desk (where you got this packet!).

VENDOR FAIR & OUR SPONSORS

We are so grateful to our event partners and vendors! Please make sure to visit their tables Wednesday during lunch! Pick up a bingo card, collect stamps and enter our Bingo raffle for a bucket of awesome prizes! Must be in person to participate. Come to the registration table for more information.

CORE & MAIN ®

PumpTech an impel company

Granich A BECKWITH & KUFFEL COMPANY

REINER 25 Years PUMP SYSTEMS

Owens Pump & Equipment

chiroone wellness centers

CleanWater Services

Our 2025 Vendor Event Also Features...

Twisty Brit

Love our sewer-shaped balloon creations? So do we!
This year's Vendor Event features the talented balloon artist,

Britany Leigh, "Twisty Brit".

For events, parties, or community gatherings, feel free to contact her at ardicca92@gmail.com , her custom themes are great!

SCHEDULE AT A GLANCE

DAY ONE: TUESDAY, JUNE 24, 2025 **Virtual Only**

7:00 - 8:00 a.m.	Registration
8:00 - 9:00 a.m.	Keynote
9:10 - 12:30 p.m.	Sessions
12:30 - 1:00 p.m.	Lunch *(On your own)*
1:00 - 4:30 p.m.	Sessions

DAY TWO: WEDNESDAY JUNE 25, 2025 **Virtual or In-Person**

7:00 - 8:00 a.m.	Registration
8:00 - 9:00 a.m.	Keynote
9:10 - 12:30 p.m.	Sessions
12:30 - 1:30 p.m.	Lunch & Vendor Event *(Catering is available for In-Person only)*
1:30 - 5:00 p.m.	Sessions

DAY THREE: THURSDAY JUNE 26, 2025 **Virtual or In-Person**

7:00 - 8:00 a.m.	Registration
8:00 - 9:00 a.m.	Keynote
9:10 - 12:30 p.m.	Sessions
12:30 - 1:30 p.m.	Lunch *(Catering is available for In-Person only)*
1:30 - 5:00 p.m.	Sessions
5:00 - 6:00 p.m.	Certificates will begin routing out via e-mail (Please give our system until Friday at Noon to process your certificate. See Page 34 for details)

OUR TEAM

These are the volunteer industry members who have helped make this school possible.

THE ORWEF BOARD

President Molly Nause-McCord
Vice President Victoria Mendez
Secretary Kasie Auger
Treasurer Matt Zak
Member-At-Large Brent Carrar
Vendor and Sponsorship Organizer Mike Hawkins

CCC FACULTY TEAM

CCC Facilitator Matthew LaForce
CCC Administrative Assistant Amber Steele
CCC Events Support & Zoom / Technical Lead Greg Castaneda
CCC Student Leader Donavon McMartin

ORWEF COMMITTEE MEMBERS

Erin Duffy
Stephanie Kerns
Monica Stone
Hunter Bennett-Daggett
Lisa Hillyard
Hannah Smiley
Charissa Rogers

If you are interested in joining the ORWEF planning committee please contact President, Molly Nause-McCord at:
ORWEF.MNM@gmail.com

ABOUT US

ORWEF is a not-for-profit, volunteer-run organization that supports Oregon's wastewater professionals through education and community. We organize the annual **Water Environment School (WES)**—An OESAC-approved event that provides continuing education units (CEUs) for operators and OSBEELS qualifying credits for engineers.

Join the ORWEF Committee

What We Do

- Plan and host the **Water Environment School (WES)** each June at CCC
- Recruit speakers and vendors
- Prepare welcome packets and event materials
- Coordinate logistics and communications

Meeting Info

- **When:** First Thursday of each month (more frequent near WES event)
- **Where:** Clackamas Community College, Oregon City, OR
- **Time:** 2 hours (lunch included!)
- **Zoom Option:** Available!!! (lunch not included)

Why Join?

- **Free lunch** at meetings
- **Free WES attendance** + CEUs when you help plan and run the event
- **Network & grow** your skills and resume
- **Be part of a fun, collaborative team**

What We Ask

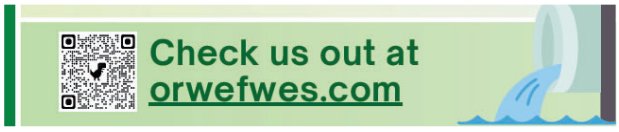
- Bring a positive, team-first attitude
- Commit to regular meetings and on site attendance the week of WES in June
- Serve for one school year before joining the board

Why We Do It

ORWEF was established 49 years ago to provide support to the education of the wastewater operators professional community. **But** also, to give back and encourage our industry to grow. Our partnership with **CCC isn't a coincidence**: The profits from our short school go entirely to **multiple CCC Scholarship Foundations** that award to CCC students in their WET program. As well as **local non-profits** who support wastewater community goals. We work to not only provide education for our current industry, but also to support future operators, field engineers, and grow our industry.

Ready to Join?

Contact our president, Molly, at orwef.mnm@gmail.com.



Thank you, Speakers!

THE 2025 WES SPEAKERS

Marion Barnes
Mario Benisch
Mark Bentz
Noah Braukman
Kenneth Cannady-Shultz
Stefan Chabane
Chris Desiderati
Frank Dick
Leslie Dietz
Brittany Downing
Mike Eastman
Elena Estrada
Brandon Falk
Jesse Fields
Zach Foster
Jonathan Gordon
Kimi Grzyb
Jeff Hart
Mike Hawkins
Jill Hoyenga
Heather Jennings
Sundeep Kaur
Halley Keating
Stephanie Kerns
Patrick Leach
Kiersten Lee
Rob Livingston
Allison Lukens
Chris Maher
Lesley Martinez
Amelia McElhinney
Alden Meade
David Mickle
Ruby Mohammadi
Rich Owens
Nishant Parulekar
Daryl Payne
Mark Poling
Siara Prpich
Blake Raines
Jessica Rinner
Terrance Romaine
Dustin Ross
John Rydzewski
Gail Shaloum
Ornella Sosa-Hernandez
Hannah Thomascall
Thanh Tran
Tam Truong
Patrick Vandenberg
Tyler Weber
Kevin Wegner
Rob Whitson
Bryen Woo
Wendy Woothtakewahbitty

2025 PROGRAM SCHEDULE

DAY ONE: TUESDAY, JUNE 24, 2025

	7:00 am	**Zoom opens, tech checks, change your names.**		
	7:30 am	**ORWEF + CCC Welcome and Introductions: Housekeeping, What to Expect, Certification Process, and More**		
1	8:00-9:00 am	**KEYNOTE: Solids Renewal Updates from Denmark and Beyond** Frank Dick *City of Vancouver, Washington*		
		TRACK A: COLLECTION SYSTEMS	**TRACK B: WASTEWATER OPERATIONS**	**TRACK C: SOURCE CONTROL**
2	9:10-10:10 am	**How Smart is that Pig?** Jessica Rinner *Clackamas WES*	**How to use the DEQ Website and Operator Certification Basics** Kimi Grzyb *DEQ*	**Burn, Bury...or Beneficial? Vancouver's Journey to Solids Resource Recovery** Frank Dick *City of Vancouver, Washington*
3	10:20-11:20 am	**Mitigating Risks in Urban Storm and Sewer System Upgrades: A Case Study in Hydraulic Resilience** Patrick Vandenberg and Ruby Mohammadi *WSP*	**Waste Water Membrane Bio-Reactors Basics** Blake Raines *Clackamas Water Environment Services*	**Climate Impacts in Resource Recovery** Terrance Romaine *Clackamas Water Environment Services*
4	11:30-12:30 pm	**Finding and Keeping Great Wastewater Operators** Siara Prpich *University of Idaho*	**Introduction to Excel for Wastewater Operations: Using Simple Functions for Complex Math** Mike Hawkins *Clackamas Water Envronment Services*	**PFAS: Everything, Everywhere All at Once** Terrance Romaine *Clackamas Water Environment Services*
		LUNCH 12:30 - 1:00 PM		
5	1:00-2:00 pm	**Building and Maintaining Effective Workplace Relationships** Mark Poling and Hannah Thomascall *Clean Water Management; Spokane County*	**A Breath of Fresh Air – Understanding the Importance of Diffused Aeration Systems** Bryen Woo *Aquarius Technolgies*	**Laboratory Testing for Wastewater Treatment** Patrick Leach *Clackamas Water Environment Services, Water Quality Laboratory*
6	2:10-3:10 pm	**Frankenstein Chaos Creations – Commissioning & Operational Lessons Learned from Modifying "Standard" Vendor Equipment Package Systems** Kiersten Lee *MWH Constructors*	**I Scream, You Scream, We All Scream for PFAS** Heather Jennings *Huma Environmental*	**Small Community, Large Brewery: A Case Study of a Regulation** Stephanie Kerns *City of Newport, OR*
7	3:20-4:20 pm	**Ultrapure Water Recycling: Building Critical Wastewater Resilience in the Semiconductor Industry** John Rydzewski *Carollo Engineers*	**Safeguarding the Workforce: Preventing Serious Injuries in Wastewater Operations** Elena Estrada *Clackamas Water Environment Services*	**Strengthening Partnerships with Local Industries through a Co-digestion Program** Ornella Sosa-Hernandez and Kevin Wegener *Clean Water Services*

TRACK DESCRIPTIONS

- **COLLECTION SYSTEMS**: Operations & Maintenance, Safety, Asset Management
- **WASTEWATER OPERATIONS**: Basics & Beyond, Safety, Asset Management/ Technology/ Activated Sludge
- **SOURCE CONTROL/POLLUTION PREVENTION**: Industrial Pretreatment, Stormwater, Reuse & Biosolids

DAY TWO: WEDNESDAY, JUNE 25, 2025

	7:00 am	Zoom Opens (online attendees) and Registration Desk Opens (on site / in person attendees)		
	7:30 am	AT KEYNOTE LOCATION: ORWEF + CCC Welcome and Introductions: Housekeeping, What to Expect, Certification Process, and More		
8	8:00-9:00 am	KEYNOTE: **Proper Workplace Interactions in the Wastewater Field** Marion Barnes *City of Eugene*		
		TRACK A: COLLECTION SYSTEMS	**TRACK B: WASTEWATER OPERATIONS**	**TRACK C: SOURCE CONTROL**
9	9:10-10:10 am	**Real Time Equipment Monitoring and Condition Assessment** Brittany Downing and Thanh Tran *City of Portland, BES*	**Operating a Facility Under Construction, City of Portland's Headworks Story** Daryl Payne and Sundeep Kaur *City of Portland, Bureau of Environmental Services*	**Pre-Treatment 101** Chris Desiderati *Clackamas Water Environment Services*
10	10:20-11:20 am	**From Reactionary to Resilient: Smart Pump Station Management with Digital Twins** Rob Whitson *Aquasight*	**Water Reuse Alternatives Analysis for Columbia Blvd WWTP** Jesse Fields; Lesley Martinez; Stefan Chabane *Tetra Tech and the Portland Bureau of Environmental Services*	**Enforcement Response Plans** Chris Desiderati *Clackamas Water Environment Services*
11	11:30-12:30 pm	**Odor Control Basics** Tam Truong *USP Technologies*	**Smelly Situations: Selecting Odor Control Systems for Wastewater Facilities** Amelia McElhinney *Kennedy Jenks*	**Protecting Amphibians with Pipe Ramming Technology** Brandon Falk *Consor*
		LUNCH 12:30 - 1:30 PM		
12	1:30-2:30 pm	**Force Main Locating** Noah Braukman Clean Water Services	**Doing You a Solid: Aerobic Digestion and Recuperative Thickening** Allison Lukens and Amelia McElhinney *Kennedy Jenks*	**Environmental Engineering in Action at a Water Resource Recovery Facility (WRRF), Session Part 1 of 3** Chris Maher *Clean Water Services*
13	2:40-3:40 pm	**Wastewater Sludge Pumping** Rich Owens *Owens Pump & Equipment*	**Fernhill Wetlands Natural Treatment System** Jeff Hart *Clean Water Services*	**Environmental Engineering in Action at a Water Resource Recovery Facility (WRRF), Session Part 2 of 3** Chris Maher *Clean Water Services*
14	3:50-4:50 pm	**Seismic Resilience** Nishant Parulekar *City of Portland, Environmental Services*	**Factors Impacting Dewatering** Mario Benisch *HDR*	**Environmental Engineering in Action at a Water Resource Recovery Facility (WRRF), Session Part 3 of 3** Chris Maher *Clean Water Services*

DAY THREE: THURSDAY, JUNE 26, 2025

	7:00 am	**Zoom Opens (online attendees) and Registration Desk Opens (on site / in person attendees)**		
	7:30 am	**AT KEYNOTE LOCATION: ORWEF + CCC Welcome and Introductions: Housekeeping, What to Expect, Certification Process, and More**		
15	8:00-9:00 am	**KEYNOTE: From Field Sampling to Community Impact: Tracking Viruses in Wastewater** Wendy Woothtakewahbitty, Leslie Dietz, and David Mickle *Oregon State University*		
		TRACK A: COLLECTION SYSTEMS	**TRACK B: WASTEWATER OPERATIONS**	**TRACK C: SOURCE CONTROL**
16	9:10-10:10 am	**Work Zone Traffic Control Safety (4 hours, Hour 1 of 4)** Mike Eastman *ODOT Technology Transfer Center*	**Streamlining Compliance: Mastering Water Quality Permitting via YDO** Mark Bentz *DEQ*	**Brewing Responsibly: Navigating Brewery Wastewater Regulations** Zach Foster *City of Eugene*
17	10:20-11:20 am	**Work Zone Traffic Control Safety (4 hours, Hour 2 of 4)** Mike Eastman *ODOT Technology Transfer Center*	**Reducing Operating Costs with Energy Efficiency** Tyler Weber *AESC, Inc*	**Creating and implementing a pro-active Industrial/Commercial Stormwater Inspection program from scratch** Rob Livingston *Clackamas Water Environment Services*
18	11:30-12:30 pm	**Work Zone Traffic Control Safety (4 hours, Hour 3 of 4)** Mike Eastman *ODOT Technology Transfer Center*	**Optimize WWTP Mixing for Efficiency & Process Resiliency** Alden Meade *Xylem Inc*	**Surface Water Management at WES: Preventing Non-Point Source Wastewater Pollution** Gail Shaloum *Clackamas Water Environment Services*
		LUNCH 12:30 - 1:30 PM		
19	1:30-2:30 pm	**Work Zone Traffic Control Safety (4 hours, Hour 4 of 4)** Mike Eastman *ODOT Technology Transfer Center*	**Odor Control in the Context of Odor Impact** Jonathan Gordon *Parametrix*	**Oregon Association of Clean Water Agencies Model FOG Ordinance Updates** Jill Hoyenga *Regulatory Compliance Manager*
20	2:40-3:40 pm	**Roadside Emergencies & Hazard Awareness** Dustin Ross *Oregon Department of Transportation*	**Wastewater Lagoons Workshop: Ammonia Removal and Other Common Lagoon Issues** Mike Hawkins *Clackamas Water Environment Sevices*	**Collaborative FOG Enforcement** Jill Hoyenga *Regulatory Compliance Manager*
21	3:50-4:50 pm	**Oregon City Private Lateral Rehabilitation Program - Challenges and Solutions** Kenneth Cannady-Shultz *City of Oregon City*	**New Technologies for Nutrient Removal** Halley Keating *World Water Works*	**Update on Mobile Food Units – Mouthwatering or Miasma** Jill Hoyenga *Regulatory Compliance Manager*

SESSION DESCRIPTIONS TRACK A: COLLECTION SYSTEMS

DAY ONE: TUESDAY, JUNE 24, 2025 | Collection Systems: Session Descriptions		
	7:00 am	**Zoom opens, tech checks, change your names.**
	7:30 am	**Welcome and introductions** **Housekeeping, What to Expect, Certification Process, and more.**
1	8:00-9:00 am	**Solids Renewal Updates from Denmark and Beyond** Frank Dick *City of Vancouver, Washington* Frank Dick visited Denmark where he spoke with industry professionals about solids renewal projects and the circular economy. These are the highlights he brought back. Frank is a Chemical Engineer who has been in the industry for over 17 years. He is currently the manager of the wastewater treatment engineering program at City of Vancouver, Washington.
2	9:10-10:10 am	**How Smart is that Pig?** Jessica Rinner *Clackamas WES* The Bolton Force Main is over a mile long and crosses under the Willamette River. There have been 3 breaks in this force main in the past 7 years, making us wonder, "What condition is this pipe in?" This presentation will focus on the logistics of pigging the force main, the results of the smart pig inspection, and how the results and data gathered by the smart pig will be used to design the rehabilitation/replacement of the force main. Jessica is a Supervising Engineer and project manager with over 30 years of experience planning, designing, and rehabilitating wastewater infrastructure and pump stations. Throughout her career, she has had the opportunity to work on wastewater collection systems in Cambridge and Boston, Massachusetts; New Orleans and Baton Rouge, Louisiana; and across the United Kingdom. She is currently serving as a project manager for Clackamas Water Environment Services.
3	10:20-11:20 am	**Mitigating Risks in Urban Storm and Sewer System Upgrades: A Case Study in Hydraulic Resilience** Patrick Vandenberg and Ruby Mohammadi *WSP* Upgrading existing storm and sewer systems to provide resilient infrastructure poses risks and challenges that owners must overcome to safeguard public health and safety. The risks associated with construction of underground infrastructure are magnified by congested urban environments, steep topography and challenging geotechnical conditions. A case study will be presented for replacement of an aging critical sewer trunk that crosses beneath a major interstate highway, focusing on the risks associated with system hydraulics. The project utilized the Construction Manager/General Contractor (CM/GC) delivery method and due to the major highway crossing trenchless construction was required. The design team collaborated with the CM/GC to evaluate multiple trenchless storm and sewer installation methodologies against a variety of criteria including constructability, cost, public impacts, and resiliency. Patrick Vandenberg, PE is a Lead Water Resources Engineer with 7.5 years of experience as a hydrologic and hydraulic (H&H) modeler in King County, WA and over 10 years total of experience as a civil engineer. He worked on dozens of drainage and wastewater modeling projects as a Senior Civil Engineer at Seattle Public Utilities and as a Wastewater Engineer at King County Wastewater Treatment Division, including the Ship Canal Water Quality Project.
4	11:30-12:30 pm	**Finding and Keeping Great Wastewater Operators** Siara Prpich *University of Idaho* Recruiting and keeping skilled wastewater operators is a growing challenge. With a generation of retiring experienced workers, utilities need new strategies to attract and retain talent. This presentation will cover practical ways to recruit new operators, including outreach to schools, apprenticeships, and competitive benefits. It will also explore how to create a positive work environment that encourages employees to stay. Attendees will gain simple, effective ideas to strengthen their workforce and ensure long-term success. Siara is a student at the University of Idaho, studying Environment Science. While attending school, Siara worked for the City of Moscow for 2 years as a water treatment operator. Siara was a member of the 2023 cohort of PNCWA's WAVE leadership development program.
LUNCH 12:30 - 1:00 PM		

5	1:00-2:00 pm	**Building and Maintaining Effective Workplace Relationships** Mark Poling and Hannah Thomascall *Clean Water Management; Spokane County* Pulling from sources including The Five Dysfunctions of a Team, Radical Candor, and The Fearless Organization, this talk will outline some simple, implementable ways to strengthen your team and make work a more positive experience for everyone. While supervisors will find many of these ideas and concepts useful in building their team, anyone can employ them to strengthen your individual workplace relationships and create a better, more cohesive work life. Mark Poling is an independent consultant and sole proprietor of Clean Water Management, a consulting firm focusing on utility management. He is a member of the Water Environment Federation WISE Utility Management program team focused on helping utilities provide increased value through business process improvement. He has nearly 40 years of experience at Clean Water Utilities including utility management, water resource recovery facility operation, maintenance, design, and construction. Hannah Thomascall works at the Spokane County Regional Water Reclamation Facility managing the treatment plant. In addition to her work in wastewater, she has experience in regulatory compliance and environmental consulting. Hannah is the current chair of the PNCWA Sustainability and Biosolids Committee, serves on the PNCWA board, and is an active member of six other PNCWA Committees.
6	2:10-3:10 pm	**Frankenstein Chaos Creations - Commissioning & Operational Lessons Learned from Modifying "Standard" Vendor Equipment Package Systems** Kiersten Lee *MWH Constructors* The purpose of this presentation is to share lessons learned from modifying a vendor equipment package to meet specification… and the chaos that ensues. It starts innocently enough, during the design an engineer, owner or operator suggests adding a switch here, or an interlock there, not understanding these small "improvements" could result in major modifications for the respective vendor equipment package. How does this happen? This presentation will provide a series of case studies, where MWH served as the general contractor and the Commissioning Manager. Each case study will capture a vendor package "standard" that was modified to meet specifications and resulted in significant commissioning and operational challenges post installation. The purpose of this presentation is to share lessons learned, help all project stakeholders better understand when a system modification brings value or may result in chaos and the questions we should be asking during the submittal process. Kiersten manages MWH Constructors commissioning and start-up group, which includes process mechanical, I&C integration, electrical and treatment process specialists. Kiersten has a Masters of Engineering, specializing in hydraulics and water/wastewater treatment.
7	3:20-4:20 pm	**Ultrapure Water Recycling: Building Critical Wastewater Resilience in the Semiconductor Industry** John Rydzewski *Carollo Engineers* Semiconductor manufacturing is a national security issue. However, not a single computer chip could be fabricated without water. Pound for pound, water is the most significant ingredient in the production of computer chips, withdrawing upwards of five to ten million gallons per day of city water for a typical chip fab. Water conservation focuses on segregation and reuse of final quality rinses. However as chip manufacturing process technologies transition the amount of easily reclaimable water has dropped significantly. Also, as fab sizes and wafer throughput increase, the volume of reclaimable water has not kept pace with freshwater demands, putting stress on the environment and municipal water supply and wastewater treatment infrastructure. This presentation will provide an overview of EOP/ZLD coupled with UPW recycling; the inherent benefits, challenges, risks, and perceived risks of this approach to water resilience; and why this approach should be the default path to net positive water. John Rydzewski is Vice President and Private Sector Sustainability/Resilience Lead for Carollo Engineers. He has 30 years of experience with the design, construction, and operations of water and wastewater treatment systems for the semiconductor and textile industries. In addition to high tech, John spent seven years as the Director of Water Programs at Nike World Headquarters where he built and led Nike's global water sustainability team that set corporate policy and achieved public sustainability commitments. John received his B.S. and M.S. degrees in Chemical Engineering from Clarkson University and is a licensed professional engineer.

DAY TWO: WEDNESDAY, JUNE 25, 2025 | Collection Systems: Session Descriptions		
	7:00 am	**Zoom opens, tech checks, change your names.**
	7:30 am	**Welcome and introductions** **Housekeeping, What to Expect, Certification Process, and more.**
8	8:00-9:00 am	**Proper Workplace Interactions in the Wastewater Field** Marion Barnes *City of Eugene* Most of the time, wastewater crews doing infrastructure construction or maintenance are focused solely on getting the job done well and on time. They don't have the time or interest in talking to members of the public, members of the media, or, sometimes, even other people in their department. It's understandable. But there are many instances in which work crews and leads can find themselves in the spotlight, so it's best to be prepared. Learn how to get used to attention–from media, from the public and from coworkers–and use it to your advantage! Marion Suitor Barnes is public affairs manager for City of Eugene Public Works, the city's largest department. Before representing Public Works, she was director of communications for the Oregon Department of Early Learning and Care and for Western Oregon University. Deep down, she's a journalist at heart, having spent 20+ years as a writer and editor for newspapers throughout the Pacific Northwest.
9	9:10-10:10 am	**Real Time Equipment Monitoring and Condition Assessment** Brittany Downing and Thanh Tran *City of Portland, BES* Join the City of Portland's Bureau of Environmental Services (BES) Condition Assessment Team for a hands-on demonstration of equipment monitoring in the context of condition assessment. This interactive session will showcase the latest tools and technologies used to monitor infrastructure and assess the condition of wastewater systems. Participants will have the opportunity to engage with the equipment directly, gaining a deeper understanding of how monitoring tools help identify potential issues and improve system maintenance while ensuring the longevity and reliability of wastewater infrastructure. Brittany Downing – Brittany Downing is a Senior Engineering Associate – Mechanical with the City of Portland, where she has been a key contributor to the Condition Assessment Program for the past seven years. She holds a B.S. in Mechanical Engineering from Oregon State University and brings a strong background in equipment diagnostics and reliability. Her work focuses on evaluating mechanical systems to enhance performance and ensure long-term infrastructure sustainability. Thanh Tran - Thanh Tran is a Coordinator II with extensive experience in mechanical systems and condition assessment. He spent 10 years as a Plant Mechanical Millwright, where he developed a deep understanding of equipment maintenance and repair. For the past eight years, Thanh has served as a coordinator with the Condition Assessment Program, focusing on the evaluation and reliability of critical infrastructure.
10	10:20-11:20 am	**From Reactionary to Resilient: Smart Pump Station Management with Digital Twins** Rob Whitson *Aquasight* Wastewater utilities are embracing pump station digital twins to move beyond reactive responses and routine inspections. This session will review how real-time and historical data from pump stations are being harnessed to drive smarter operations. From pump efficiency baselining to CIP project prioritization and emergency readiness, learn how leading utilities are replacing static practices with dynamic, data-driven planning and decision-making. Rob Whitson is Aquasight's Director of Operations, US West Region. He leads a team that deploys purpose-built software solutions that integrate existing data from across the water cycle, complement existing workflows, and drive efficiency across multiple utility divisions. Rob has nearly two decades in the wastewater, water, and waterpower sectors with experience working with government, industry, and others to drive adoption of new water and wastewater technologies, and design and implement water quality compliance programs that benefit rate payers and the environment.
11	11:30-12:30 pm	**Odor Control Basics** Tam Truong *USP Technologies* Wastewater collection systems are complex structures with dynamic hydraulics. Consequently, more than one control mechanism is often at work, and several factors should be considered in designing a cost-effective control program. Tam Truong is the Pacific Northwest Territory Manager for USP Technologies. USP Technologies is a leading provider of full-service chemical treatment programs for municipal and industrial wastewater treatment applications. Serving the market for over 25 years with our consultative approach, our objective is to deliver sustainable and efficient program results that meet the highest standards of environmental stewardship.

LUNCH 12:30 - 1:30 PM		
12	1:30-2:30 pm	**Force Main Locating** Noah Braukman *Clean Water Services* Clean Water Services is responsibile for locating their own pressure pipes (sewer and reuse). Noah will present on multiple tips and tricks for locating your pipes including design standards and field equipment. Noah Braukman is the Pump Station Supervisor for Clean Water Services. Noah has 15 years of experience in pump stations and 8 years of experience in pipe locating.
13	2:40-3:40 pm	**Wastewater Sludge Pumping** Rich Owens *Owens Pump & Equipment* Many types of sludge are found in a wastewater system, so why are there so many different pumps? Some do the same application, but why? We will explain why you would want to use specific types of pumps for each specific application and provide the benefits and solutions for each. Rich Owens has been in the pump business for 25+ years, working for distributors and manufacturers.
14	3:50-4:50 pm	**Seismic Resilience** Nishant Parulekar *City of Portland, Environmental Services* Overview of seismic vulnerabilities and resilient strategies for wastewater infrastructure. Nishant Pallikar Parulekar is a licensed Professional Civil Engineer with technical experience in planning and design of water, wastewater, and recycled water projects for municipal clients. His recent areas of focus are on asset management and planning for resilient infrastructure.

DAY THREE: THURSDAY, JUNE 26, 2025 | Collection Systems: Session Descriptions		
	7:00 am	**Zoom opens, tech checks, change your names.**
	7:30 am	**Welcome and introductions** **Housekeeping, What to Expect, Certification Process, and more.**
15	8:00-9:00 am	**From Field Sampling to Community Impact: Tracking Viruses in Wastewater** Wendy Woothtakewahbitty, Leslie Dietz, and David Mickle *Oregon State University* Wastewater surveillance begins and ends with community. Wastewater sampling provides a powerful tool for detecting viruses and monitoring public health trends. This talk will cover how field sampling locations are chosen and the techniques used to collect and process wastewater samples. We will address frequently asked questions about wastewater surveillance and discuss use of the data as well as the molecular approaches employed for viral detection. Leslie Dietz is a Faculty Research Assistant with a strong foundation in microbiology, molecular biology, and field-based environmental research, with over two decades of experience in both laboratory and field settings dating back to 2001. She leads the strategic development of field sampling sites, supervises field operations, and collaborates closely with healthcare facilities, universities, and students. Her work centers on wastewater-based pathogen surveillance, molecular assay development, and the detection of multi-drug resistant organisms. Wendy Woothtakewahbitty is a microbiologist and project manager in the Oregon Wastewater Surveillance Program at Oregon State University. She conducts outreach with utilities and local public health and manages an environmental engineering laboratory with undergraduate student employees David Mickle is a molecular biologist in wastewater-based epidemiology at Oregon State University, specializing in assay development and process optimization using digital PCR (dPCR) technologies. He generates and analyzes wastewater data, reporting findings to the Oregon Health Authority to support public health surveillance.
16	9:10-10:10 am	**Work Zone Traffic Control Safety** (4 hours, Hour 1 of 4) Mike Eastman *ODOT Technology Transfer Center* This hour is part 1 of a 4 part series: This certification class can only be completed in person. It will cover state regulations and minimum requirements for setting short term flagging operations on state and city right of way. We will cover flagger procedures and minimum requirements for setting up and working on county and city roads. At the end of a this 4-hour session the student will take the state exam and will be issued a state of Oregon flagger certification good for 3 years. Michael Eastman is an experienced Trainer with a demonstrated history of working in the traffic control industry. He has 44 years of experience in public works, including municipal traffic sign manufacture and installation, work zone traffic control, flagging, training, and nine years as manager of a small general aviation airport.
17	10:20-11:20 am	**Work Zone Traffic Control Safety** (4 hours, Hour 2 of 4) Mike Eastman *ODOT Technology Transfer Center* This hour is part 2 of a 4 part series: This certification class can only be completed in person. It will cover state regulations and minimum requirements for setting short term flagging operations on state and city right of way. We will cover flagger procedures and minimum requirements for setting up and working on county and city roads. At the end of a this 4-hour session the student will take the state exam and will be issued a state of Oregon flagger certification good for 3 years. Michael Eastman is an experienced Trainer with a demonstrated history of working in the traffic control industry. He has 44 years of experience in public works, including municipal traffic sign manufacture and installation, work zone traffic control, flagging, training, and nine years as manager of a small general aviation airport.
18	11:30-12:30 pm	**Work Zone Traffic Control Safety** (4 hours, Hour 3 of 4) Mike Eastman *ODOT Technology Transfer Center* This hour is part 3 of a 4 part series: This certification class can only be completed in person. It will cover state regulations and minimum requirements for setting short term flagging operations on state and city right of way. We will cover flagger procedures and minimum requirements for setting up and working on county and city roads. At the end of a this 4-hour session the student will take the state exam and will be issued a state of Oregon flagger certification good for 3 years. Michael Eastman is an experienced Trainer with a demonstrated history of working in the traffic control industry. He has 44 years of experience in public works, including municipal traffic sign manufacture and installation, work zone traffic control, flagging, training, and nine years as manager of a small general aviation airport.

LUNCH 12:30 - 1:30 PM		
19	1:30-2:30 pm	**Work Zone Traffic Control Safety** (4 hours, Hour 4 of 4) Mike Eastman *ODOT Technology Transfer Center* This hour is part 4 of a 4 part series: This certification class can only be completed in person. It will cover state regulations and minimum requirements for setting short term flagging operations on state and city right of way. We will cover flagger procedures and minimum requirements for setting up and working on county and city roads. At the end of a this 4-hour session the student will take the state exam and will be issued a state of Oregon flagger certification good for 3 years. Michael Eastman is an experienced Trainer with a demonstrated history of working in the traffic control industry. He has 44 years of experience in public works, including municipal traffic sign manufacture and installation, work zone traffic control, flagging, training, and nine years as manager of a small general aviation airport.
20	2:40-3:40 pm	**Roadside Emergencies & Hazard Awareness** Dustin Ross *Oregon Department of Transportation* Public Workers are on the roads all day, it's just a matter of time before you could be first on scene with one of these hazards, will you know what to do? This session will cover the many unexpected hazards you could come across while working on our roadways; motor vehicle crashes, Haz-mat spills, suspicious persons, crime scenes, etc. Dustin Ross is a training specialist for ODOT.
21	3:50-4:50 pm	**Oregon City Private Lateral Rehabilitation Program - Challenges and Solutions** Kenneth Cannady-Shultz *City of Oregon City* The Oregon City Inflow and Infiltration (I&I) Program needs to reduce I&I in problem areas by 65% via sewer mainline and lateral rehabilitation. The City has a mixture of materials and conditions that challenge traditional designs and construction techniques and they partnered with Wallis Engineering to envision a comprehensive program. Private lateral rehabilitation is key to meeting program goals while posing its own challenges. We will discuss the implementation of a lateral rehabilitation program in one of Oregon's oldest cities using finely tuned specifications, trenchless technologies, and public outreach to facilitate construction and reach program goals. Kenny Cannady-Shultz is a P.E. with a master's degree from Oregon State University in Civil Engineering with a focus on hydrology. His experience includes academic advising in civil engineering programs, work with Oregon Department of Transportation, and consulting work with JBR prior to his position with Oregon City Public Works Department as a project engineer focused on sewer system capital improvement projects. He has been leading the Oregon City Inflow and Infiltration project for almost 3 years. He and his family reside in Salem, Oregon.

SESSION DESCRIPTIONS TRACK B: WASTEWATER OPERATIONS

DAY ONE: TUESDAY, JUNE 24, 2025 | Track B: Wastewater Operations		
	7:00 am	**Zoom opens, tech checks, change your names.**
	7:30 am	**Welcome and introductions** **Housekeeping, What to Expect, Certification Process, and more.**
1	8:00-9:00 am	**Solids Renewal Updates from Denmark and Beyond** Frank Dick *City of Vancouver, Washington* Frank Dick visited Denmark where he spoke with industry professionals about solids renewal projects and the circular economy. These are the highlights he brought back. Frank is a Chemical Engineer who has been in the industry for over 17 years. He is currently the manager of the wastewater treatment engineering program at City of Vancouver, Washington.
2	9:10-10:10 am	**How to use the DEQ Website and Operator Certification Basics** Kimi Grzyb *DEQ* This session will go through the application and certification process for wastewater operators on the DEQ website, which is required to obtain and maintain your certifications. This talk will include tips to avoid mistakes, an overview of where to find the information you need on DEQ's website, and an opportunity for constructive program and website feedback thanks to our DEQ representative presenting. Don't forget, you'll likely need to renew after this short school! Don't miss out on the opportunity to learn how or get your website refresher before you send those CEUs in! Kimi is the Coordinator of the DEQ's OpCert Program. She has a PhD in Environmental Science, a Masters in Applied Biotechnology/Molecular Biology, and a Bachelors in Biology.
3	10:20-11:20 am	**Waste Water Membrane Bio-Reactors Basics** Blake Raines *Clackamas Water Environment Services* This presentation will explain the basics of wastewater membrane bio-reactors. We will go over what they are made of, how they function, and important plant design ideas to keep in mind. It will also include a look back at the lessons learned from the presenter's own career, the challenges and benefits of operating a wastewater MBR plant. Blake Raines is a Wastewater Operator for Clackamas Water Environment Services and has worked in the wastewater operations industry for over 17 years. His operators career started after doing a job shadow program in high school at the Tri-City Water Resource Recovery Facility in Oregon City.
4	11:30-12:30 pm	**Wastewater Lagoons Workshop: Ammonia Removal and Other Common Lagoon Issues** Mike Hawkins *Clackamas Water Envronment Services* This presentation will focus on building spreadsheets and using simple excel functions to calculate and predict Excess Thermal Load. We will also go over formulae to calculate percent removal, Chlorine contact time, and pounds calculations for BOD and TSS. Michael Hawkins is the lead operator at the Boring Oregon Wastewater Facility and the Hoodland Wastewater Treatment Plant. He has been working in the wastewater field for 17 years, has a great deal of experience with small system operations, and is a board member of the ORWEF-WES planning committee.
LUNCH 12:30 - 1:00 PM		

5	1:00-2:00 pm	**A Breath of Fresh Air – Understanding the Importance of Diffused Aeration Systems** Bryen Woo *Aquarius Technolgies* The diffused aeration system is an important component of a wastewater treatment facility. Operators often find themselves balancing the equally vital need to meet effluent treatment objectives while also minimizing energy usage, maintaining diffuser integrity, managing diffuser fouling and clogging, and minimizing O&M costs. The selection of the facility specific diffuser system is therefore an important decision. This presentation will summarize the basics, challenges, design, fundamentals, applications, and importance of quality control in a DAS. We will also go over the different diffuser technologies and case studies of DAS in service. Bryen is the Business Development Director at Aquarius Technologies. He has over 20 years of wastewater treatment experience which includes biological treatment processes, diffused aeration, biosolids stabilization and resource recovery, and biological nutrient removal. He specializes in the operation and design of aerobic digestion systems. He has a Masters Degree in Environmental Engineering from California State University of Fullerton and is a registered professional Civil Engineer in California.
6	2:10-3:10 pm	**I Scream, You Scream, We All Scream for PFAS** Heather Jennings *Huma Environmental* Poly- and perfluoroalkyl substances (PFAS). As we deal with rapid regulatory changes, aging infrastructure and variable quantities of PFAS – what an operator needs to understand and how to talk to the engineers. Treatment technologies and what's on the cutting edge Heather Jennings is a registered professional Civil Engineer and serves as Director for Huma Environmental®, a brand of bioremediation products and services. Heather has over 20 years' experience in project management, environmental programs, and municipal and industrial facility system analysis; and has designed municipal water and wastewater systems. Heather is responsible for managing sales and the research and development efforts of Huma Environmental® wastewater treatment products and services. Heather holds a Bachelor of Science degree in Chemical Engineering from Brigham Young University and is the host of the Water Break Podcast.
7	3:20-4:20 pm	**Safeguarding the Workforce: Preventing Serious Injuries in Wastewater Operations** Elena Estrada Clackamas Water Environment Services This course will review the different hazardous work tasks and situations that occur in the wastewater industry, including some that carry the potential for serious injuries or fatalities (SIFs), and how environmental or human factors increase risks in the workplace. The session will provide tools on how to identify hazards that could lead to SIFs, tools to prevent incidents, and strategies for employees and supervisors to strengthen their safety program through the lens of SIF prevention. Elena Estrada is a Safety & Risk Analyst for Clackamas County Water Environment Services. She has been in the wastewater industry for 10 years, with a focus on safety specific assignments for 6 years.

DAY TWO: WEDNESDAY, JUNE 25, 2025 | Track B: Wastewater Operations		
	7:00 am	**Zoom opens, tech checks, change your names.**
	7:30 am	**Welcome and introductions** **Housekeeping, What to Expect, Certification Process, and more.**
8	8:00-9:00 am	**Proper Workplace Interactions in the Wastewater Field** Marion Barnes *City of Eugene* Most of the time, wastewater crews doing infrastructure construction or maintenance are focused solely on getting the job done well and on time. They don't have the time or interest in talking to members of the public, members of the media, or, sometimes, even other people in their department. It's understandable. But there are many instances in which work crews and leads can find themselves in the spotlight, so it's best to be prepared. Learn how to get used to attention–from media, from the public and from coworkers–and use it to your advantage! Marion Suitor Barnes is public affairs manager for City of Eugene Public Works, the city's largest department. Before representing Public Works, she was director of communications for the Oregon Department of Early Learning and Care and for Western Oregon University. Deep down, she's a journalist at heart, having spent 20+ years as a writer and editor for newspapers throughout the Pacific Northwest.
9	9:10-10:10 am	**Operating a Facility Under Construction, City of Portland's Headworks Story** Daryl Payne and Sundeep Kaur *City of Portland, Bureau of Environmental Services* The City of Portland Bureau of Environmental Services, Columbia Boulevard Wastewater Treatment Plant, headworks facility was the recent recipient of much needed upgrades. The existing 1996 era, 300-mgd headworks facility consisted of climber screens with 5/8" bar-spacing that allowed materials to pass through bar gaps and around the screen field through overflow channels during high water flow events. During high flow events the climber equipment could not keep up with heavy material loads resulting in downstream grit chamber failure. The cascading result of the grit chamber failure was increased grit loading in the primary clarifiers and subsequently to the digesters. The existing screenings removal and handling equipment needed to be replaced, while maintaining full operation of the headworks facility. This presentation will go over the Headworks Upgrade Project which installed five new 75-mgd capacity multi-rake bar screens, a belt conveyor, three grinders, three dual-screw washer-compactors with 500-gallon agitating hoppers, and six tipping troughs. We will also cover how plant operation was maintained during the project, lessons learned during construction, and the recorded improvements in the system. Daryl Payne has over ten years' experience as Certified Operator at the City of Portland Bureau of Environmental Services (Portland BES). Sundeep Kaur is a senior engineer with Portland BES. Sundeep has over ten years of experience planning, designing, and rehabilitating water and wastewater infrastructure.
10	10:20-11:20 am	**Water Reuse Alternatives Analysis for Columbia Blvd WWTP** Jesse Fields; Lesley Martinez; Stefan Chabane *Tetra Tech and the Portland Bureau of Environmental Services* The Columbia Boulevard Wastewater Treatment Plant (CBWTP) is gearing up to replace their water reuse treatment system. Currently, the plant water needs are provided by approximately 4 million gallons of groundwater daily due to persistent challenges with its existing microscreen filtration water reuse system. In 2024, the Bureau of Environmental Services, with support for Tetra Tech, conducted a thorough evaluation and selected a cloth disk filter system, designed to produce up to 8 million gallons per day of Class A Recycled Water. This reliable solution will address previous operational hurdles while incorporating new filter feed pumps and a sodium hypochlorite disinfection system. This session will focus on the technical evaluation and decision-making process behind CBWTP's innovative approach to sustainable water treatment. Stefan is a Wastewater Analyst with 9 years of experience in the water industry. A certified grade 3 operator, Stefan has worked primarily in municipal wastewater but has a background in industrial waste treatment as well as water reuse and distribution. Jesse is a Project Engineer with a decade of experience in the municipal utilities sector. His experience in water and wastewater infrastructure includes projects from planning and feasibility through design and construction. Lesley is a Civil Engineering Intern with six years of experience working on wastewater, drinking water, and stormwater projects for small municipalities. Lesley primarily focuses on the design and construction phases of water conveyance and treatment projects.

11	11:30-12:30 pm	**Smelly Situations: Selecting Odor Control Systems for Wastewater Facilities** Amelia McElhinney *Kennedy Jenks* Odor control systems used for wastewater treatment plants are not standard across every plant facility. Identifying the source of the odor, considering regulatory requirements and public impact, the available area for odor control systems, maintenance requirements, operational complexity, initial and operational costs, sustainability, and environmental impacts all play a part in determining what type of technologies and processes can be implemented to mitigate facility odors. Biofilters, trickling filters, chemical scrubbers, and carbon absorbers each have their own stand-out capabilities and short comings that make them better for some applications and less desirable for others. We will discuss different odor control systems, their potential applications, and where they have been used. Amelia is part of the engineering staff at Kennedy Jenks, primarily working on water transmission and wastewater treatment projects.
		LUNCH 12:30 - 1:30 PM
12	1:30 - 2:30 pm	**Doing You a Solid: Aerobic Digestion and Recuperative Thickening** Allison Lukens and Amelia McElhinney *Kennedy Jenks* This presentation will cover basic EPA and DEQ requirements for aerobic digestion, as well as the chemical processes that make aerobic digesters work. We will review th e design criteria used in the development of aerobic digesters and discuss benefits and drawbacks of the technology. We will cover different types of aeration and blower technologies and discuss lessons-learned from previous projects to help identify criteria for site specific installations. We will also discuss the Three Rivers Regional Wastewater Authority aerobic digestion project and how recuperative thickening can be used to improve the quality of digested sludge and operation of the digesters Allison is an Associate Engineer with Kennedy Jenks where she has worked on wastewater treatment and conveyance projects across the nation. Amelia is part of the engineering staff at Kennedy Jenks, primarily working on water transmission and wastewater treatment projects.
13	2:40-3:40 pm	**Fernhill Wetlands Natural Treatment System** Jeff Hart *Clean Water Services* The Fernhill Wetlands is a 110-acre Natural Treatment System (NTS) in Forest Grove that is used to treat multiple constituents in wastewater. Jeff will explain the need for the NTS and how it works to help meet discharge requirements. Jeff is a Principal Engineer with Clean Water Services that works on a multiple array of projects, processes, and programs. He is also the President of the Lower Columbia Section of PNCWA.
14	3:50-4:50 pm	**Factors Impacting Dewatering** Mario Benisch *HDR* The focus of the presentation will be on providing tangible information that operators, utility managers, and engineers can apply to improve dewatering performance, future dewatering facility designs, and to further the understanding about the interrelations between liquid treatment, solids treatment, and the impact that transfers of external loads have on the receiving plant. To sum up the undelaying message; most factors impacting dewatering are outside of the dewatering building. Mario Benisch graduated from University of Stuttgart, Germany with MS in Environmental Engineering. Since 1998, he has worked with HDR in Portland, OR. He is now senior wastewater process engineer with focus on nutrient removal and recovery, emerging technologies, process intensification, dewaterability, and plant data visualization.

DAY THREE THURSDAY, JUNE 26, 2025 | Track B: Wastewater Operations		
	7:00 am	**Zoom opens, tech checks, change your names.**
	7:30 am	**Welcome and introductions** **Housekeeping, What to Expect, Certification Process, and more.**
15	8:00-9:00 am	**From Field Sampling to Community Impact: Tracking Viruses in Wastewater** Wendy Woothtakewahbitty, Leslie Dietz, and David Mickle *Oregon State University* Wastewater surveillance begins and ends with community. Wastewater sampling provides a powerful tool for detecting viruses and monitoring public health trends. This talk will cover how field sampling locations are chosen and the techniques used to collect and process wastewater samples. We will address frequently asked questions about wastewater surveillance and discuss use of the data as well as the molecular approaches employed for viral detection.
16	9:10-10:10 am	**Streamlining Compliance: Mastering Water Quality Permitting via YDO** Mark Bentz *DEQ* Water Quality permitting started using Your DEQ Online (YDO) on April 16, 2025. This transition aligned all water quality compliance reporting onto the internet and eliminated pen and paper submissions. Application, payment, and reporting processes are assimilated into one online platform. Most of the Department of Environmental Quality are already using YDO to support the public and collaborate internally. A phased rollout included registration, training, and support mechanisms. This is a significant change, and guidance on how to manage expectations for associated work will be communicated. Much of the information stored in YDO will be readily available and accessible with a few key strokes, offering immediate access to a large amount of environmental data. Questions and Answers about implications will follow a walkthrough for wastewater operators. Mark Bentz is a Water Quality Compliance Specialist at the Oregon Department of Environmental Quality in Portland, Oregon. He's a DMR Reviewer for Northwest Region and since 2019, he's worked with wastewater facilities on their reporting methods. When he's not reading water reports, he is also tasked with enforcements, inspections, and investigations. After work, Mark Bentz has been coaching youth sports for two decades, presently with Milwaukie High School Swim. During a successful Army career spanning over 23 years, First Sergeant (retired) Bentz led front line soldiers and specialized in leadership, reconnaissance, and security. Mark graduated from Marylhurst University with a BA in science and environmental science in June 2018.
17	10:20-11:20 am	**Reducing Operating Costs with Energy Efficiency** Tyler Weber *AESC, Inc* Energy Trust of Oregon will share an overview of energy use in Water and Wastewater Treatment operations. This presentation will touch on common efficiency measures, real life examples of implementations, and program incentive opportunities. The presentation will be followed by a question-and-answer session. Tyler Weber began his career as an environmental consultant and has been supporting the Energy Trust Industrial efficiency program since 2020. He has worked with hundreds of industrial and municipal water and wastewater facilities across the West Coast to improve operations and decrease energy use. He is a registered Environmental Engineer in Oregon and has a chemical engineering degree from Oregon State University.
18	11:30-12:30 pm	**Optimize WWTP Mixing for Efficiency & Process Resiliency** Alden Meade *Xylem Inc* Wastewater treatment is more challenging than ever, requiring flexibility, accuracy, and reliability. In the past mixers were designed for worst case scenarios, whether flow or loading, and did not provide flexibility to meet changing mixing demands. With an increased focus on energy management and treatment optimization, mixers present an opportunity for improve by on both fronts by focusing on optimizing conditions. Variable speed mixing ensures that bacteria and nutrients are consistently in motion, increasing their interaction with changing conditions and increasing efficiency. Attendees of this presentation will walk away with a better understanding of wastewater treatment mixing and the technology available to enhance its effectiveness. In addition, they will learn different ways to monitor treatment processes and will have suggestion on control options that they can attempt at their own facilities to improve resiliency throughout the plant. Alden Meade is a Mechanical Engineer with Xylem's Flygt Mixer Group. His focus is primarily Mechanical Mixers & Mixer hydraulics in WWTP applications, Alden has over 10 years' experience in the wastewater industry and wastewater system design.
LUNCH 12:30 - 1:30 PM		

19	1:30 - 2:30 pm	**Odor Control in the Context of Odor Impact** Jonathan Gordon *Parametrix* Odor impacts to the community can culminate in annoyance and complaints when people are exposed to odor. Whether the exposure of any one person to odor results in an odor impact (e.g., that person being annoyed, that person complaining, etc.) depends on the personal characteristics of that person – their personal history of exposure, their personal connection to the source(s) responsible for the odor, their mood at the time of exposure etc – as well as the nature of the exposure. Although exposure is ultimately driven by source emissions, the nature of exposure also depends to a large degree on atmospheric dispersion. While the purpose of odor control is to minimize odor impacts, the design and day-to-day operation of odor control equipment revolves around achieving emission goals. However, because emissions are just one driver of odor impact, even consistent achievement of emission goals is no guarantee of zero odor impact overall. This presentation will explain why characterizing exposure and odor impacts in a meaningful way is challenging and how that, in turn, has shaped how odor is regulated as well as how odor control systems are designed and operated. Jonathan Gordon is a Water/Wastewater Engineer and Odor Practice Lead with Parametrix. He has a bachelor's degree in chemical engineering from the University of Virginia and a master's degree in environmental engineering from Johns Hopkins University. He has worked in the industry for twelve years and has had sniffing sewer odor as part of his job description the entire time.
20	2:40-3:40 pm	**Wastewater Lagoons Workshop: Ammonia Removal and Other Common Lagoon Issues** Mike Hawkins *Clackamas Water Environment Sevices* This hour long collaborative workshop will discuss common lagoon issues and solutions that have worked in the past. Attendee participation will be strongly encouraged! We hope to share issues that have plagued lagoon operators, and unique solutions that have helped solve those issues. Michael Hawkins is the lead operator at the Boring Oregon Wastewater Facility and the Hoodland Wastewater Treatment Plant. He has been working in the wastewater field for 17 years, has a great deal of experience with small system operations, and is a board member of the ORWEF-WES planning committee.
21	3:50-4:50 pm	**New Technologies for Nutrient Removal** Halley Keating *World Water Works* This presentation will discuss some options for upgrading existing wastewater treatment systems to enhance nutrient removal and/or increase treatment capacity. The technologies discussed will include the miGRATE system of migrating biofilm carriers and the inDENSE system of selective sludge wasting technology for improved sludge settleability and nutrient removal optimization. Halley has more than 15 years of experience working on municipal and industrial wastewater and water process designs.

SESSION DESCRIPTIONS TRACK C: SOURCE CONTROL

DAY ONE: TUESDAY, JUNE 24, 2025 | Track C: Source Control		
	7:00 am	**Zoom opens, tech checks, change your names.**
	7:30 am	**Welcome and introductions** **Housekeeping, What to Expect, Certification Process, and more.**
1	8:00-9:00 am	**Solids Renewal Updates from Denmark and Beyond** Frank Dick *City of Vancouver, Washington* Frank Dick visited Denmark where he spoke with industry professionals about solids renewal projects and the circular economy. These are the highlights he brought back. Frank is a Chemical Engineer who has been in the industry for over 17 years. He is currently the manager of the wastewater treatment engineering program at City of Vancouver, Washington.
2	9:10-10:10 AM	**Burn, Bury...or Beneficial? Vancouver's Journey to Solids Resource Recovery** Frank Dick *City of Vancouver, Washington* The City of Vancouver is beginning the multi year process of planning for a new solids treatment train. This facility currently incinerates and changing to a new technology will be quite the undertaking! CoV is partnering with consultants to find the best project delivery and site implentation, while maintaining functionality. In prallel with this planning effort, the project team performed significant community outreach to identify key needs and the priorities of the Vancouver's citizens, while keeping in mind environmental justice concerns. Frank is a Chemical Engineer who has been in the industry for over 17 years. He is currently the manager of the wastewater treatment engineering program at City of Vancouver, Washington.
3	10:20-11:20 AM	**Climate Impacts in Resource Recovery** Terrance Romaine *Clackamas Water Environment Services* *Carbon Management in Resource Recovery* Terrance Romaine is the Environmental Services Manager for Clackamas Water Environment Services. He oversees programs responsible for the beneficial reuse of wastewater residuals, developing water recycling and renewable energy opportunities for the County; and manages the Industrial Pretreatment and Watershed Protection staff. He has 20 years of regulatory and quality assurance experience in various positions in the public sector, a Bachelor of Science in Biology from Arizona State University and a Master of Science Technology in Environmental Technology Management from Arizona State University Polytechnic.
4	11:30-12:30 pm	**PFAS: Everything, Everywhere All at Once** Terrance Romaine *Clackamas Water Environment Services* *PFAS* Terrance Romaine is the Environmental Services Manager for Clackamas Water Environment Services. He oversees programs responsible for the beneficial reuse of wastewater residuals, developing water recycling and renewable energy opportunities for the County; and manages the Industrial Pretreatment and Watershed Protection staff. He has 20 years of regulatory and quality assurance experience in various positions in the public sector, a Bachelor of Science in Biology from Arizona State University and a Master of Science Technology in Environmental Technology Management from Arizona State University Polytechnic.
LUNCH 12:30 - 1:00 PM		

5	1:00-2:00 pm	**Laboratory Testing for Wastewater Treatment** Patrick Leach *Clackamas Water Environment Services, Water Quality Laboratory* This session will describe the categories of laboratory testing that are performed to support and inform wastewater treatment facilities. Specific examples of testing within each category will be described, with an emphasis on those most often used to support process control and permit requirements. This session will also discuss the differences and challenges in the methods for different phases of wastewater treatment, such as: solids versus liquids, treated versus untreated or partially treated waters. Patrick Leach is a laboratory analyst at Clackamas Water Environment Services (WES) in Oregon City. This laboratory provides wastewater and biosolids testing services for the agency's four wastewater treatment facilities as well as surface water testing for its watershed protection program. Patrick oversees the microbiology section of the WES lab and also specializes in nutrient analysis. He received a bachelor's degree in Environmental Science and Biochemistry from the University of San Francisco, taught biology laboratory classes, worked at a soil and water research lab at the University of Arizona, worked as a chemist at Turner Laboratories, then joined the staff at Clackamas WES in 2009.
6	2:10-3:10 pm	**Small Community, Large Brewery: A Case Study of a Regulation** Stephanie Kerns *City of Newport, OR* This session will present a case study type overview of the process that the City of Newport has been implementing to get a single large Industrial user, a brewery, into compliance. This is a look into the challenges and successes of that process as well as how that has applied to the voluntary pretreatment program as a whole in this jurisdiction. Stephanie Kerns is an Environmental Compliance Specialist who started as pretreatment coordinator at the City of Newport and has since moved into the Environmental Compliance Specialist Position.
7	3:20-4:20 pm	**Strengthening Partnerships with Local Industries through a Co-digestion Program** Ornella Sosa-Hernandez and Kevin Wegener *Clean Water Services* Clean Water Services (CWS) is developing a co-digestion program to utilize available digestion capacity at the Rock Creek Water Resources Recovery Facility (WRRF) and increase biogas generation. With this, CWS can consider Renewable Natural Gas (RNG) as a gas utilization option. This would then allow CWS to better serve the district by strengthening relationships with surrounding industries that can provide High Strength Wastes (HSW). In order to meet the gas production goals of CWS, they will need a variety of HSW sources, and the internal processes to support fast response with with these partners, as well as conducting in-house testing. Ornella Sosa-Hernandez is an Operations Analyst in the Technology Development and Research group at Clean Water Services. She received her Ph.D. of Science and Engineering from the Monterrey Institute of Technology in Mexico. Kevin Wegener is an Operations Analyst for Digestion and ADM in the Water Resource Recovery Servies group at Clean Water Services. He received his Associate of Applied Science from Clackamas Community College, holds a Grade IV certification for wastewater treatment system operation and has a total of 17 years of experience as an operator.

DAY TWO: WEDNESDAY, JUNE 25, 2025 | Track C: Source Control		
	7:00 am	**Zoom opens, tech checks, change your names.**
	7:30 am	**Welcome and introductions** **Housekeeping, What to Expect, Certification Process, and more.**
8	8:00-9:00 am	**Proper Workplace Interactions in the Wastewater Field** Marion Barnes *City of Eugene* Most of the time, wastewater crews doing infrastructure construction or maintenance are focused solely on getting the job done well and on time. They don't have the time or interest in talking to members of the public, members of the media, or, sometimes, even other people in their department. It's understandable. But there are many instances in which work crews and leads can find themselves in the spotlight, so it's best to be prepared. Learn how to get used to attention–from media, from the public and from coworkers–and use it to your advantage! Marion Suitor Barnes is public affairs manager for City of Eugene Public Works, the city's largest department. Before representing Public Works, she was director of communications for the Oregon Department of Early Learning and Care and for Western Oregon University. Deep down, she's a journalist at heart, having spent 20+ years as a writer and editor for newspapers throughout the Pacific Northwest.
9	9:10-10:10 am	**Pre-Treatment 101** Chris Desiderati *Clackamas Water Environment Services* When the federal Clean Water Act was last amended in 1972, legislators envisioned a national program that would apply standards to a classes of industries that discharge to publicly owned treatment works. Federal rules developed over the next few years cemented what we know of today as the General Pretreatment Regulations, a set of requirements that regulate "indirect dischargers" to wastewater treatment plants with the goals of preventing interference, preventing pass-through, and protecting worker health. This presentation will give an overview of these goals of a pretreatment program, what it takes to implement a delegated pretreatment program, and how utilities can voluntarily implement measures to help protect their collection systems and treatment plants from surprises without a full-blown pretreatment program. Chris Desiderati is an Environmental Services Supervisor at Clackamas Water Environment Services. He has 10 years of experience at WES implementing and planning pollution prevention and environmental monitoring programs. Prior to his time at WES, Chris worked for an industrial chemical manufacturer and a private environmental testing lab.
10	10:20-11:20 am	**Enforcement Response Plans** Chris Desiderati *Clackamas Water Environment Services* An enforcement response plan (ERP) is a component of any delegated pretreatment program. The purpose of an ERP is for utilities to develop consistent, legally-enforceable response actions against private industries that violate utility rules or issued permits. In general, ERPs have several goals including guiding staff in how to: return industries to compliance with rules and permits, deter future violations and violators, and protect public health and the environment. This presentation will describe what an ERP is and is not, how they're developed, and how the major elements of an ERP are implemented with WES' latest ERP update. Chris Desiderati is an Environmental Services Supervisor at Clackamas Water Environment Services. He has 10 years of experience at WES implementing and planning pollution prevention and environmental monitoring programs. Prior to his time at WES, Chris worked for an industrial chemical manufacturer and a private environmental testing lab.

11	11:30-12:30 pm	**Protecting Amphibians with Pipe Ramming Technology** Brandon Falk *Consor* The Palensky Wildlife Underpass Project installed a wildlife underpass beneath the four-lane Lower Columbia River Highway (US 30) to reconnect restored wetlands adjacent to the Columbia River to the Tualatin Mountains, northwest of Portland, Oregon. The underpass was designed to provide a safe passage corridor for the Northern Red-legged Frog, designated as a Sensitive Species, as the frogs migrate between their mountain and wetland habitats. This presentation will go over the selection of the trenchless installation method for installing the 54-inch diameter, 1-inch-thick steel casing pipe; the practical challenges of a construction work zone situated between US 30 and a railroad; designing a tunnel in line with the anatomical characteristics of the Northern Red-legged Frog; and more. The Project went out for bid three times between 2022 and 2023, with construction occurring in 2024. This Presentation will discuss the multi-agency Project approach, geotechnical conditions, frog-friendly design, bidding and construction, document frog use and the biological studies donein parralel with the punch list; as well as overall lessons learned. Brandon has broad range of experience with utility projects, including larger diameter pipelines, well sites, pump stations, water transmission lines, gravity conveyance, culvert replacements, stream improvements, and condition assessments. He specializes in sewer and storm rehabilitation technologies as well as new installations involving trenchless methods.
LUNCH 12:30 - 1:30 PM		
12	1:30 - 2:30 pm	**Environmental Engineering in Action at a Water Resource Recovery Facility (WRRF),** Session Part 1 of 3 Chris Maher *Clean Water Services* This session will go over the scientific engineering principles employed in a WRRF, as well as the units processes, following the flow through a WRRF: • Primary Clarifier - Stoke's Law for Discrete Particle • Settling Aeration Basin - Biological Growth Kinetics and Oxygen Transfer • Secondary Clarifier - Flocculent Settling and Flux • Chemical Dosing - Zero, First, and Second Order Reactions • Filtration - Particle Interception and Backwash (Stoke's Law) An attendee can gain an understanding of the vocabulary of environmental engineering, enjoy a deeper look into the core of wastewater treatment processes, and could vastly enhance their troubleshooting skills by being able to think critically on the particulate, microbiological, and elemental level. Chris has 20 years experience as Certified Wastewater Treatment Operator for advanced activated sludge and biological nitrogen and phosphorus removal processes. Chris has a BS in Chemistry from Colorado State University and an MSEE from Illinois Institute of Technology. He is an Oregon DEQ Wastewater System Operator, Treatment, Grade IV.
13	2:40-3:40 pm	**Environmental Engineering in Action at a Water Resource Recovery Facility (WRRF),** Session Part 2 of 3 Chris Maher *Clean Water Services* This session will go over the scientific engineering principles employed in a WRRF, as well as the units processes, following the flow through a WRRF: • Primary Clarifier - Stoke's Law for Discrete Particle • Settling Aeration Basin - Biological Growth Kinetics and Oxygen Transfer • Secondary Clarifier - Flocculent Settling and Flux • Chemical Dosing - Zero, First, and Second Order Reactions • Filtration - Particle Interception and Backwash (Stoke's Law) An attendee can gain an understanding of the vocabulary of environmental engineering, enjoy a deeper look into the core of wastewater treatment processes, and could vastly enhance their troubleshooting skills by being able to think critically on the particulate, microbiological, and elemental level. Chris has 20 years experience as Certified Wastewater Treatment Operator for advanced activated sludge and biological nitrogen and phosphorus removal processes. Chris has a BS in Chemistry from Colorado State University and an MSEE from Illinois Institute of Technology. He is an Oregon DEQ Wastewater System Operator, Treatment, Grade IV.

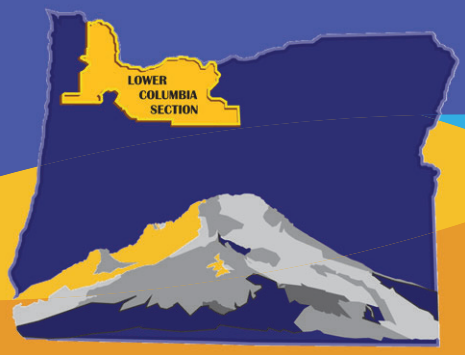
14	3:50-4:50 pm	**Environmental Engineering in Action at a Water Resource Recovery Facility (WRRF),** Session Part 3 of 3 Chris Maher *Clean Water Services* This session will go over the scientific engineering principles employed in a WRRF, as well as the units processes, following the flow through a WRRF: • Primary Clarifier - Stoke's Law for Discrete Particle • Settling Aeration Basin - Biological Growth Kinetics and Oxygen Transfer • Secondary Clarifier - Flocculent Settling and Flux • Chemical Dosing - Zero, First, and Second Order Reactions • Filtration - Particle Interception and Backwash (Stoke's Law) An attendee can gain an understanding of the vocabulary of environmental engineering, enjoy a deeper look into the core of wastewater treatment processes, and could vastly enhance their troubleshooting skills by being able to think critically on the particulate, microbiological, and elemental level. Chris has 20 years experience as Certified Wastewater Treatment Operator for advanced activated sludge and biological nitrogen and phosphorus removal processes. Chris has a BS in Chemistry from Colorado State University and an MSEE from Illinois Institute of Technology. He is an Oregon DEQ Wastewater System Operator, Treatment, Grade IV.

DAY THREE: THURSDAY, JUNE 26, 2025 | Track C: Source Control		
	7:00 am	**Zoom opens, tech checks, change your names.**
	7:30 am	**Welcome and introductions** **Housekeeping, What to Expect, Certification Process, and More.**
15	8:00-9:00 am	**From Field Sampling to Community Impact: Tracking Viruses in Wastewater** Wendy Woothtakewahbitty, Leslie Dietz, and David Mickle *Oregon State University* Wastewater surveillance begins and ends with community. Wastewater sampling provides a powerful tool for detecting viruses and monitoring public health trends. This talk will cover how field sampling locations are chosen and the techniques used to collect and process wastewater samples. We will address frequently asked questions about wastewater surveillance and discuss use of the data as well as the molecular approaches employed for viral detection. Leslie Dietz is a Faculty Research Assistant with a strong foundation in microbiology, molecular biology, and field-based environmental research, with over two decades of experience in both laboratory and field settings dating back to 2001. She leads the strategic development of field sampling sites, supervises field operations, and collaborates closely with healthcare facilities, universities, and students. Her work centers on wastewater-based pathogen surveillance, molecular assay development, and the detection of multi-drug resistant organisms. Wendy Woothtakewahbitty is a microbiologist and project manager in the Oregon Wastewater Surveillance Program at Oregon State University. She conducts outreach with utilities and local public health and manages an environmental engineering laboratory with undergraduate student employees. David Mickle is a molecular biologist in wastewater-based epidemiology at Oregon State University, specializing in assay development and process optimization using digital PCR (dPCR) technologies. He generates and analyzes wastewater data, reporting findings to the Oregon Health Authority to support public health surveillance.
16	9:10-10:10 am	**Brewing Responsibly: Navigating Brewery Wastewater Regulations** Zach Foster *City of Eugene* Brewery Wastewater Permittng is a complex creature, 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 will discuss the history of the Industrial Pretreatment Program, the 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. Zach Foster is an Environmental Compliance Specialist with City of Eugene and manages Industrial Pretreatment Permits. Prior to coming to work for the City of Eugene, he worked for eight years at Hop Valley Brewing, a regional brewery in Eugene. He was Quality Manager and managed the QA/QC laboratory, as well as performing various other roles including brewing, recipe development, automation programming and IT, and EHS.
17	10:20-11:20 am	**Creating and implementing a pro-active Industrial/Commercial Stormwater Inspection program from scratch** Rob Livingston *Clackamas Water Environment Services* This session will discuss creating and implementing a pro-active Industrial/Commercial Stormwater Inspection program from scratch. We will discuss how to set this up from start to finish, and my career lessons learned gathered along the way. Rob Livingston is a Technical Services Specialist at Clackamas Water Environment Services and a graduate of CCC's Water and Environmental Technology (WET) Program. He has been performing Industrial Pretreatment, Source Control and Stormwater duties at WES & the cities of Milwaukie and McMinnville since 1998.

18	11:30-12:30 pm	**Surface Water Management at WES: Preventing Non-Point Source Wastewater Pollution** Gail Shaloum *Clackamas Water Environment Services* WES works to prevent non-point source wastewater pollution through eight control measures: Public education, Public involvement, Illicit discharge detection and elimination, Construction site runoff controls, Post-construction runoff controls, Pollution prevention/good housekeeping, Commercial/industrial inspections, and Stormwater/ Collection facility O&M. In addition to prevention, we also conduct stream restoration projects, stormwater facility retrofits and other construction projects. Come hear about WES's multi facet approach to protecting our water resources. Gail Shaloum manages riparian and stream restoration projects, manages the RiverHealth Stewardship grant program, oversees the Watershed Health Education Program, and has been with WES since 2011. She is a natural resources scientist and landscape architect with over 30 years of experience working in stream restoration, wetland mitigation, stormwater management, NEPA compliance, and low impact development practices–in both the public and private sectors. She is a graduate of Rutgers University and Oregon Graduate Institute.
LUNCH 12:30 - 1:30 PM		
19	1:30 - 2:30 pm	**Oregon Association of Clean Water Agencies Model FOG Ordinance Updates** Jill Hoyenga *Regulatory Compliance Manager* This presentation offers a model for building a strong FOG abatement ordinance. An ordinance to abate fats, oils and grease (FOG) is part of a comprehensive approach to Capacity, Management, Operations and Maintenance (CMOM). The US EPA found that grease from restaurants, homes, and industrial sources are the most common cause (47%) of reported sewer blockages. FOG abatement is a pretreatment requirement but, overlapping jurisdictions impact utility efforts. Installing FOG abatement equipment is in the jurisdiction of the plumbing code and the Oregon Health Authority and the Oregon Dept. of Agriculture requirements cause FOG discharge. The OR-ACWA model ordinance helps utilities adopt an ordinance that collaborates with other jurisdictions. Most NPDES permits include requirements to prevent and report sanitary sewer overflows. FOG interference has proven to be a significant cause of sanitary sewer overflows. Pretreatment program coordinators and wastewater collection operator can work together on FOG abatement efforts but such efforts must have a strong ordinance that leverages the full authority of the utility's jurisdiction. Jill has worked at the City of The Dalles Public Works Department since 2017. She is responsible for ensuring that the City is in compliance with water, wastewater, stormwater and transportation regulations. She manages the Industrial Pretreatment Program for the City, which includes a robust FOG abatement program. She served on the Oregon Association of Clean Water Agencies FOG Working Group that developed the model ordinance and served as primary author of the model.
20	2:40-3:40 pm	**Collaborative FOG Enforcement** Jill Hoyenga *Regulatory Compliance Manager* US EPA found that fats, oils and grease (FOG) from restaurants, homes, and industrial sources are the most common cause (47%) of reported sewer blockages. FOG abatement is a pretreatment requirement and is part of a comprehensive approach to Capacity, Management, Operations and Maintenance (CMOM). But, overlapping jurisdictions impact utility efforts. Sometimes internal communication barriers cause utilities to miss opportunities to effectively keep FOG from causing sanitary sewer overflows. This presentation offers several case studies that show how a collaborative approach can streamline efforts to keep FOG out of sanitary sewers. Jill has worked at the City of The Dalles Public Works Department since 2017. She is responsible for ensuring that the City is in compliance with water, wastewater, stormwater and transportation regulations. She manages the Industrial Pretreatment Program for the City, which includes a robust FOG abatement program. She served on the Oregon Association of Clean Water Agencies FOG Working Group that developed the model ordinance and served as primary author of the model.

21	3:50-4:50 pm	**Update on Mobile Food Units – Mouthwatering or Miasma** Jill Hoyenga *Regulatory Compliance Manager* Mobile Food Units (MFU) are a booming food service establishment segment. They are considered to be a small business opportunity with low initial investment. Until 2020 mobile food units had relatively little regulation in Oregon. The lack of authority to regulate and enforce led to several years of sanitary and storm sewer violations with few consequences. The regulatory landscape has changed. But, wastewater utilities have not been kept in the loop. The purpose of this presentation is to make wastewater and stormwater operators aware of the issues and the authorities having jurisdiction when violations occur. FOG violation prevention and enforcement efforts are more effective when using a collaborative approach. Jill has worked at the City of The Dalles Public Works Department since 2017. She is responsible for ensuring that the City is in compliance with water, wastewater, stormwater and transportation regulations. She manages the Industrial Pretreatment Program for the City, which includes a robust FOG abatement program. She served on the Oregon Association of Clean Water Agencies FOG Working Group that developed the model ordinance and served as primary author of the model.

PNCWA Lower Columbia Section



PNCWA LCS chapter reached out to ORWEF looking to partner for our WES planning in 2025. LCS recruited the speakers for our Track B Wednesday line up and are a great sibling in the short school network of education events!

In the Lower Columbia Section, We Learn, Grow, and Excel!

We connect people across the stormwater and wastewater industry to become better stewards for public health and the environment.

- → Join Us on a Plant Tour
- → Let Us Know About an Incredible Worker to Spotlight
- → Become a Board Member

We are continuously looking out for opportunities to offer CEUs. LCS hosts plant tours throughout the year across the Lower Columbia. We are currently establishing virtual brown bags that anyone can join virtually.

Have an excellent colleague? Let us know! We post spotlight articles to give credit to those furthering the efforts of our industry on our LinkedIn page.

Our mission

Providing networking and continuing education for water professionals in the Pacific Northwest. Come Learn, Grow, and Excel with us!

As the Lower Columbia Section of the Pacific Northwest Clean Water Association, we bring together water professionals for learning opportunities, networking and acknowledging excellence. From Clatsop to Wasco, we seek the chance to learn what different technologies and practices are being used. Together, we can improve our collective understanding to answer questions and address problems that we all face in safely treating and conveying water throughout communities and the environment.

To be added to the mailing list, please email: lowercolumbiasection@gmail.com

NEXT STEPS

We will be sending the certificates through our ORWEF committee e-mail orwef.wes@gmail.com with the subject of the e-mail will be your First Name Last Name ORWEF CERT 2025.

If at any time you want to check to make sure that we have the correct e-mail to send the certificate to please reach out to orwef.wes@gmail.com

Please notify us if you do not receive your certificate by noon on Friday, June 27th, 2025.

Thank you!

REACH OUT BY EMAIL TO BOTH:
orwef.mnm@gmail.com
amber.steele@clackamas.edu
www.clackamas.edu/WET

NOTES:

EVENT LOCATION MAP

Gregory Forum

KEYNOTE: G-108C

TRACK A/COLLECTION SYSTEMS: G-108A

TRACK B/WASTEWATER OPERATIONS: G-108B

TRACK C/SOURCE CONTROL/POLLUTION PREVENTION: G-108C

REGISTRATION, VENDORS and FOOD: Lobby Space