

PO Box 872467 Vancouver, WA 98687 T 503-760-6460 F 360-254-0695 www.pnws-awwa.org

March 6, 2023

Ms. Judy Grycko OESAC CEU Committee PO Box 577 Canby, OR 97013-0577

Re: OESACID: 5827 – CEU Application Update for Technical Program Content, Pacific Northwest Section – American Water Works Association (PNWS-AWWA) 2023 Annual Conference.

Dear Judy Grycko,

Enclosed for your review, evaluation and CEU credit approval are a few updates to the 2023 PNWS-AWWA Annual Conference, to be held in Kennewick, WA, May 3-5, 2023. These updates are due to speaker cancellations. Only speaker biographical information is updated

The conference will allow water and wastewater professionals the opportunity to enhance their job skills and knowledge. Information and education about topics including engineering, water quality, water resources, water treatment, water distribution, customer service, public information/education, water information technology, water system resilience, regulatory compliance, asset and data management as well as other utility management strategies will be presented during this virtual conference.

Enclosed materials include:

- Updated program schedule
- Updated abstracts, which include training goals and new speaker information
- New request for CEU assignment, Top Ops

Attendance at sessions during the conference will be tracked by reading bar codes on each attendee's name tag at the beginning of each session and after each hour of presentations. Registration materials and conference information can be accessed on-line <u>http://www.pnws-awwa.org/conference/</u>.

On behalf of the Pacific Northwest Section – American Water Works Association, thank you for your time and assistance regarding this request. Should you have any questions, please do not hesitate to contact me at my home office (541) 543-5774 or at jhoyenga@pnws-awwa.org.

Respectfully, Jill Hoyenga 2023 PNWS-AWWA Program Committee Chair Home office (541) 543-5774

Enclosures





Session ID SAC FPM2	Date May 5, 2023	Length of Session	1 hour

Location Room A&B Drinking Water, Wastewater, Both Drinking Water

Presentation Title: Top Ops

- Abstract Top Ops is the "college bowl" of the water industry. Teams of one, two or three operators from all PNWS subsections compete against each other in a fast-paced question-and-answer tournament.
- **CEU Relevancy** Teams answer a broad range of technical questions covering topics such as water quality, distribution, treatment, and regulations. Winners proceed to the national AWWA conference.

Author: Bill Reynolds	breynolds@cityoftacoma.org					
Author's Job Title: Capital Planning Manager	Phone: (253)502-8390					
Organization: Tacoma Water						
Primary Job Duties: Bill Reynolds is currently the Capital Planning Operations Manager for the City of Tacoma Water Division. He is responsible for the planning of Main Replacement Projects and Private Development paid for work associated with the Maintenance & Construction Division within the utility						
Related Prior Employment						
Registrations or Certifications: Certified Water Operator						



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2023 Annual Conference, Kennewick, WA May 3 – 5

Three Rivers Convention Center 7016 W Grandridge Blvd. Kennewick, WA99336

Session ID: EngTAM05 Date: 5/4/2023 Length of Session: 60 Minutes

Area of Relevancy: Drinking Water

Presentation Title: Dog River Pipeline: Replacing a 100-year-old Wooden Pipeline to Secure a Resilient Water Future

Abstract: The Dog River Pipeline has operated for more than 100 years and provides over half the City of The Dalles' annual water supply through an inter-basin transfer to South Fork Mill Creek. The City prioritized the wooden pipe's replacement for over 20 years and has worked through extensive permitting and public process to finally arrive at project implementation to address leaks and failures as the pipe transits through Mount Hood National Forest. Replacing this critical infrastructure has involved a complex multi-agency permitting process, realignment to improve access in existing roads, effective federal and local partnerships, and thoughtful planning for ongoing construction in a recreation area. Dog River is an essential source of drinking water and subject to changing hydrology in a changing climate. The new 3.5-mile 30-inch-diameter HDPE pipeline will be a key piece of a more resilient water system.

CEU Relevance Statement: Audience will benefit from understanding how this project addressed pipeline construction over multiple seasons with critical bypassing, coordination experiences with Federal and State regulators, public engagement successes and processes, pipe material selection and procurement processes, contractor qualification, project packaging and scheduling, and provisions for remote connectivity with satellite internet at remote site.

Author: R. Brady Fuller Author's Job Title: Client Account Manager

Email: brady.fuller@jacobs.com Phone: 541.318.4716

Organization: Jacobs Engineering Group Inc. (1998-2023)

Primary Job Duties: Project management, planning, design, construction management of multidisciplinary water, wastewater and irrigation projects for municipal clients.

Related Prior Employment: Otak, Inc. (Lake Oswego, Oregon) – Water Resources Engineer

Registrations or Certifications: Professional Engineer – Civil; (OR 515109, WA37680, ID17659); Oregon Certified Water Rights Examiner (51509CWRE)



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2023 Annual Conference, Kennewick, WA May 3 – 5

Three Rivers Convention Center 7016 W Grandridge Blvd. Kennewick, WA 99336

Session ID: DistPCPM01 Date: 5/3/2023 Length of Session: 60 Minutes

Area of Relevancy: Both

Presentation Title: Pipe Bursting and Sliplining

Abstract: Municipal installation of high density polyethylene (HDPE) is growing beyond the typical trenchless technology installations. The Alliance for PE Pipe has built a reputation for high quality educational material for all things HDPE and is teaming with the AWWA community to offer this workshop. This session will help operators and engineers understand the opportunities and challenges associated with using HDPE as a pipe rehabilitation option. Pipe bursting is the only trenchless technology rehabilitation method that can install a larger ID replacement pipe. Set up for sliplining projects is very similar to pipe bursting but the existing pipe remains intact. Discussions on applications, technology and crew limitations for sizes and lengths, design and construction considerations will be presented. This session will include a Case Study: City of Portland.

CEU Relevance Statement: The relevancy of this seminar will be providing operators, engineers and managers with knowledge on the applicability and limitations of HDPE pipe and the field techniques, issues, and challenges used during installation

Author: Dan Landy Author's Job Title: Engineer

Email: dlandy@pepipe.org Phone: 0

Organization: PE Pipe Alliance

Primary Job Duties: His primary roles are assisting specifying engineers, cities, municipalities, etc in their adoption of HDPE. Dan runs a lot of the free resources the Alliance offers such as seminars with engineering firms, handling design concerns, project review/assistance, and specification writing.

Related Prior Employment: Thirty years of experience as a consultant in the municipal water industry. Technical demonstrations will be HDPE pipe specialists.

Registrations or Certifications: Professional Engineer



2023 Annual Conference, Kennewick, WA May 3 – 5

Three Rivers Convention Center 7016 W Grandridge Blvd. Kennewick, WA 99336

Session ID: TreatFAM03 Date: 5/5/2023 Length of Session: 30 Minutes

Area of Relevancy: Drinking Water

Presentation Title: Deep-Bed Filters: State of the Art and Lessons Learned

Abstract: The drinking water industry in North America has been building and operating dual media filters with 24-48 inches (600-1000 mm) of media loaded at 4-5 gpm/ft2 (10-12 m/h) since the Second World War. In recent years, utilities and design engineers have recognized the cost savings that can be realized from using deeper filter beds that are 60-100 inches (1500 – 2500 mm) deep and running at loading rates of up to 12 gpm/sf (30 m/h). The fundamentals of the filtration process provide insight into both the potential benefits of deep-bed filtration as well as key requirements to avoid potential problems. This presentation discusses the state of the art for deep-bed filter designs from both a theoretical and practical basis, highlighting the characteristics of successful full-scale designs. A series of practical case studies will be discussed to show how these deep-bed designs have performed in full-scale operation.

CEU Relevance Statement: Effective use of high-rate filtration can greatly improve overall plant efficiencies and help save water and avoid costly upgrades. This presentation can help inform operators about the benefits of high-rate filtration, and the state of the industry around its use.

Author: David Pernitsky Author's Job Title: Vice President, Water Treatment

Email: david.pernitsky@stantec.com Phone: 14036058110

Organization: Stantec

Primary Job Duties: I lead Stantec's global drinking water treatment practice and am involved in WTP process selection, design, and operational troubleshooting. Am a chapter author and reviewer for update of AWWA's M37 Manual or Practice for Coagulation and Filtration Processes.

Related Prior Employment: 30 yrs of water treatment experience with several consulting firms in US and Canada as well as a 7-yr stint as chief water system troubleshooter for an operating energy company supporting the operation of potable and industrial water systems

Registrations or Certifications: PE in Alberta and Saskatchewan Canada, PE in California (Application pending review) Ph.D. Envir. Eng., University of Mass.. Amherst B.Sc. and M.Sc. Civil and Envir. Eng., University of Alberta

Kennewick 2023 Conference Program Schedule

2023 Conference Program Schedule

DRAFT - March 6, 2023

Assigned CEUS: Oregon, 2.0 Drinking Water; Washington, 2.0 Drinking Water

Attendees from Idaho will receive a certificate with an Oregon accreditation number per the Idaho Administrative Code Bureau of Occupational Licenses IDAPA 24.05.01.500 i. 0.4 Approved Courses. Those continuing education courses which are relevant and approved by the states of Nevada, Oregon, Montana, Utah, Wyoming, and Washington are deemed approved by the Board. (2-26-08)

Wednesday, May 3									
Morning	Morning Pre-Conference Seminar								
Room	A & B (cap 100)	C (cap 120)	D (cap 120)	E & F (cap 120)					
Hosting Committee		Treatment		Distribution					
Preconference Seminar		PFAS Solutions Part 1		A Comprehensive Look at Municipal Installation of High Density Polyethylene (HDPE) Pipe Part 1	ŀ	Hydraulic			
Moderator		Sean Thomson		Brian Murphy					
8:30		145-Treatment selection and design for PFAS management in a changing regulatory environment (30 min) Joanie Stultz		36a-An Overview of Construction Installation Methods (60 min)		16-Maxir Efficienc			
9:00		53-Developing a PFAS Treatment Approach (30 min) Mehrin Selimger		Peter Dyke					
9:30 - 9:45 Break									
9:45		66-PFAS Mitigation Strategy and Lessons Learned by a Regional Water Provider (30 min) Marshall Meyer		36b-Open Cut Installation (60 min)	3 Pr O	34-Dual C Bull Ru roject: M Dptimizini S			
10:15		69-Removal of PFAS in groundwater: practical lessons and forward-looking planning (30 min) Chris McMeen		Diew Widener		73-Levera Tools for F Water Sys			
10:45 - 11:00 Break									
11:00		60-In Search of PFAS (30 min) Alex Mofidi		36c-Horizontal Directional Drill (60	8 Ci 1	36-Distrib Conventio No Discha			
11:30		12-Planning and Design of 18 MGD IX PFAS Treatment in Colorado (30 min) Laurie Sullivan		min) Dan Landy		97-How Deman Models a m			

G (cap 130)	H (cap 130)
Engineering	
Modeling & Pumping	
Nick Augustus	
nizing Booster Station y (30 min) Jason King	
hallenges of Portland's n Filtration Pipelines inimizing Head loss and g Flow Control (30 min) pencer Adams	Beconved for Meet & Creet
ging Hydraulic Modeling Pump Selection in Closed tems (30 min) Chadwick Johnson	Reserved for Meet & Greet
ution System Flushing: nal, Unidirectional, and arge Methods (30 min) Dylan Bright	
Can I Make Sense of d Data, for Hydraulic and Everyone Else (30 in) Matt Huang	

Kennewick 2023 Conference Program Schedule

Afternoon	Afternoon Pre-Conference Seminar								
Room	A & B (cap 100)	C (cap 120)	D (cap 120)	E & F (cap 120)		G (cap 130)	H (cap 130)		
Hosting Committee		Research		Distribution		Engineering			
Preconference Seminar		PFAS Solutions Part 2		A Comprehensive Look at Municipal Installation of High Density Polyethylene (HDPE) Pipe Part 2		Reservoirs			
Moderator		Andrew Nishihara		Brian Murphy		Douglas Lane			
1:00		70-Communicating about PFAS While Maintaining Public Trust (30 min) Libby Barg-Bakke		36d-Pipe Bursting and Sliplining (60 min) Dan Landy	40-City of Kennewick Reservoir				
1:30		5-A PFAS Journey - Vancouver Approach to Widespread Source Detections (30 min) Tyler Clary				min) Erik Peterson			
2:00 - 2:15 Break									
2:15		136-Not-So-Forever Chemicals: Field Demonstration of PFAS Destruction by a Pilot-Scale Nanofiltration and UV- Sulfite Treatment Train (30 min) Charlie Liu		36e-Above Ground Installations (60 min) Drew Mueller		98-Keeping the Eggs in More than One Basket - One of the City of Beaverton's Plans for Post- Earthquake Water Supply (30 min) Tom Boland			
2:45		131-When PFAS is only half the battle: Treating multiple contaminants with a series of media (30 min) Stephen Timko						120-Rehabilitation Options for Aging Concrete Water Storage Reservoirs (30 min) Jamin Ankeny	Reserved for Meet & Greet
3:15 - 3:30 Break									
3:30		27-Thermal destruction of PFAS during full-scale reactivation of granular activated carbon from water treatment (30 min) Adam Redding		36f-Repair Methods for HDPE (60 min) Peter Dyke		128-Baffled by CT? How Anacortes used baffle design and clearwell redundancy to streamline compliance (30 min) Tara Randall			
4:00		24-Yorba Linda Water District Installs Largest Ion Exchange PFAS Water Treatment Plant in US (30 min) Kelsey Hakes		min) Peter Dyke		146-The Balance of Conservation and Storage (30 min) Michelle Johnson			

	Thursday, May 4								
Morning	Thursday Early Bird Session								
Room	A & B (cap 100)	C (cap 120)	D (cap 120)	E (cap 60)	F (cap 60)	G (cap 130)	H (cap 130)		
Hosting Committee	Utility Management	Research		Water Resources		Engineering	Distribution		
Moderator	Ann Hajnosz	Andrew Nishihara		Jacob Krall		Greg Loscher			
7:00	2-Improvise, Adapt and Overcome: Using Failure as an Asset (30 min) Dick Talley	149-PFAS Addressing State and Federal regulatory changes-what's		35-Water Supply Well Condition Assessments: Real-World Applications and Results (60 min)		94-Delivering Capital Projects: A Young Professional's Guide to	49-How to Manage an Aging Control Valve System (60		
7:30	91-Asset Management Culture and Workplan (30 min) Andy Tuchscher	next (60 min) Mike Meens		Panel Presentation facilitated by Kevin Lindsey		Specification Writing (60 min) Spencer Adams	min) Steve Causseaux		
Morning			Thurs	day Morning Technical Se	ession				
Room	A & B (cap 100)	C (cap 120)	D (cap 120)	E (cap 60)	F (cap 60)	G (cap 130)	H (cap 130)		
Hosting Committee	Utility Management	Research	Treatment	Water Resources	Diversity & Inclusion	Engineering	Distribution		
Moderator	Ann Hajnosz	Andrew Nishihara	Jolyn Leslie	Jacob Krall	Randy Black	Dan Schafar			
8:30	14-Building A Small Systems Support Network (30 min) Jamie Porter	152-Reframing the Conversation around Emerging Contaminants (30 min) Holly Tichenor	33-Gas Chlorine is Still Used for Disinfection - Designing for Safety (30 min) Stephen Nuss	39-Data Dashboards: Who, What, When, Where, Why, and How (30 min) Emma Martin	100-Retaining Talent a Panel	7-Permitting 101: Expectations And Strategies For Your Project (30 min) Sean Thomson	50-If Check Valves Were Cars:		
9:00	23-Mentoring: Still the Critical Path (30 min) Kimberly Kelsey	89-Impact of PFAS on Tacoma Water's Groundwater Supply and Corrosion Control Strategy (30 min) Beth Mende	82-Converting from Chlorine Gas to Sodium Hypochlorite at the Meadowlark Water Reclamation Facility (30 min) Heather Burns	143-Seeing the Future: Using GIS for Enhanced Planning and Forecasting of Well Maintenance and Life Cycle Costs (30 min) Kelsey Mach	Discussion (60 min) facilitated by Benedicte Diakubama	8-Planning for Success - Adding Resiliency to Water Supply via Horizontal Directional Drill (30 min) Kenneth Packard	tyle, Selection, Performance (60 min) Steve Causseaux		
9:30 - 9:45 Break									
9:45	118-Infrastructure Capital Funding Programs Panel Discussion:Program Updates,	113-Toxic Additives in Microplastics Desorb into Drinking Water Matrices (30 min) Husein Almuhtara	88-Improving Chemical Supply Resiliency - Transition from Gas to On-Site Hypochlorite Generation for a Large 1500 PPD System (30 min) Joshua Kennedy	83-Integrated Modeling to Optimize Ecological and Agricultural Water Supply Enhancement (30 min) Jason Keller	59-Filling your Bucket: Diverse Discussion Panel on Recruitment (60 min) facilitated by Asa Reyes- Chavez	65-Successfully Tackling High Risk Design: Lessons Learned from the WWSP's Construction of the Raw Water Facility Project (30 min) Jennifer Minton	54-What's the Big Deal with Big Pumps? (30 min) Daphne Marcyn		
10:15	Development (60 min) Chris McCord	107-Microplastics Removal in a Dynamic Coagulation-Flocculation- Sedimentation System (30 min) Robert Andrews	84-Round Tank in a Square Door: How to fit an OSHG System into an Existing WTP (30 min) Joanie Stultz	85-Pollutant Load Modeling Webtool for Source Water Protection (30 min) Jamie Feldman		Chavez	93-Developing an Effective Permitting Strategy for your Water Supply Project (30 min) Jennifer Miller	1-Water Loss Reduction Techniques (60 min) Mike Uthe	
10:45 - 11:00 Break									
11:00	30-Machine Learning / Artificial Intelligence (ML/AI) Applications	101-Machine Learning in Water Coagulation Optimization (30 min) Benedicte Diakubama	44-Successful Installation and Operation of a full-scale Hypolimnetic Oxygenation System for T&O Control (30 min) Daniel Mosiman	135-Using ESRI's GIS Technology to further Tacoma Water's AMI	117-An Equity Journey Begins at Tacoma Water (30 min) Rochelle Gandour-Rood	115-Dog River Pipeline: Replacing a 100-year-old Wooden Pipeline to	80-Condition Assessment of Large		
11:30	for Small Systems (60 min) Mike Grimm 124-Making Conventional Treatme Cutting Edge Technology - Proces Optimization Using Advanced Dat Analytics (30 min) Damon Roth	124-Making Conventional Treatment Cutting Edge Technology - Process Optimization Using Advanced Data Analytics (30 min) Damon Roth	102-Leveraging a Digital Twin to Implement Complex Control Logic at the 3Kings Water Treatment Plant (30 min) Stephanie McGregor	(Automated Metering Infrastructure) program (60 min) Andy Simpson	19-Everyone on Board: Advancing Equity Within Different Organizational Cultures (30 min) Nicki Pozos	Secure a Resilient Water Future (60 min) <mark>Brady Fuller</mark>	Diameter Pipe (60 min) Glenn Edgemon		
12:00 - 1:30				Vendor Lunch	-	-			

Kennewick 2023 Conference Program Schedule

Afternoon		Thursday Afternoon Technical Session						
Room	A & B (cap 100)	C (cap 120)	D (cap 120)	E (cap 60)	F (cap 60)	G (cap 130)	H (cap 130)	
Hosting Committee	Utility Management	Water Quality	Treatment	Water Resources	Public Information	Engineering	Distribution	
Moderator	Kim Reid	Emilia Blake	Spencer Adams	Kenny Janssen	Andrea Watson	Erika Murphy		
1:30	132-Environmental Justice and Water Equity Private Sector Alliance - Partnering with Utilities (30 min) Andrew Nishihara	71-The Changing Regulatory Picture of Manganese (30 min) Helene Baribeau	129-The Revitalization of Water Infrastructure: Modernizing and Expanding a 100-year-old Water Treatment Plant (30 min) Emily Palmer	37-Groundwater Level Declines: Not Just an Odessa Groundwater Management Area Challenge (30 min) Kevin Lindsey 68-A Study in Proactive Water Supply Planning (30 min) Kelsey Mach	58-What could go wrong? The challenges of communicating during construction (60 min) Marlys Mock	56-Incorporating Additional Resilience Measures through Operational and System Control Strategies now that the Design is Complete for the Willamette Water Supply System (30 min) Mike Britch	3-Fire Hydrant Maintenance, Operation and iHydrant (30 min) Vaughn Barber	
2:00	21-Public Private Partnership is Micro Hydro Installations (30 min) Sam Shipp	62-How Widespread is Manganese in Drinking Water? (30 min) Andy Eaton	126-Evaluation of Membrane Technologies and Options for Meeting the Ultimate Capacity Demand at Kennewick WTP (30 min) Pierre Kwan			Marlys Mock	67-Trailer to Tap: Maintaining a City's Water Supply While Replacing it's 100-year Old WTP (30 min) Danielle Kalmbach	13-Meter Health Analytics: The Importance of Large Meter to Water Districts Bottom Lines and Communities At Large Performance (30 min) Quinn Jackson-Elliott
2:30 - 2:45 Break								
2:45	32-City of Vancouver's Water Resiliency Strategy - Using different financial levers to raise revenues. (30 min) Chris Malone	63-Comparing Manganese Treatment Technologies (30 min) Philip Brandhuber	144-Finding the Best Option for Upgrading JWC's Chlorine Gas Disinfection System (30 min) Connor Mancosky	51-All's Well that Ends Well Implementing Eugene Water and Electric Board's Emergency Well Program (60 min) Nathan Endicott	15-That was Then, This is Now: Communications in an Everchanging COVID Environment (30 min) Tacy Steele	87-Seismically Resilient Transformation of the Medford Water Duff WTP (30 min) Joshua Kennedy	31-Setting Up for Success: The City of Hillsboro's Comprehensive Approach to Pipeline Replacement Project Prioritization (30 min) Preston Love	
3:15	26-Financing the Cascade Groundwater Development Program with a WIFIA Loan and Revenue Bonds (30 min) Kari Duncan	55-Legacy Manganese Issues in Distribution Systems (30 min) Andrew Hill	76-High Rate Filtration Pilot Study and the impacts of the Chlorine Shortage (30 min) Tessora Young		Electric Board's Emergency Well Program (60 min) Nathan Endicott	122-Customer Information System Conversions: Lessons Learned (60 min) Andrea Watson	142-Installing Earthquake Resilient Water Mains in Constrained Corridors (30 min) Sarah Merrill	127-Elevated Water Storage Tank Assessment and Rehabilitation – Extending the Service Life of our most Visible Infrastructure (30 min) Matt Hickey
3:45 - 4:00 Break								
4:00	162-Asset Management Plan: Lessons Learned (30 min) Chris Guest	57-Main Cleaning and Control Strategies for Legacy Manganese (30 min) Andrew Hill	156-Enhancing Drinking Water	155-Groundwater Depletion and Municipal Supply Resiliency in the Columbia Basin, Washington (30 min) Walter Burt	141-Engaging the Community in the Affordability Challenge (60	116-The Cascade Groundwater Alliance: Groundwater Development Project Program	47-77,000 Service Lines Identified in 1,000 days - GIS to the Rescue (30 min) Patrick Craney	
4:30 160-Le to Des	160-Lessons Learned from School T51-Manganese Landscape in Events (60 min) Lynn Step 160-Lessons Learned from School Washington: Occurrence, Events (60 min) Lynn Step to Design (30 min) Michelle Horio Challenges, and Regulatory Perspective (30 min) Jolyn Leslie	Events (60 min) Lynn Stephens	158-Managing for the Future: Building Drought Resiliency and Reliability into Municipal Water Supply (30 min) Tyson Carlson	min) Libby Barg-Bakke	Overview Update and Package 1 Construction (60 min) Brian Ginter	90-Challenges extending Earthquakes Resilience to hydrants and water services (30 min) Daniel Shafar		

	Friday, May 5							
Morning				Friday Early Bird Session				
Room	A & B (cap 100)	C (cap 120)	D (cap 120)	E (cap 60)	F (cap 60)	G (cap 130)	H (cap 130)	
Hosting Committee	Utility Management	Cross Connection			Diversity & Inclusion	Engineering	Distribution	
Moderator	Kimberly Kelsey	Jessica Shaw			Randy Black	Greg Loscher		
7:00	28-The Future Ain't What it Used	109-Game on! Come Roll the Dice			18-Responsive Support for Disadvantaged Businesses (30 min) Jessie Maran	138-No Exceptions Taken - Construction Submittal Review 101 (30 min) Josh Yung	29-Use of Fusible PVC in Adverse	
7:30	to Be: Dealing with uncertainty in climate projections (60 min) John Phillips	on Water Complaints (60 min) Darci Mattioda			108-Improving Disability and Language Access (30 min) Sarah Messier	20-Engineering Departments - Going Digital. Moving beyond spreadsheets, blueprints and paper maps (30 min) Stephen Dennehy	expansive soils, slope stability and for seismic resiliency (60 min) Jeffrey Rosenlund	
Morning			Frid	ay Morning Technical Ses	ssion			
Hosting Committee	Utility Management	Cross Connection	Treatment	Water Resources	Conservation	Engineering	Water Quality & Distribution	
Moderator	Kimberly Kelsey	Jessica Shaw	Scott Allis	Andrew Austreng	Dan Denning	Mohammad Ahmad	Emilia Blake	
8:15	17-Understand The Tools in Being	163-Fire Sprinkler System	64-Coagulation 101 (30 min) David Pernitsky	48-Developing a Strategic Source Water Protection Plan for Oregon's Largest Watershed (30 min) Christina Walter	11- Evolving Approaches to Public Outreach on a Regional Scale (30 min) Bonny Cushman	77-Upgrading Pendleton's Infrastructure to Support Development at the Top of Its Water System (30 min) Taylor Spencer	99-Navigating the New Lead and Copper Rule Requirements & Leveraging Available Funding (30 min) Lauren Wasserstrom	
8:45	a Good leader (60 min) Randy Black	Standards (60 min) Gary Honald	9-How Long is Too Long? Evaluating Extended Biofilter Shutdown at Hayden Bridge (WRF #4984) (30 min) Michael McKie	81-Development of a Watershed Protection, Monitoring, and Outreach Plan for the Willamette Intake Facilities Commission (30 min) Jacob Krall	10-Curtail Your Enthusiasm: How we exercised our conservation management plans and other regional projects (30 min) Bonny Cushman	140-Evaluation and Improvements Design of the Cloud Cap Inn Water System, Mt Hood, Oregon (30 min) Alex Bargmeyer	130-Preparing for LCRR Compliance Part I: Service Line Material Inventory (30 min) Helene Baribeau	
9:15-9:30 Break								
9:30	4-Emergency! Who's In Charge? (60 min) Brian Murphy) 4-Emergency! Who's In Charge?	103-Reviewing Building Plans for	137-Deep-Bed Filters: State of the Art and Lessons Learned (30 min) David Pernitsky	166-Forecasting Daily Streamflow to Maintain a Critical Minimum Streamflow Target (30 min) Kevin Boggs	92-Seeing Purple: Design and Construction of the City of Beauerton's Non-notable Water	121-ShakeAlert and Water Systems: What Would You Do With 10 Seconds of Earthquake Early Warning? (30 min) Kelly Missett	125-Preparing for LCRR Compliance Part II: Beyond the Service Line Material Inventory (30 min) Damon Roth
10:00		Jessica Shaw	95-Modified Tracer Testing Methodology for Long Detention Times (30 min) Andrew Nishihara	61-Source Water Protection Planning in an Agricultural Watershed (30 min) Joanna Lewis	System for Municipal Irrigation (60 min) Jason Melady	159-A scenario approach to supply system planning positions Portland Water Bureau for a sustainable future (30 min) Mark Anderson	72-Lead and Copper Rule Revisions: Find-and- Fix Assessments, Even Without Lead Pipes. (30 min) Virpi Salo-Zieman	
10:30 - 11:00 Break								
11:00	150-Building Effective and Efficient Project Management Teams (30 min) Rachel McGinn	105-Building a Robust Cross Connection Control Program (60	96-Ozone Disinfection in Drinking Water: Back to the Basics (30 min) Spencer Adams	52-Tualatin River Drinking Water Source Area Impoundment Identification and Prioritization (30 min) Austin Orr	Toolkit: building organizational capacity to identify, assess and mitigate water conservation service inequities (30 min) Maoloud Dabab	25-Funding Your Next Risk Mitigation Project (30 min) Sarah Lingley - suggested	134-Guidance for Using Pipe Rigs to Inform Lead and Copper Corrosion Control Treatment Decisions - Program Drivers (30 min) Melinda Friedman	
11:30	153-Aligning Strategic Priorities and Level of Service to Improve Project Outreach Effectiveness (30 min) Holly Tichenor	min) Brian McDaniel	114-Major Ozone Equipment Replacement: How to Increase Resiliency of Your Ozone System Amidst Supply Chain Issues (30 min) Kim Ervin	78-Upper Tualatin Wildfire Protection Plan (30 min) Jacob Krall	165-Integrated conservation planning and targeted implementation (30 min) Dan Denning	139-Diving into Water Rates and Project Financing - end of PAYGO? (30 min) Lusan Burke	133-Guidance for Using Pipe Rigs to Inform Lead and Copper Corrosion Control Treatment Decisions - Design (30 min) Pierre Kwan	
12:00 - 1:30				Awards Lunch				

Afternoon	Friday Afternoon Technical Session								
Room	A & B (cap 100)	C (cap 120)	D (cap 120)	E (cap 60)	F (cap 60)	G (cap 130)	H (cap 130)		
Hosting Committee			Treatment				Water Quality & Distribution		
Moderator			Scott Allis				Emilia Blake		
1:30			154-Bull Run water: Investigating coagulation, flocculation and				42-Oversight and Communication for Implementing Improved Corrosion Control Treatment (30 min) Yone Akagi		
2:00			sedimentation (60 min) Mojtaba Azadiaghdam				41-Regulatory, In Home, and Installation Monitoring for Implementing Improved Corrosion Control Treatment (30 min) Mac Gifford		
2:30 - 2:45 Break									
2:45			112-Advances and Challenges in Microplastic Sampling and Analysis of Drinking Waters (30 min) Robert Andrews				46-Rockwood Pipe Loop Study: Pilot Testing Challenges for Corrosion Control Optimization (30 min) Aaron Gress		
3:15			111-Interaction of Microplastics with Per- and Polyfluoroalkyl Substances (PFAS) and Microcystins in Drinking Water (30 min) Husein Almuhtaram				104-Setting the Standard: City of Lacey pH Treatment Projects (30 min) Nathan Rostad		
3:45 - 4:00 Break									
4:00			161-Approaches for Accelerating the Design and Construction of a PFAS Treatment Facility (30 min) Amy Gao - suggested				79-Water Quality: Seriously Consider the System (30 min) Chris McMeen		
4:30			123-Nitrate Treatment for Groundwater Wells (30 min) Jeganathan				119-Using Bench-Scale Testing and Field Activities to Identify Distribution System Destabilization Risks from Water Supply and Treatment Changes (30 min) Alex Mofidi		