

**Special Program info:**

# **PNCWA 2013**

**Building Professional Excellence in Water Quality™**

## **Preconference Workshops (Sun.)**

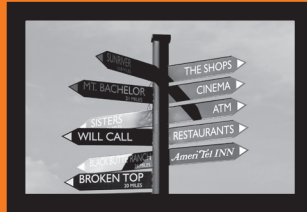
Annual Conference & Exhibition

September 14-18

The Riverhouse

**BEND, OR**

## **Facility Tours**



## **Technical Program**

**Mon. -Wed.**

**PNCWA**  
Pacific Northwest Clean Water Association



**wef**  
member association

# Pre-conference Workshops

Attendance only with separate registration—not included in regular conference registration

## Natural Treatment Systems – Positive Distractions in a Turbulent World

**Sunday September 15** 9:00 AM – 5:00 PM

Cost (lunch included): \$100 Members, \$115 Nonmembers

**Moderators:** Diane Taniguchi-Dennis, *Clean Water Services*  
Bob Baumgartner, *Clean Water Services*

**Speakers:** Greg Aldrich, *Oregon Dept. of Environmental Quality*  
Chris Bailey, *City of Albany*  
Bob Bastian, *U.S. EPA Office of Wastewater Mgmt.*  
Keith Bowers, *Biohabitats*  
Bob Knight, *Wetland Solutions*  
Mark Madison, *CH2M HILL*  
Craig Massie, *CH2M HILL*  
Peter Munoz, *Biohabitats*  
Scott Wallace, *Naturally Wallace*

Natural treatment systems have become an effective and efficient method of enhancing water quality and habitat not only in Oregon, but throughout many parts of North America and other parts of the world. Over the past decade, the Pacific Northwest, and Oregon in particular, has seen a steady increase in the implementation of natural treatment systems to treat stormwater and wastewater in order to meet permitted discharge criteria. As the number of natural treatment systems being considered for implementation increases in the Northwest, it is critical that our community of practice share lessons learned and best practices to ensure the evolution of this technology progresses for the benefit of all.

This full-day workshop features some of the leading experts on natural treatment systems and owners of completed natural treatment system projects, and will provide a broad perspective of the different facets that go into planning, designing, and gaining public and regulatory acceptance for using natural treatment systems. Through sharing their experiences, the workshop presenters will help attendees bridge the gap between engineering, ecology, and developing public amenities that improve water quality and provide habitat and open space. The workshop speakers will provide attendees with the following:

- Local, national and international perspectives on natural treatment systems through specific project examples
- Summaries of technologies and techniques available to scientists and engineers
- Regulatory opportunities associated with natural treatment systems
- Techniques that have been successfully used to connect the public to natural treatment systems

- Construction and project delivery techniques and best practices for natural treatment systems
- An overview of the vision for Fernhill Wetlands, a project currently under development, in Forest Grove, Oregon

The workshop will be concluded with a panel discussion and question and answer session.

## Asset Management: Understanding the How and Why

**Sunday September 15** 9:00 AM – 5:00 PM

Cost (lunch included): \$100 Members, \$115 Nonmembers

Attendance limited to 25 persons

**Sponsored by:** PNCWA Asset Management Committee

**Moderator:** Marc Yarlott, *Veolia Water North America*

**Speakers:** Scott Bash, *HDR*  
Melissa Demsky, *Veolia Water North America*  
Guy Graham, *City of Lake Oswego*  
Kimberley Herrala, *Veolia Water North America*  
Terry Nelson, *Inspiraworks*  
Doug Stewart, *Kennedy Jenks*

This workshop will demonstrate how to start and manage an effective Asset Management Program. Attendees will learn key messages to take back to their management on the rationale behind starting an Asset Management Program at all organizational levels. The workshop will address the following key questions:

1. How does a municipality get started on an Asset Management Program?
2. What data should be collected and what is the framework for that data collection?
3. How to demonstrate value to the council or board of directors

The presentation will be in the form of a series of four case studies of asset management program related experiences followed by two interactive role playing and team work exercises. The team exercises will help attendees understand the dynamics and objectives of different players in the development of an Asset Management strategy and plan. Teams will role play as different groups of up to 4 individuals as operations, maintenance, IT, purchasing/contracts, management, finance, board of commissioners, etc. This workshop will be very participatory with the goal of providing basic understanding of the elements of an asset management plan and tools to take back to your desk to get started. The examples used in the team exercises can be used by attendees to help build a basis for implementing an Asset Management Program at their respective organizations.

## Side Stream Treatment for Nutrient Removal and Recovery

Sunday September 15

1:00 PM – 5:00 PM

Cost: \$60 Members, \$75 Nonmembers

**Sponsored by:** PNCWA Emerging Technologies Committee

**Moderators:** Susanna Leung, *Carollo Engineers*  
Richard Kelly, *Brown and Caldwell*

**Speakers:** Bill Benko, *PE, City of Boise*  
Henryk Melcer, *Ph.D., PE, Brown and Caldwell*  
Peter Schauer, *PE, Clean Water Services*  
David Stensel, *Ph.D., PE, University of Washington*  
Steve Walker, *Carollo Engineers*

Local regulatory agencies in the Pacific Northwest continue to implement new and more stringent effluent nutrient limits on municipal and industrial wastewater treatment facilities. With these same municipalities contending with increasingly tight budgets, finding treatment technologies that are cost-effective at reducing effluent nutrients is becoming essential. Some municipalities are finding economically viable technologies providing targeted removal in plant internal biosolids handling recycle streams, mainly from dewatering processes after anaerobic digestion. These recycle streams, also known as side streams, often contain high concentrations of the regulated nutrients nitrogen and phosphorus. The load associated with the nutrients in dewatering side streams can easily exceed 25 percent of the total nitrogen or phosphorus load to a plant. Given the highly concentrated nutrient loads and easily isolatable nature of side streams, they have become a “low hanging fruit” for implementing low-cost, and in some instances revenue generating technologies for removing and recovering a significant portion of nutrient from wastewater treatment plant discharges.

The purpose of this workshop will be to present an overview of innovative side stream treatment technologies that are used today and look at several case studies of these installations. The learning objective of this course would be for operators, engineers, utility managers, and policy makers to gain a better understanding of what side stream treatment technologies are available, the benefits and drawbacks of each, how they could be implemented, and a look at the operating data/resultant economics. This course will be taught using a combination of lecture-style presentations by national and local experts presenting both technology overviews and case studies.

The workshop will be concluded with a round table discussion to provide time for attendees to provide feedback to the expert presenters, answer questions, and participate in general a discussion of side stream treatment technologies.

## Where Activated Sludge Design Meets Operations

Sunday September 15

1:00 PM – 5:00 PM

Cost: \$60 Members, \$75 Nonmembers

**Sponsored by:** PNCWA Plant Operations and Maintenance Committee

**Moderator:** Richard Finger, *King County Wastewater Treatment Division (retired)*

**Speaker:** Eric Wahlberg, *PE and former WWTP operator, Brown and Caldwell*

Activated sludge is, by far, the most commonly used wastewater treatment technology. Effluent permits are getting increasingly more stringent at the same time cash-strapped ratepayers are demanding greater cost effectiveness at municipally-owned wastewater treatment plants. As a result, the level of sophistication being designed into activated sludge wastewater treatment plants is considerable. The wastewater treatment profession is accomplishing things with the activated sludge system today that the industry could not have imagined in 1978 when the guest speaker, Eric Wahlberg, started as an operator for the Silverthorne/Dillon Joint Sewer Authority. Never has the need for operators and engineers to come together as a cohesive team been greater.

The focal point of the workshop is the equation used by activated sludge design engineers. The equation is presented in terms consistent with every day operation of the process. Doing so provides engineers insight into activated sludge operation and operators a more directed appreciation of process control. The overarching objective of this workshop is to improve and stabilize activated sludge performance. With increased performance stability, opportunities for controlling operational costs are more numerous and more easily implemented.

The workshop will incorporate several question and answer sessions as the content is presented.

**More information about the preconference workshops including presenter bios is available at [www.pncwa.org/pncwa2013home](http://www.pncwa.org/pncwa2013home).**

## Facility Tours

### TOUR FAQs

**No preregistration required.**

*First come. First served.*

- No additional cost to conference attendees
- CEUs available based on tour presentation time



*Juniper Ridge Hydroelectric Project*



*Inside the plant at Juniper Ridge*

### Juniper Ridge Hydroelectric Project

**Monday September 16**

**1:15 PM – 3:45 PM**

The Juniper Ridge Hydroelectric project is a \$22M EPC (Engineer, Procure, Construct) project which constructed a hydroelectric project on an existing Central Oregon Irrigation District Canal. This tour will visit the hydroelectric powerhouse, review the features of the system, and discuss the process used to plan and implement this project.

The project consists of 2.5 miles of 108" steel penstock pipe placed within and beneath the existing irrigation canal system. The penstock entrance consists of a rock excavated forebay, thirty foot tall buttress wall intake structure with a steel trash rack system, and an emergency spillway. The 108" penstock pipe provides 110 feet head to the 5MW vertical turbine unit located at the hydroelectric power plant. The powerhouse is

constructed 27 feet below grade with mass concrete encased draft tube and Francis turbine; it also extends another 25 feet above grade to enclose the generator, hydraulic operating system, 84" isolating butterfly valve, and associated electrical components.

Adjacent to the power house is a bypass structure that will divert irrigation flows around the turbine and generator, should the flow exceed plant capacity or a unit outage is required during the irrigation season. The bypass structure contains a 78" butterfly isolation valve and a 78" flanged coupling adaptor, and discharges into an energy dissipation pool through a hydraulically operated 42" fixed cone jet valve. Work on this project also includes an electrical substation, electrical switch yard, and tailrace discharge structure connection to the existing canal system.

## PNCWA Mission Statement

Pacific Northwest Clean Water Association (PNCWA) is dedicated to protecting and enhancing water resources in the states of Idaho, Oregon and Washington. To achieve this we promote the professional development of our members, the dissemination of information to the public and policy makers, and the advancement of science and technology needed to protect human health and the environment.



Bend WRF

## City of Bend Water Reclamation Facility

Tuesday September 17

1:15 PM – 3:45 PM

The City of Bend’s Water Reclamation Facility (WRF) is a conventional activated sludge plant built in 1980, with an average daily capacity of 6.0 million gallons. Presently, the City experiences an average flow of 5.5 million gallons per day. The water reclamation system is comprised of approximately 424 miles of sanitary sewer lines, 336 pump stations and serves over 27,000 customers. The WRF produces Class A recycled water, which is provided to the Pronghorn signature golf courses.

Currently, the WRF is under construction for a \$31.5M major expansion to meet 2030 Facility Plan requirements. Upgrades to the facility include the installation of a new primary clarifier, primary sludge pumping improvements, implementation of a new secondary treatment process, construction of a new aeration basin, new turbo blowers, SCADA infrastructure, and incorporation of UV disinfection.

This tour will focus on a new process implementation that features an integrated fixed-film activated sludge (IFAS) process. IFAS offers the unique opportunity to provide a construction-free phasing approach for future capacity. Once this initial modification to the aeration basins is complete, the amount of IFAS media included in the reactors will determine the associated capacity of the WRF. This construction-free phasing approach allows for a “pay as you go” funding opportunity. After the initial construction phase, future capacity can be incorporated into the facility by simply purchasing additional media. IFAS offers the nitrification benefits inherent to biofilm reactors, with increased stability and improved performance during peak influent loading.



Redmond WPCF

## Redmond Water Pollution Control Facility

Wednesday September 18

8:00 AM – 10:30 AM

The City of Redmond operates a 2.99 MGD (design) Water Pollution Control Facility (WPCF). The WPCF currently serves a population of 28,000, and over 9,000 customers. The wastewater division has 137 miles of sewer mains and 13 sewage lift stations. The WPCF utilizes an oxidation ditch process, which produces Class C Recycled Water. The City operates an irrigation site, farming 146 acres of alfalfa and orchard grass, utilizing recycled water and biosolids as a soil amendment.

This tour will feature the energy efficiency projects that Redmond has implemented and discuss the current Energy Savings Performance Contract (ESPC) process the City is using to identify and implement additional energy savings measures. The City has recently entered into a contract with an Energy Service Contractor (ESCO) to review all City facilities, identify, and implement energy savings measures. Information on this program and process will be provided. The tour will also feature past energy savings projects, including: installation of a turbo blower, lift station pump replacement, motor efficiency improvements, and lighting upgrades.

### Monday Morning - September 16

7:00 - 5:30	Registration		
8:00 - 10:00	Opening Session		
10:00 - 10:30	Break & Ops Challenge Viewing Time		
10:00 - 4:00	4-Person Operations Challenge		
	<b>Session 1A Modeling and Simulation</b>	<b>Session 2A Energy Efficiency</b>	<b>Session 3A Biosolids</b>
10:30 - 11:15	The Science of Activated Sludge Mixing Improves on the Rule of Thumb <i>Edward Wicklein, Carollo Engineers</i>	When Your High Speed Turbine Blows...UP! <i>Jeffrey Zahller, HDR Engineering</i>	Solids Management at the Lake Stevens MBR Treatment Facility <i>John Wilson, Gray &amp; Osborne</i>
11:15 - 12:00	CFD Modeling of the Effluent Mixing Zone from the Seattle Steam Outfall <i>Fangbiao Lin, Stantec</i>	The Use of High Performance Coating Systems to Optimize and Enhance Energy Efficiency of Centrifugal Pumps <i>Alan Evans, A. W. Chesterton Company</i>	Optimizing Dewatering Can Save Big Bucks <i>Steve Walker, Carollo Engineers</i>

### Monday Afternoon - September 16

12:00 - 1:15	Networking Lunch		
	<b>Modeling and Simulation: Collections</b>		
1:15 - 2:00	Re-evaluating Sanitary Sewer Design Storm Selection to Meet Regulatory and Level of Service Objectives <i>Andrew Braun, Clean Water Services</i>	Lessons Learned from an Energy Conservation Improvements Project for the City of Blaine LPWRF <i>Xiaomo (Molly) Du, HDR Engineering</i>	Transitioning from Batch to Continuous Solids Processing to Optimize Plant Performance <i>Tim Scott, Salmon Creek WWTP</i>
2:00 - 2:45	Long Term Simulation for Determining Level of Service, a case study from the City of Everett <i>Eric Habermeyer, HDR Engineering</i>	Incentives to Blow Hot Air: Durham Facility Turbo Blower Installation <i>Tyler Anderson, Kennedy/Jenks Consultants</i>	Evolution of Biosolids Drying Technologies and Energy Utilization Considerations <i>Tim Bauer, CH2M HILL</i>
2:45 - 3:00	Break		
	<b>Session 1B Mentorship</b>	<b>Session 2B Nutrient Removal</b>	<b>Session 3B Digestion</b>
3:00 - 3:45	Building Leadership Presence <i>Nicki Pozos, HDR Engineering</i>	Phosphorus Sorption-Transport Modeling of Subsurface Sewage Disposal Systems for Surface Water Protection <i>Michael Cook and A.J. Maupin, Idaho Dept. of Environmental Quality</i>	Development and Semiworks Scale Demonstration of a Continuous Thermal Hydrolysis Process for Treatment of Particulate Organic Wastes <i>John Lee, CH2M HILL</i>
3:45 - 4:30	Mentoring: Effective Utilization of an Underutilized Strategic Tool for Professional and Organizational Growth <i>Lois D. Cohen, Lois D. Cohen Associates</i>	Pioneering the Boundaries of Low Effluent Phosphorus with Sustainable Biological Treatment <i>Haley Falconer, HDR Engineering</i>	A Full-Scale Case Study of Rapid Volume Expansion of Digester Contents <i>Tom Chapman, Brown and Caldwell</i>
4:30 - 5:15	Attracting, Engaging, and Retaining Young Professionals <i>Michael J. Lubovich, Parametrix</i>	Sustainable Operating Practices for Achieving Low Phosphorus Effluents <i>Mario Benisch, HDR Engineering</i>	Digestion Improvements at City of Ellensburg Optimized to Mitigate Multiple Operational Impacts <i>Alan Straub, Carollo Engineers</i>
5:00 - 7:00	Manufacturers Reception—Exhibit Hall		
7:00 - 8:00	Monday Night Dinner		
8:00 - 11:30	Networking Night (hosted by PNCWA Young Professionals - offsite)		

## Monday Night Social Event – Open to All!

The Young Professionals group would like to invite all conference attendees to this event hosted at the Deschutes Brewery starting at 8:00 PM! Take the opportunity to network with young professionals, agency representatives, clients, contractors, consultants and PNCWA officers. It will be a great time to work on your Twitter Contest points and those in attendance will get a chance to win raffle prizes. Shuttles provided to/from downtown 6:00 PM–midnight.

Session 4A Reuse	Session 5A Asset Management: Collections	Session 6 Public Education
City of Hermiston - Recycled Water Project (or was it?) <i>Bradley Bogus, Tetra Tech</i>	Maintaining High Quality in Expanding Collection System Databases <i>Edward Speer, CDM Smith</i>	Community Decision Making in the Development of Bend's Sewer Collection System Master Plan (followed by panel) John Cowan, NuAlchemy, LLC; Tom Hickmann, City of Bend  Panel Discussion: Elizabeth Barg, Barney & Worth, Moderator; Tom Hickmann, City of Bend; John Cowan, NuAlchemy, LLC; David Stangel, Murray Smith & Associates
Water Treatment Compliance for Dissolved Metals, Nutrients, and other Anions <i>Mark Lopp, Blue Water Technologies</i>	Bend's Most Critical Asset - Condition Assessment of the Plant Interceptor <i>Robert Lee, Brown and Caldwell; Aaron Collett, City of Bend Public Works</i>	

From the Flintstones to the Jetsons: The Evolution of Wastewater Treatment and Beyond in Dundee Oregon <i>Michael Humm, Kennedy/Jenks Consultants</i>	Optimal R&R Planning Using Advanced Quantified Risk Approach for Distribution Pipe <i>Kurt Vause, StreamlineAM</i>	Advisory Groups, Surveys, and Other Adventures in Community Dialogue: Groundwater Recharge and Emerging Contaminants <i>Ben McConkey, LOTT Clean Water Alliance</i>
Double Duty UV Disinfection System at Bend WWTF: Treating Both Secondary Effluent and Filtered Effluent (Class A Reuse Water) with the Same System <i>Gregg Thompson, CH2M HILL</i>	The City of Sweet Home's I/I Abatement Program - A Picture of Success <i>Robert Lee, Brown and Caldwell</i>	How to Talk About Rate Increases with the Community and Policymakers <i>J. Michael Read, Oak Lodge Sanitary District</i>

Session 4B Emerging Contaminants	Session 5B Asset Management	
Water Reclamation Advanced Treatments Costs Associated with Trace Organic Contaminant Removal <i>Jean F. Debroux, Kennedy/Jenks Consultants</i>	A Day in the Life of an Asset <i>Marc Yarlott, Veolia Water North America</i>	Working Close to Homes and in the Rights-of-Way: There is More to Engineering than the Design <i>Vicki Sironen, HDR Engineering; Shahrazad Namini and Monica Van Der Vieren, King County</i>
Modeling the Fate and Transformation of Estrogens across Wastewater Treatment Plants <i>Mariko Lust, University of Washington</i>	Creating Information Value Chains to Support Asset Management <i>Tina Miller, StreamlineAM</i>	Location, Location, Location – Rebuilding a Wastewater Pump Station In the Middle of a Pedestrian-Oriented, Thriving Downtown <i>Kevin Goss, Tetra Tech</i>
The Impact of Anaerobic Digestion on Pharmaceuticals in Biosolids: A Bench Scale Study <i>Ryan Rehder, Mountain Waterworks</i>	Taking Criticality Analysis to the Next Level <i>Tacoma Zach, Uberlytics</i>	Connecting with Schools <i>Brett Laney and Ely Teragli, Clean Water Services</i>

## CEUs (requested)

– Up to 1.7 for the main conference

– Up to 2.1 to 2.4 with preconference workshop (depending on workshop chosen)

*Separate registration is required for pre-conference workshops – not included in regular conference registration.*

**Tuesday Morning - September 17**

7:00 - 5:30	Registration		
7:00 - 8:00	Operators Breakfast		
	<b>Session 7 Utility Management</b>	<b>Session 8 Energy Recovery</b>	<b>Session 9 Sustainability</b>
8:00 - 8:45	<b>Predicting the Future—Selecting Level of Treatment, Biological Treatment and Side Stream Treatment Processes in the Face of Unknown Effluent Limitations</b> <i>Adam Klein, Brown and Caldwell</i>	<b>Heat and Power Generation from Digester Gas at the West Point Treatment Plant</b> <i>Susan Hildreth, King County Wastewater Treatment Division</i>	<b>From Grey to Green: Making Water Infrastructure Sustainable in the 21<sup>st</sup> Century</b> <i>James Clark, Black &amp; Veatch</i>
8:45 - 9:30	<b>Wastewater Agency Response Network Overview</b> <i>Neil Kennedy, Tualatin Valley Water District</i>	<b>Waste Heat Recovery from Treated Wastewater</b> <i>Jennifer Strehler, CDM Smith</i>	<b>For Better or For Worse - Paperless Bidding and Construction Management Services</b> <i>Jon Baune, J-U-B Engineers</i>
9:30 - 10:30	Break - Exhibit Hall		
10:30 - 11:15	<b>The City of Bremerton's Approach to Optimize Capital Improvement Plan Dollars and Maximize Revenue Streams</b> <i>Chal Martin, City of Bremerton Public Works Department</i>	<b>Best Practices for Building a Successful Biogas Utilization Program</b> <i>Lynne Chicoine, CH2M HILL</i>	<b>Finding the Perfect Fit: An Overview of Blower Technologies</b> <i>Chris Livingston, HSI, Part of Atlas Copco</i>
11:15 - 12:00	<b>Preparation of Operations and Maintenance Manuals for Domestic Wastewater Treatment Facilities</b> <i>Jon Gasik, Oregon Dept. of Environmental Quality</i>	<b>Nitrate and Nitrite Monitoring in Wastewater Processes for Advanced Control and Monitoring</b> <i>Justin Smith Irving, s-can Measuring Systems LLC</i>	<b>Bend WRF: Secondary Expansion Project; Sustainability in Design</b> <i>Jim Wodrich and Scott Thompson, City of Bend; Brady Fuller, CH2M HILL</i>
12:00 - 1:15	Networking Lunch		

**Tuesday Afternoon - September 17**

12:00 - 1:15	Networking Lunch		
	<b>Session 13 Stormwater</b>	<b>Session 14 Energy Recovery</b>	<b>Session 15 Climate Science</b>
1:15 - 2:00	<b>Innovative Stream Channel Rehabilitation Design Solutions Required for Compliance with Washington Suburban Sanitary Commission SSO Consent Decree</b> <i>Lawrence Magura, Black &amp; Veatch</i>	<b>Using Recovered Heat to Economically Produce Class A Biosolids</b> <i>Frank Dick, City of Vancouver WA</i>	<b>Mainstreaming Climate Change</b> <i>Invited Guest Speaker Paul Fleming, Seattle Public Utilities</i>
2:00 - 2:45	<b>Stormwater Regulations Update – From both Washingtons</b> <i>Nathan Hardebeck, SoundEarth Strategies</i>	<b>Biogas...What is the future? Biomethane as a Transportation Fuel</b> <i>Tony Schilling, Unison Solutions</i>	<b>Assessing the Vulnerability of Wastewater Facilities to Sea-Level Rise</b> <i>John Phillips, King County Wastewater Treatment Division</i>
2:45 - 3:00	Break		
3:00 - 3:45	<b>Improving Stormwater Standards for Hydromodification - Gresham's Healthy Watersheds Approach</b> <i>Jennifer Belknap Williamson, City of Gresham OR</i>	<b>To Build or Not to Build (a FOG receiving facility)? That was the City's question.</b> <i>Thomas Chapman and Christopher Muller, Brown and Caldwell</i>	<b>Pacific Northwest Streamflow and Precipitation Trends</b> <i>Charles Luce, US Forest Service</i>
3:45- 4:30	<b>Media Cartridge Filter Maintenance Frequency Testing</b> <i>Jay Holtz, Clean Water Services</i>	<b>Wastewater and Organic Waste to Bioenergy</b> <i>Dave Parry, CDM Smith</i>	<b>Developing A Program to Evaluate Climate Change Impacts</b> <i>John Dummer, Clean Water Services</i>
4:30 - 5:15	<b>Optimizing O&amp;M for Public and Private Green Infrastructure</b> <i>Jennifer Belknap Williamson, City of Gresham OR</i>	<b>A Demonstration of Food Waste Co-digestion at the City of Tacoma, WA</b> <i>Christopher Muller, Brown and Caldwell</i>	<b>Applying Climate Change Projections to Inform Public Water Utility Planning</b> <i>Katherine Hegevisch, University of Idaho</i>
5:15 - 7:00	Exhibit Hall Closing Reception		
7:00 - 9:00	PNCWA Awards Banquet		



Session 10 Nutrient Removal	Session 11 Collections	Session 12 Natural Treatment Systems
Energy Reduction and Improved Nutrient Removal through Model Based Feed-Forward Process Control <i>Tito Stahl, BioChem Technology</i>	87 <sup>th</sup> Ave at Canyon Road: Improving natural stream functions while protecting sanitary conveyance <i>Jadene Stensland, Clean Water Services</i>	An Industrial Municipal Partnership to Treat Wastewater Using Engineered Wetlands <i>Heather Slocum, City of Albany</i>
Yakima Washington Struvite System <i>Dan Barbeau, Pharmer Engineering; Dean Smith, City of Yakima</i>	Submerged Sewer Rehabilitation: Lake Oswego Takes the Plunge <i>Nathan Bell, Brown and Caldwell</i>	Treatment Wetlands for Effluent Polishing, Groundwater Infiltration, Habitat Creation, and Recreation <i>Christopher Keller, Wetland Solutions</i>
Effectively Converting Conventional Activated Sludge to BNR Process <i>Jyh-Wei (Al) Sun, CDM Smith</i>	We Can Fix That: Ten Years of Seattle Public Utilities Retrofit Program Successes <i>Ben Marré and Steven Drangsholt, Seattle Public Utilities</i>	Passive Nitrate and Heavy Metal Treatment Using Woodchips and Biochar within a Constructed Wetland <i>Jeff Hart, Kennedy/Jenks Consultants</i>
Biological Process Design for Phosphorus Removal at the Nampa WWTP – Integrating Trickling Filters with the A/O Process to Treat a High-Strength Industrial Wastewater <i>Matthew J. Winkler, Brown and Caldwell</i>	The New Wastewater: Collection System Challenges Caused by Today's Modern Trash <i>Robert Domkowski, Xylem, Inc., Water Solutions USA - Flygt</i>	A Multi-Solution Approach to Long-Term TMDL Compliance Using Natural Treatment Systems in Corvallis, Oregon <i>Preston Van Meter, Kennedy/Jenks Consultants</i>

Session 16 Nutrient Removal	Session 17 Collections: Pump Stations	Session 18 Operations: Automation
Application of Lessons Learned from a Pilot Investigation to the Full Scale Design of a DEMON® System to Remove Nitrogen from Dewatering Centrate <i>Lynn Williams, Brown and Caldwell</i>	Interbay Pump Station – A 50-year Progression in Engineering <i>Ray Nickel, Parametrix</i>	Modern Wastewater Facility Automation: Two Northwest Start-Ups in 2013 <i>Lisa Obermeyer, CH2M HILL</i>
Short-Term Improvements with Long-Term Benefits for Phosphorus Removal and Recovery <i>J. McCormick, Carollo Engineers</i>	The Quest for Clog-Free Pump Station Operation <i>Michelle Burkhart, CH2M HILL</i>	SCADA in the Cloud <i>Curt Landreth, Advanced Control Systems</i>
Tertiary MBR for Nitrification and Low Level Phosphorus Removal <i>Mario Benisch, HDR Engineering</i>	Reducing Operational Risks Associated with a Large-Scale Regional Pumping System <i>Matt Sprick, Carollo Engineers</i>	Instrumentation Improvements at Silverton WWTP <i>Karen Bill, HDR Engineering</i>
Practical Application of Microthrix Parvicella Control Features at the Meridian Wastewater Treatment Plant <i>William Leaf, CH2M HILL</i>	Branch Line Pumping Alternatives <i>Joe Evans, PumpTech</i>	The Growing Influence of Industrial Ethernet in Plant Control <i>Robert Salmond, Tetra Tech</i>
Algae Kinetics and Utilization for Nutrient Removal from Wastewater Effluent <i>Michael Marsolek, Seattle University; Students from Seattle University</i>	Pump Station Retrofit Reduces Power and Maintenance Costs <i>Darrell Winans, City of Gig Harbor</i>	Bend Supervisory Control and Data Acquisition (SCADA) Improvements Project <i>Jim Wodrich, City of Bend; Gabe Shones, Harris Group</i>

**Wednesday Morning, September 18**

7:00 - 1:00	Registration		
	<b>Session 19 Regulatory Strategies</b>	<b>Session 20A Operations</b>	<b>Session 21 Odor Control</b>
8:00 - 8:45	A Credible, Transparent, Turn-Key Solution: What It Takes to Make Water Quality Trading Work <i>Alex Johnson, The Freshwater Trust</i>	Vibration - What Is It? How Does It Affect My Operation? What Can I Do About It? <i>John Koch, HDR Engineering</i>	Odor Control Technology Advancements <i>Anthony Yamini, PureAir Filtration</i>
8:45 - 9:30	Guidelines for Preparing Wastewater Planning Documents in Oregon <i>Jon Gasik, Oregon Dept. of Environmental Quality</i>	Bend WRF Secondary Expansion: IFAS implementation for efficient operation and expandability <i>Dave Green and Bill Leaf, CH2M HILL</i>	Emerging Technologies for Controlling Odors and Fats, Oils and Grease (FOG) in Sewer Collection and Pretreatment Systems <i>David Kopchynski, Parametrix</i>
9:30 - 10:15	Toolbox for Restrictive Toxic Criteria Includes Treatment Technology and Regulatory Solutions <i>David Clark, HDR Engineering</i>	Improvements in Video Based Knowledge Capture <i>Dale Richtwine, Richtwine Environmental</i>	Use of Sustainable Biotrickling Filter Technology for WWTP and Collection System Odor Control <i>Matthew Johnson, BioAir Solutions</i>
10:15 - 10:30	Break		
		<b>Session 20B Project Delivery</b>	
10:30 - 11:15	Understanding Water Quality Responses to Improve Watershed Management of Phosphorus Loadings on the Boise River <i>Haley Falconer, HDR Engineering</i>	Low Bid-Prepurchase-Negotiated Bid? <i>John Koch, HDR Engineering</i>	Modeling Odor Generation and Control in a Combined Municipal-Industrial Wastewater Collection System <i>Jay Swift, Gray &amp; Osborne</i>
11:15 - 12:00	Implementing an EPA Approved Pretreatment Program in Jerome, Idaho <i>Larry Rupp, Keller Associates; Dade Pettinger, City of Jerome</i>	The Other Side of the Plant - Meridian's New Administration and Laboratory Facilities <i>David Keil, SPF Water Engineering</i>	The Case for Headspace Air Management in Collection System Odor Control Applications <i>Mark Smith, Brown and Caldwell</i>

**PNCWA 2013**  
Building Professional Excellence in Water Quality™

**Conference Chair**

Preston Van Meter, *Kennedy/Jenks Consultants*

**Conference Committee**

Tyler Anderson, *Kennedy/Jenks Consultants*  
Dana Devin Clarke, *Brown and Caldwell*  
Chad Clay, *King County WA*  
Catherine Dummer, *Brown and Caldwell*  
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Session 22 Advanced Wastewater Treatment	Session 23 Wet Weather Treatment	Session 24 Disinfection
Design, Construction, and Performance of the Eugene – Springfield WPCF Tertiary Filtration Facilities <i>Onder Caliskaner, Kennedy/Jenks Consultants</i>	CEPT Applications: Exceptional Technology <i>Greg Land, Kemira Water Solutions; Ron Lillienthal, City of Portland</i>	Impacts of Sodium Hypochlorite Degredation <i>James Green, City of Corvallis</i>
Applying Probabilistic Methods to Quantify Risk in Planning Studies: An Alternatives Analysis for Secondary Expansion at the Durham Advanced Wastewater Treatment Facility <i>Adrienne Mennti, CH2M HILL</i>	Integrating a CSO System into a WWTP Operation Element <i>Cliff Meier, Portland Bureau of Environmental Services</i>	Evaluation of a Pilot Sodium Hypochlorite Gravity Feed System for Wastewater Disinfection <i>Steven Zamperin, King County</i>
Submerged Fixed-Film Media System: “Bug Hotels” Open for Business at the Snohomish WWTP <i>Eun Kim, Kennedy/Jenks Consultants</i>	Pilot- and Full-Scale Demonstration of Wet Weather Treatment Using Chemically Enhanced Primary Treatment (CEPT) and High Rate Disinfection <i>Henryk Melcer, Brown and Caldwell</i>	Optimizing Design of Chlorine Control Systems <i>Benjamin Klayman, Black &amp; Veatch</i>
Primary Effluent Filtration as an Intermediary Wastewater Treatment Step <i>Onder Caliskaner, Kennedy/Jenks Consultants</i>	Chemically Enhanced Primary Treatment (CEPT) Modifications in a 60-Year Old WWTP for Compliance with Effluent Phosphorus Limits <i>Bill Benko and Glen Schwenke, City of Boise Public Works</i>	Disinfection Control Improvements Produce Big Savings <i>Dan Hanthorn, City of Corvallis</i>
The Evaluation of Cloth Media Filtration as Pretreatment to Ultrafiltration in Wastewater Applications <i>Mark Hughes, Aqua-Aerobic Systems</i>	Continuous Rotating Belt Filtration for Primary Treatment <i>Cornelius J Strain, Blue Water Technologies</i>	Next Generation Ultraviolet Light Technology Selection for the Hillsboro WWTF <i>Wayne Gresh, Carollo Engineers</i>

### Pre-conference Workshop Chair

Court Harris, CH2M HILL

### Workshop Coordinators

John Dummer, Clean Water Services

Richard Kelly, Brown and Caldwell

Susanna Leung, Carollo Engineers

Diane Taniguchi-Dennis, Clean Water Services

Marc Yarlott, Veolia Water North America

**Outstanding conference = Dedicated volunteers**

*Many thanks to these volunteers and their organizations for the support!*