

# PNCWA 2012

Building Professional Excellence in Water Quality™

Preconference Workshop Sunday Oct. 21

## Teaching Operators Math: Tools and Techniques that Build Bridges from Problems to Solution

Eric J. Wahlberg, Brown and Caldwell

Joanne K. Price, Knowledge Capture Services, Inc.

Preconference Workshop Sunday Oct. 21

## Energy Independence for Wastewater Treatment Plants: How Would You Get to a \$0 Power Bill?

Dawn Lesley, Kennedy/Jenks Consultants

Frank Dick, City of Vancouver and Aaron Kraft, Veolia Water

Bob Patterson, City of Pendleton

Layne McWilliams, Cascade Energy

John Phillips, King County

Paul Zimmerman, City of Boise

Preconference Workshop Sunday Oct. 21

## Contaminants of Emerging Concern in Recycled Water – The “Unsettled Question”

Dr. Shane Snyder, University of Arizona

Dr. Erin Snyder, University of Arizona

Dr. Keith Maruya, Southern California Coastal Water Research Project

Andrew Salvesson, Carollo Engineers

Dr. Jerry Diamond, Tetra Tech

Preconference Workshop Sunday Oct. 21

## Complete Wastewater Collections System Management

Vic Coles, Collections System Consultant

Eddie Speer, CDM Smith

Kasey Hansen, Gateway Mapping, J-U-B Engineers

Dennis DeMuth, Jacobs Engineering

Mark Braun, City of Portland

Rob Lee, Brown and Caldwell

Jeremy Coles, City of Rexburg

Annual Conference & Exhibition

October 21-24

Boise Centre

**Boise, ID**

**UPDATED PROGRAM DETAILS  
AS OF 9-27-12**

**STILL TIME TO REGISTER!**

**CHECK OUT THE PRECONFERENCE  
WORKSHOPS!**

**PNCWA2012 OCT. 21-24**

**All abstracts, presenter contact info and biographies are LIVE online at  
[www.pncwa.org/pncwa2012-abstracts-bios-contacts](http://www.pncwa.org/pncwa2012-abstracts-bios-contacts)**

Main  
Technical  
Program

**Monday Oct. 22**

1. Nutrient Removal
- 2A. Water Quality and Permitting
- 2B. Biosolids and Digestion
- 3A. Public Education and Involvement
- 3B. Energy Financing Options
- 4A. MBRs
- 4B. Water Reuse
5. Collections and Pump Systems
6. Operations/Process Monitoring

**Tuesday Oct. 23**

7. Advanced Wastewater Treatment
8. Biosolids and Digestion
9. Planning for Sustainability
10. Control Systems/Plant Safety and Security
11. CSOs and Wet Weather Treatment
12. Operations/Plant Optimization
- 13A. Fixed Film Secondary Treatment
- 13B. Resource Recovery
14. Energy Recovery - Food Waste
- 15A. Project Design and Delivery
- 15B. Alternative Delivery: The Construction Manager  
At Risk Approach
16. CSOs and Wet Weather Treatment
17. Collections & Pump Systems
- 18A. Operations/Plant Optimization
- 18B. Operations/Plant Startup

**Wednesday Oct. 24**

19. Modeling and Simulation
20. Energy Recovery - Biosolids
- 21A. Alternative Delivery: The Design-Build-(Operate)  
Approach
- 21B. Project Design and Delivery
- 22A. Research
- 22B. Odor Control
23. Inflow and Infiltration
- 24A. Wet Weather Issues
- 24B. Outfalls and Discharge

Monday Morning - October 22

7:00 - 5:30	Registration						
8:30 - 10:00	Opening Session						
10:00 - 10:30	Break & Ops Challenge Viewing Time						
10:00 - 3:00	4-Person Operations Challenge						
	<b>Session 1A</b> Nutrient Removal	<b>Session 2A</b> Water Quality and Permitting	<b>Session 3A</b> Public Education and Involvement	<b>Session 4A</b> MBRs	<b>Session 5A</b> Collections and Pump Systems	<b>Session 6A</b> Operations/Process Monitoring	Poster Session 10:00 - 2:45
10:30 - 11:15	<b>Start-Up and Operation of a Cold Weather Advanced Nutrient Removal Facility</b> <i>Coralynn Revis, HDR</i>	<b>Water Quality Credit Trading and Offsets in the PNW: Regional Opportunities and Twin Falls Success Story</b> <i>Thomas V. Dupuis, CH2M HILL; Mike Trabert, City of Twin Falls</i>	<b>Water Matters: Educating Elected Leaders—AWWA/WEF 2012 Fly-In</b> <i>Mike Ollivant, Parametrix</i>	<b>Implementation of Montana's 1st Membrane Bioreactor Facility</b> <i>Jeff Ashley, Morrison Maierle</i>	<b>Bellevue Pump Station Upgrade – Building on a Postage Stamp</b> <i>Ray Nickel, Parametrix; James Chae, Jacobs Engineering</i>	<b>Hydraulic Impact on Activated Sludge Quality and Sedimentation</b> <i>Brad Musick, Wastewater Solutions, Inc.</i>	
11:15 - 12:00	<b>BPR versus BNR – High Performance By the Book versus By the Numbers</b> <i>Paul Klatt, J-U-B Engineers, Inc. Dick Froehlich, City of Post Falls</i>	<b>Watershed Based Mercury Fish Tissue Monitoring in NPDES Permits</b> <i>Robbin Finch and Kate Harris, City of Boise Public Works Dept.</i>	<b>Water for People - Honduras Connections Tour</b> <i>Eric Schey, Jacobs Engineering</i>	<b>Not All Screens Are Equal For MBRs</b> <i>John E. Koch, HDR</i>	<b>Pumping Station Capacity – Is it big enough?</b> <i>Edward Speer, CDM Smith</i>	<b>Solutions to Mitigate Effects of Microthrix Parvicella</b> <i>Daniel Ayers and Rick Kelly, Brown and Caldwell</i>	

Monday Afternoon - October 22

12:00 - 1:15	PNCWA Business Luncheon						
1:15 - 2:00	<b>Application of the Results - Spokane RPWRF Low-P Pilot Study</b> <i>Mark Esvelt, Esvelt Environmental Engineering; Lars Hendron, City of Spokane</i>	<b>Compliance Strategies for Challenging New Water Quality Standards for Toxics</b> <i>David L Clark, HDR</i>	<b>Building Trust and Involving the Public in Highly Charged Issues</b> <i>Penny Mabie, EnviroIssues</i>	<b>Upgrading/Retrofitting Your WWTP with MBR Technology</b> <i>Brian Codianne, Ovivo USA</i>	<b>Over the Top: High Flow/Low Head Efficient Pumping at Wastewater Treatment Plants</b> <i>Shawn Kohtz, Murray, Smith &amp; Associates</i>	<b>Wastewater Influent Monitoring to Minimize Process Upsets</b> <i>Justin Smith Irving, s::can Measuring Systems; Greg Land, Kemira</i>	Poster Session 10:00 - 2:45
2:00 - 2:45	<b>Achieve Nitrification and Ultra-Low Phosphorus Using Tertiary Membrane Filtration</b> <i>Karen Bill, HDR</i>	<b>Next Generation MS4 Permitting: The 2012 Boise Area MS4 Permit</b> <i>Robbin Finch and Paul Woods, City of Boise Public Works Dept.</i>	<b>Gaining Public Understanding and Support for Upgrading an Aging Wastewater Treatment Plant Using Design-Build-Operate</b> <i>Dan Knoll and Libby Barg, Barney &amp; Worth, Inc.</i>	<b>Energy Use at Existing MBR Plants and Port Hadlock WA MBR Facilities</b> <i>Jim Santroch, Tetra Tech</i>	<b>Techniques for Evaluating Force Main Corrosion Problems</b> <i>Mike Kebbe, Clean Water Services</i>	<b>Going Mobile with Your System - There Are Apps for That!</b> <i>Matt Stayner, Bowen, Collins and Associates</i>	
2:45 - 3:00	Break & Ops Challenge Viewing Time						
	<b>Session 1B</b> Nutrient Removal	<b>Session 2B</b> Biosolids and Digestion	<b>Session 3B</b> Energy Financing Options	<b>Session 4B</b> Water Reuse	<b>Session 5B</b> Collections and Pump Systems	<b>Session 6B</b> Operations/Process Monitoring	
3:00 - 3:45	<b>Using Lab Results For BNR Process Control</b> <i>Steve Walker, Carollo Engineers</i>	<b>Finding Fermentation's Sweet Spot</b> <i>Matt Gregg, Brown and Caldwell; Erik Coats, University of Idaho</i>	<b>Public Financing for Energy Efficiency Upgrades at Wastewater Utilities.</b> <i>David Dunn, Washington State Department of Ecology</i>	<b>The City of Airway Heights Water Reclamation Plant - A Solution to Water Resource and Water Quality Challenges</b> <i>Allison Esvelt, Esvelt Environmental Engineering</i>	<b>Collection System Inspection Technologies - State of the Industry</b> <i>Jim Hansen, Brown and Caldwell</i>	<b>Get Real: Information from Fuzzy Data</b> <i>Simon Smith, Worldthree LLC</i>	
3:45 - 4:30	<b>Sugar and Wastewater - Together at Last</b> <i>Peter Schauer, Clean Water Services; Anne Conklin, Carollo Engineers</i>	<b>Turn it Down, Mix it Up! Optimize Digester Mixing to Keep the Bugs Happy and Reduce Energy Costs</b> <i>Michelle Burkhart, CH2M HILL; Steve Prazak, City of Bend</i>	<b>Funding Energy Efficiency and Recovery through Grants and Savings</b> <i>Brian Topolski, LOTT Alliance; Angie Estey, Trane</i>	<b>One City's Struggle with Producing Reclaimed Water, A Case Study</b> <i>Ryan Johnstone and David Kopchynski, Parametrix</i>	<b>Integrating Innovative Tools and Trenchless Technologies into Collection System Master Planning</b> <i>Levi Shoolroy, J-U-B Engineers</i>	<b>Experience, Insights and Opportunities Using Advanced Process Monitoring Instrumentation</b> <i>Dan Hanthorn, City of Corvallis</i>	
4:30 - 5:15	<b>Innovative Approach to Meet Nutrient Reductions</b> <i>Paul Woods, City of Boise Public Works Dept.</i>	<b>Using Reliability Centered Maintenance (RCM) to Increase Uptime in Biosolids Processing</b> <i>Marc Yarlott, Veolia Water NA</i>	<b>Registering Renewable Energy Generation for Tracking and Ultimate Sale of Renewable Energy Credits (RECs)</b> <i>Tom Mossinger, Carollo Engineers</i>	<b>Implementing Reuse Strategies to Restore Hood Canal at the Belfair WRF – Mason County, Belfair, Washington</b> <i>Elizabeth Hill, CH2M HILL</i>	<b>Decennial Flow Monitoring Project – Large Scale Monitoring Effort in Support of King County Conveyance System Improvement Program</b> <i>Bob Swamer, King County</i>	<b>Testing Pumps In the Field – The Role of Velocity Head</b> <i>Joe Evans, PumpTech</i>	
5:00 - 7:00	Manufacturers Reception—Exhibit Hall						
7:00 - 8:00	Monday Night Dinner						
8:00 - ?	Networking Night (hosted by PNCWA Young Professionals - offsite)						

Tuesday Morning - October 23							
7:00 - 5:30	Registration						
7:00 - 8:00	Operators Breakfast						
	<b>Session 7</b>	<b>Session 8</b>	<b>Session 9</b>	<b>Session 10</b>	<b>Session 11</b>	<b>Session 12</b>	EXHIBIT HALL
	<b>Advanced Wastewater Treatment</b>	<b>Biosolids and Digestion</b>	<b>Planning for Sustainability</b>	<b>Control Systems/Plant Safety and Security</b>	<b>CSOs and Wet Weather Treatment</b>	<b>Operations/Plant Optimization</b>	
8:00 - 8:45	Getting the PLOT with Ballasted Flocculation and Cloth Media Filtration  <i>Luke Wood, Kruger</i>	Co-Thickening in DAFTs at High Solids Loading Rates  <i>David Newman, Brown and Caldwell; Chris Hatch, City of Tacoma</i>	The Collaborative Modeling Approach to Sustainable Resource Management  <i>Emily Callaway, CH2M HILL</i>	Imminent Threat Alert: Preventing Cybersecurity Attacks Against Water Infrastructure  <i>Mike Karl, CH2M HILL</i>	Comprehensive CSO Planning - From Alternative Development to Recommended CSO Control  <i>Carrie Murillo-Oaks, HDR; Grizelda Sarria, Tetra Tech</i>	Optimizing Operations for Energy Savings: Water & Wastewater Facilities  <i>Steffen Teichmann and Rob Haneline, Trindera Engineering</i>	
8:45 - 9:30	Assessing the Practicality of Biological Processes for the Removal of Pharmaceuticals  <i>Ryan J. Rehder, University of Idaho</i>	Membrane Thickening Aerobic Digestion Processes  <i>Bryen Leng Woo, Ovivo USA</i>	Brightwater: A Commitment to Sustainability Creates an Enhanced Community Asset  <i>Tina Hastings, CH2M HILL</i>	Security for Control and SCADA Networks  <i>Dale Winger, Bowen Collins and Associates</i>	Densmore Stormwater Conveyance System Rehabilitation Project  <i>Thomas C. Demlow, Northwest Hydraulic Consultants, Inc.</i>	Retrofitting an Aeration Basin with Anoxic Zone to Reduce Cost and Improve Performance  <i>Ed Griffenberg, HDR</i>	
9:30 - 10:30	Break - Exhibit Hall						
10:30 - 11:15	Enhanced Biological Phosphorus Removal Using Crude Glycerol (from biodiesel production) in lieu of VFA Supplementation  <i>Erik Coats, University of Idaho; Zachary Dobroth, Brown and Caldwell</i>	Some Like It Hot: Thermal Biosolids Drying at a Small WWTP  <i>Jason Broome, Forsgren Associates</i>	Wastewater Treatment Facility Improvements With Energy Independence in Mind: The Gresham Experience  <i>Matt Noesen, CH2M HILL; Mike Nacrelli, City of Gresham</i>	King County WTD Lockout & Tagout Procedure Software Program  <i>James Faccone and Terry Fiber, King County</i>	Advanced Stormwater Collection and Treatment for Airport Deicing BOD Mitigation  <i>Matt Hewitt and Mark Ryan, CDM Smith</i>	Relax! Just DO it! No Pressure! Resist the Surge!  <i>Emil Voges, Brown and Caldwell</i>	PNCWA Section Exchange 10:30 - Noon
11:15 - 12:00	Impact of Different Wastewater Treatment Technologies on Bioavailability of Phosphorus  <i>Bo Li, University of Washington</i>	Digester Heating 101  <i>Tom Mossinger, Carollo Engineers</i>	What Climate Change Looks Like in the Pacific Northwest  <i>Dr. John Abatzoglou, University of Idaho</i>	High Availability SCADA Control Systems - Efficient Plant Operations, Downtime Prevention and Emergency Recovery  <i>Mike Karl, CH2M HILL; Dan Berrett, US Dept. of Homeland Security</i>	Green Stormwater Infrastructure Use to Control Combined Sewer Overflows, Barton Basin  <i>Patty Buchanan, SvR Design; Kevin Dour, Tetra Tech; John Phillips, King County</i>	Automation for Energy Optimization in Water and Wastewater Systems  <i>Dave Roberts, Black &amp; Veatch</i>	
12:00 - 1:15	Networking Lunch						

Tuesday Afternoon - October 23						
12:00 - 1:15	Networking Lunch					
	<b>Session 13A</b> Fixed Film Secondary Treatment	<b>Session 14</b> Energy Recovery - Food Waste	<b>Session 15A</b> Project Design and Delivery	<b>Session 16</b> CSOs and Wet Weather Treatment	<b>Session 17</b> Collections & Pump Systems  Eddie Spears, CDM Smith. Moderator	<b>Session 18A</b> Operations/Plant Optimization
1:15 - 2:00	Near-Term Improvements of the Snohomish WWTP Using Submerged Fixed Film Media  <i>Tom Giese, Kennedy/Jenks Consultants; Steve Schuller, City of Snohomish</i>	Food Waste Digestion Pilot Startup and Operations  <i>Carl Lundin, CDM Smith</i>	Innovative Design Process Saves Money and Improves Project Delivery  <i>Mike Ollivant, Parametrix</i>	Weathering The Storm - Treating High I/I Flows With Parallel MBR and Conventional Systems  <i>Jason Diamond, GE Water &amp; Process Technologies; Michael Trent, WES Clackamas County; Dale Richwine, Richwine Environmental</i>	The Benefits of Collection System Certification <i>Session 1: Carrie Pak, Moderator Idaho – Ron Gearhart (sp?) Oregon – Kelly Shepard Washington – Session 2 – Process of Collection System Certification Moderator – Bob Swamer Idaho – Victor Coles, consultant Oregon – Ryan Sandhu, Clean Water Services, Field Operations Division Manager Washington – Terry Soden, Pierce Co., Maintenance and Operations Manag</i>	Using Process Optimization and Energy Audits to Reduce Energy Costs  <i>Ron Moeller, Kennedy/Jenks Consultants</i>
2:00 - 2:45	Tertiary MBBR Technology Provides Innovative Solution  <i>James Robinson, Entex Technologies</i>	Food Waste to Energy - Columbia Biogas Project  <i>Dale Richwine, Richwine Environmental; John McKinney, Columbia Biogas</i>	So You Think You Want to Hire a Program Manager?  <i>J. Thomas Jacobs, SAIC</i>	Maximizing Secondary Wet Weather Treatment Capacity at the Columbia Boulevard Wastewater Treatment Plant  <i>Adrienne Menniti, CH2M HILL</i>		Use of Ammonia and Nitrate Sensors for Activated Sludge Aeration Control  <i>Troy Morgan, Xylem Inc.</i>
2:45 - 3:00	Break					
	<b>Session 13B</b> Resource Recovery		<b>Session 15B</b> Alt. Delivery: Construction Manager At Risk Approach			<b>Session 18B</b> Operations/Plant Startup
3:00 - 3:45	WASSTRIP - From Benchtop to Full-Scale Operation  <i>Peter Schauer and Brett Laney, Clean Water Services</i>	From Grease to Kilowatts: Implementing a FOG Program for Energy Independence  <i>Jeff McCormick, Carollo Engineers</i>	Capturing the Benefits of GC/CM During Design  <i>Susanna Leung, Carollo Engineers</i>	Stress Testing—What Is Required and What Do We Know?  <i>Matt Crow, CDM Smith</i>	Recent Advances in Trenchless Industry May Be Right for Your Project  <i>Douglas Genzlinger, Tetra Tech</i>	Successfully Navigating Startup - the Oak Lodge Model  <i>Ryan Campbell, CH2M HILL; Mark Walter, Oak Lodge Sanitary District</i>
3:45- 4:30	Advanced Nutrient Recovery In Corvallis, Oregon  <i>Dan Hanthorn, City of Corvallis</i>	City of Tacoma Food Waste Digestion  <i>James Parvey, City of Tacoma</i>	Project Delivery for the 21st Century: Combining General Contractor/Construction Manager Delivery with Building Information Modeling  <i>Patrick Roe, HDR; Brian Topolski and Eric Hielema, LOTT Alliance; Greg Knutson, Mortensen Construction</i>	Battle Ground, WA Flow Equalization Improvements  <i>Tim Caire, Kennedy/Jenks Consultants</i>	Seismic Risk Based Assessment of Sewers  <i>Donald Ballantyne, Degenkolb Engineers</i>	Play the Hand You're Dealt: Successful Startup and Operation of Expanded Headworks at Durham AWWTF  <i>Lynne Chicoine, CH2M HILL; Randy Naef and Bob Fitzgerald, Clean Water Services</i>
4:30 - 5:15	Next Generation Nutrient Recovery at Clean Water Services Rock Creek AWWTF  <i>Nate Cullen and Perry Sunderland, Clean Water Services; Rick Shanley, Carollo Engineers</i>	Sustainability Evaluation of Food Waste Management Alternatives  <i>Cameron Clark, CDM Smith</i>	Delivering an Integrated and Successful CM/GC Project for the Oak Lodge Sanitary District  <i>Dave Green, CH2M HILL; Mike Clifford, Mortenson Construction; Mark Walter, OLSD</i>	Field Testing of a Full-scale Biologically Enhanced High-rate Treatment System  <i>Al Sun, CDM Smith</i>	Successful History of a Divided Wet Well Solution  <i>Brian Casey, Carollo Engineers; Chip Ullstad, City of Albany</i>	Is There an "Easy" Button for WWTP Start-up? Lessons Learned Going From an Empty Tank to Full Treatment  <i>Peter Stayton, J-U-B Engineers</i>
5:15 - 7:00	Exhibit Hall Closing Reception					
7:00 - 9:00	PNCWA Awards Banquet					

EXHIBIT HALL

Facility Tour  
Meridian  
WWTP  
1:15 - 3:45

Wednesday Morning - October 24

7:00 - 1:00							
Registration							
	Session 19	Session 20	Session 21A	Session 22A	Session 23	Session 24A	
	Modeling and Simulation	Energy Recovery - Biosolids	Alternative Delivery: The Design-Build-(Operate) Approach	Research	Inflow and Infiltration	Wet Weather Issues	
8:00 - 8:45	One-Dimensional HEC-RAS Modeling for Stream Channel Realignment and Riprap Design – A Case Study  <i>Kiersten Lee, MWH Global</i>	Biosolids Treatment and BioEnergy – The Next Big Wave  <i>Jim Georger, Kruger</i>	Evaluating Alternative Project Delivery Methods and Selecting DBO for a Wastewater Treatment Plant Project in Oregon <i>Delora Kerber, City of Wilsonville; Art Molseed, Brown and Caldwell; Jessica Guerrette, SAIC</i>	UV Disinfection and Landfill Leachate - a Troublesome Combination  <i>Andrew Salveson, Carollo Engineers, Andrew Perez, Pierce County, Brian Matson, Carollo Engineers</i>	Micromonitoring: A solution to focused I&I investigations  <i>John Barton, Stantec; Dave Jacobs, Seattle Public Utilities</i>	EPA Wet Weather Regulatory Updates - Stormwater MS4, integrated SSO/CSO permitting, funding  <i>Bob Matthews, CDM Smith</i>	Facility Tour West Boise WWTP 8:00 - 10:30
8:45 - 9:30	Improving Flow Distributions in Treatment Plants Using CFD Modeling  <i>Fangbiao Lin, Stantec</i>	Holistic Evaluation to Identify the Highest and Best Use of Biogas  <i>Josh Newman, Metropolitan WW Management Commission; Matt Steiner, CH2M HILL</i>	Deliver This! Implementation of Operate-Design-Build-Operate in Wilsonville, Oregon  <i>Michelle Burkhardt, CH2M HILL; Eric Mende, City of Wilsonville</i>	Development of an Accurate Synthetic Surrogate for Lab-Scale Studies of Biological Municipal Wastewater Treatment  <i>Nick Guho, University of Idaho</i>	Infiltration and Inflow Where it Doesn't Rain - Much  <i>Richard T Wiebe, J-U-B Engineers</i>	The Upper Ladue Sub-Watershed - A Case Study in Successful RDII Removal  <i>Paula Arsenaault, PMA Engineering</i>	
9:30 - 10:15	Improving WWTP Design and Operations through 3D CFD Modeling  <i>Randal Samstag, Carollo Engineers</i>	Gasification of Sludge and Biosolids - A Review of Technology Fundamentals and the Current Commercial Status  <i>Matthew J. Winkler, Brown and Caldwell</i>	The Alternative of Alternative Delivery - Progressive Design Build  <i>David Keil and Larry Johnson, HDR</i>	Quantifying Metal Removal from Stormwater Using Pervious Concrete  <i>Jerin Tilson, Washington State University</i>	Creating a Roadmap for Cost-Effective Infiltration and Inflow (I/I) Removal in King County, Washington  <i>Jeff Lykken, TetraTech/KCM</i>	City of Gresham Waste Water Collection System Master Plan Making the Most of Limited CIP Dollars  <i>Matt Hickey, Murray, Smith &amp; Associates; Andrew Thorne, City of Gresham</i>	
10:15 - 10:30 Break							
			21B	22B		24B	
			Project Design and Delivery	Odor Control		Outfalls and Discharge	
10:30 - 11:15	The Use of Process Simulators in Wastewater Treatment Facilities: Planning, Design, Commissioning, and Operation  <i>Bill Leaf, CH2M HILL</i>	Reducing the Carbon Footprint of the Hyannis WPCF through Renewable Energy Production and Energy Efficiency Measures  <i>Marc Drainville, GHD</i>	High Quality Plans and Specifications- Positive Return on Investment  <i>TBD, CDM Smith</i>	Odor Control - A Successful Case Study of an Evaluation and Assessment at a Wastewater Treatment Plant  <i>Fred Kriess, Severn Trent Services</i>	Water Quality Performance Monitoring of El Cerrito Green Streets  <i>Donna Bodine, Geosyntec Consultants; Alicia Gilbreath, SF Estuary Institute</i>	Inspection of Marine Outfalls  <i>Jeffrey Lundt, King County WTD</i>	
11:15 - 12:00	Process Model Design Performance vs. Actual Plant Five Years Later  <i>Mario Benisch, HDR Engineering</i>	Small Scale Power Generation: One City's Experience with Co-Generation and Hydro Power Projects  <i>Brett Converse, J-U-B Engineers; Kody Van Dyk, City of Sandpoint; Ray Watkins, AEI Engineering</i>	The LOIS Project: O&M Knowledge Management Goes High Tech  <i>Nathan Bell and Max Hildebrand, Brown and Caldwell</i>	Brightwater Treatment Plant Odor Control Design for No Detectable Odors  <i>Tina Hastings, CH2M HILL; Carol Nelson, King County</i>	Unique Solutions to Residential Sewer Back-Ups  <i>Sheila Harrison, SPU, City of Seattle</i>	Investigating Indirect Discharge Options Along The Sandy River  <i>Matt Noesen, CH2M HILL; Randy Rosane, Clackamas County WES</i>	
12:00 - 1:00							