ACWA Conference Largest Ever

At ACWA's largest summer conference ever, over 180 ACWA members, regulatory staff, consultants, and non-profit organization representatives met in Bend to discuss water quality challenges facing Oregon wastewater and stormwater utilities.

ACWA chair, Stephanie Eisner, reviewed the 2014 ACWA accomplishments for the group. A copy of the 2014 ACWA Annual report is posted at [HYPERLINK "http://www.oracwa.org/members/documents/ACWAWinter_NL2015.pdf"].

EPA Senior Staff Joins Discussion

Jeff Lape, EPA Deputy Director for the Office of Science and Technology, discussed efforts to promote sustainability in wastewater treatment systems.

"This is a new presentation – a beta example of the presentation and I want your feedback," he opened. "Oregon is a leader in wastewater treatment – I see advanced thinking in sustainability, collaboration, and innovation here in Oregon. Even the ACWA conference agenda reflects the forward thinking of its Oregon members," he opened. "The sector has changed and the notion of water sustainability has changed, and let's focus on why and the leadership opportunities of protecting water resources sustainably at a local scale,' he said.

Lape reflected on the clean water accomplishments over the past 40 years – wastewater treatment improvements resulting in cleaner water across the nation. "When I look forward to the next 40 years of water, I see drought, harmful algal blooms, and aging infrastructure - - we cannot tackle and solve those with the same thinking that got us here today…"

"There is a new water paradigm focused on the role of community water leaders. We need to embrace change and embrace sustainability of water resources. We might consider how we integrate protection of water resources and innovation," he said.

He stressed the EPA technology blueprint update - - released the day of his presentation - - highlighting Gresham's net energy zero treatment plant. "As a young engineer, I learned that concrete was the environmental solution to all problems. We now know that green solutions capture nature's ability to treat pollutions more effectively and more sustainably," he said.

"EPA needs to create the regulatory space to try innovative ideas without the risk of severe consequences if it doesn't work," he said. "EPA wants to be there with the States to get your jobs done," he said.

Ideas for promoting innovation include:

- Water resource management integration, with an emphasis on reuse
- Integrated watershed monitoring

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- Continuing to advance wastewater recovery
- More creative NPDES permits, such as the Clean Water Services watershed permit using water quality trading as a compliance tool
- Development of water sustainability metrics by individual community with detailed water quality, energy recovery, greenhouse gas reductions, and social responsibility tracking and reporting

He complimented the work of Clean Water Services, Oregon's drug take back program at local law enforcement offices, Medford WISE (Water for Irrigation, Streams and Economy) program, ACWA sustainable energy management training programs, and the City of Portland effort on green infrastructure.

Sustainable Water Resources
Theresa Connor with the Water Environment Research Foundation joined the ACWA conference to discuss WERF's research agenda around 'one water'.

"Innovation and imagination are two key areas essential for achieving our sustainable water resources goals," she said.

WERF is a subscriber based research organization focused on meeting the research needs of stormwater and wastewater utilities. More information is available at www.werf.org .

She reviewed the water cycle from the first use of water for firefighting to communities reusing treated wastewater for drinking water.

"Drought is the driver for many of these changes," she said. Drivers for change include aging infrastructure and land and use decisions. Technology offers opportunities, she stated, including optimizing green infrastructure, transitioning to alternative water sources, and integrated planning and transformation.

She highlighted WERF research areas underway that include:
- Green infrastructure techniques and maintenance costs
- Integrated planning toolbox for the required EPA alternatives analysis for wet weather controls
- Stormwater BMP database
- Ag BMP database
- Stream restoration model for BMP database and a permitting guidance handbook
- Economic and regulatory pathways for reclaimed water and harvested stormwater
- Public health standards for on-site water systems
- Blueprint for on-site water systems

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The WERF report *Pathway to One Water* examines the institutional barriers to 'one water'. "This report examines culture - - not engineering challenges," she said. "The focus here is recognizing the water is more than just a service provision - - water is a key component of livable cities," she highlighted.

The six key elements of 'one water' include:

- Strong leadership, including political leadership and establishing mutually beneficial goals and values. "Leadership at the local government level is needed to align passion and facts," she said.
- Partnership. "Planning and collaboration are needed for innovative solutions," she said. She highlighted the need to collaborate on data collection and assessment and standardize approaches across the region with an open communication platform.
- Transparent engagement of citizens and stakeholders. "You will move at the pace of trust," she highlighted
- Changing mind sets. "A proactive approach, focused on improving the value of service and creative opportunities is needed. We need to move beyond the zero sum game," she said.
- Conducive economic environment for private investment. "Dedicated funding sources are needed, along with private investment incentives, especially in stormwater
- A regulatory environment that allows for creative solutions. "Recognize that the cost of not making regulatory changes is important to stress to the regulators," she said.

She highlighted that rebranding the name of the sewer district can assist the staff and community in making the transition to 'one water' thinking.

WERF also operates the LIFT program to bring innovation to the wastewater sector – more information is available at [HYPERLINK "http://www.werf.org/lift."] . EPA and WERF are working on a platform to improve sharing information about the performance of innovative technology.

"Can we image and implement an approach to water resources that has no waste," she challenged the group. "How can we leverage the food-energy-water nexus to increase the value we provide to our communities", she asked, stressing the need to connect with the agriculture sector.

Dr. Ken Williamson, a member of the Water Environment Research Foundation Council member, continued to discuss the challenges in developing a 'one water plan' - - an area of focus for Clean Water Services. "It may be one water but it is not one price - - and that is our major challenge," he opened. "The 'one water' approach is not where we should go - - it is where we have to go. The decision is not if you are joining the game, it is when you join the game. This change is coming..."

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The necessary expenditures on water infrastructure replacement for the western US will be $400 billion. "What will that $400 billion be - - what will we be buying," he questioned.

"Moving forward, there will be real restriction of the amount of ratepayer dollars available. When we get the money, we have to do smart things," he said. At the same time, utility rates are increasing exponentially, he observed.

"The next factor is the increasing discharger requirements including new water quality standards, new EPA health methodology, new assessment tools for metals, new standards for viruses, and the roll out of the Oregon's toxic standards into water quality permits," he said.

"What does all this mean - - I call this the slow march to reverse osmosis", concluded Williamson.

He also highlighted likely increasing regulatory requirements for stormwater controls.

He used Clean Water Services as an example for moving to 'one water', including:

- Taking a watershed approach
- Using an integrated permit
- Coordinating capital planning
- Focusing on energy efficiency and resource recovery
- Strong regulatory leadership at the utility level
- Community engagement and community support
- Partners with other agencies
- Simplifying the treatment technology wherever possible.

Spokane Toxics Task Force – Crafting Creative Solutions

Adriene Borgias with the Washington Department of Ecology discussed how PCB contamination problems are being tackled on the Spokane River. "Collaborative efforts to restore a watershed are all different version of the same story - - and the challenge is to get those stories to align," opened Borgias. "We must have the courage to challenge some of our regulatory challenges. To tackle toxics, we need to improve collaboration and communication to meet water quality standards, she said.

"Our problem is that the Spokane River does not meet the water quality standards for PCBs - - either the Washington standards or the Spokane Tribal standards. The standards are in parts per quadrillion. One quadrillion is the size of a penny in the entire state of Washington.

The regulatory tools we have are inadequate for the standards we face. PCBs are found in most consumer products - - allowed at a standard a million times greater

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than the water quality standards," she said. Problem sources include recycled inks, paints, motor oil, auto shredder waste, biosolids, used oils, and consumer products.

The City of Spokane conducted a study of commonly used stormwater and maintenance products and PCB levels. Hydroseed was found to be a source of PCBs - - likely from the green color added to hydro seed and newspaper tackifier. Hydroseed was found to have 2.5 ppm PCBs - - a billion times higher than the water quality standards

The Spokane River Task Force is now working with hydroseed manufacturers to identify and eliminate the PCB sources, along with changing State and local purchasing specifications to eliminate PCBs.

A broad-based group including Tribal nations, state regulatory agencies, non-profit groups, industrial groups, and public health groups have formed with the Spokane River Toxics Reduction Coalition to focus on toxic source reduction - - with a focus on PCBs and dioxins.

Her tips for driving these processes included:

- Be purpose driven
- Leave the past behind
- Take appropriate responsibility and expect that from others
- Every penny counts
- Inclusion, not exclusion
- Educational
- Voluntary
- Self-designated
- Flexible
- Egalitarian
- Respectful
- Accountable
- Time limited
- Achievable

The group uses measurable advancement to determine its progress towards meeting its goals; while the group is moving forward, the Department of Ecology has agreed to delay the development of a PCB TMDL. The Spokane River is 303(d) listed for PCBs.

"Solutions work at this level because everyone cares about its watershed. The community will bring its own leadership to the table," she concluded.

Lynn Schmidt, Stormwater Permit Coordinator with the City of Spokane outlined the City's efforts to reduce PCBs in the watershed. Research has shown that PCBs are

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reaching the Spokane River through the MS4 system and the Combined Sewer Overflows (CSOs).

By sampling the catch basins in the traditionally industrial portion, the City found that PCB levels ranged from 5 ppb to about 1700 ppb. PCB clean up sites were a target - - soil remediation standards are much higher than water quality standards. Resampling has found similar levels of PCBs in the industrial area with no specific source identified. Spokane has revised its management practices for catch basin sediments in the industrial area with this information. Spokane has also redesigned its vactor decant facility to focus on PCB removal.

Other City actions have included:

- Marking all storm drains
- Additional stormwater sampling in the MS4 system. Routine PCB sampling showed some correlation to wind. "Air monitoring may provide some additional information," she said.
- PCBs are regulated in the City NPDES permit. Spokane addresses PCBs as a pretreatment program element and works to reduce active sources of PCBs, along with changing procurement practices to use PCB free products. Spokane has found PCBs in all locations sampled with an influent average of 12,500 pg/L. Older residential areas are slightly higher in PCB concentrations than industrial/commercial areas and newer residential areas.
- The City studied PCB concentrations in common municipal road maintenance products, and found high levels of PCBs in road paint, hydrant paint, utility locate paint, motor oil, diesel and gasoline lubricant, asphalt sealer, crack sealer, deicer, vehicle wash soap, antifreeze, PVC pipe, pesticides/herbicide, dust suppressant, hydroseed, and fire fighting foam. This translates to PCBs in stormwater.
- PCBs in products including liquid detergents, dish detergents, and toothpaste.

The City of Spokane has developed an Integrated Plan as part of its overall Combined Sewer Overflow long-range strategy. The plan includes exploring green infrastructure options and continuing PCB research and reduction programs. The City is also committing to operating its membrane system at the wastewater treatment plant daily.

Smart Floodplain Management

Kaitlin Lovell with the City of Portland Bureau of Environmental Services discussed how local communities might consider an integrated response to pending Federal Emergency Management Agency (FEMA) decisions regarding endangered listed salmon species and flood management programs. "Many Oregon communities rely on federal flood insurance for their citizens. FEMA must now consider ESA implications for their flood insurance programs," opened Lovell.

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Nationally, insurance companies have sued a number of communities for allowing building in the flood plain.

"Cities routinely build in the flood plain…this not an action of God; that's an action of the City Council", Association of State Floodplain Managers - use as sidebar near this story…

"The majority of Oregon communities are located along rivers, and rivers flood; therefore communities flood," said Lovell

"Floods are neither good nor bad. Floods can be damaging, but also provide beneficial services. Flood plains are a version of green infrastructure," said Lovell.

The federal government passed the National Flood Insurance Act of 1968 to standardize development in the floodplain and provide protection from flooding. The program is to provide flood insurance nationwide at subsidized rates and encourage state and local governments to make land use decisions that restrict land and development exposed to flooding and intended to guide development away from the floodplain. "These programs have not worked and FEMA is now drowning in federal food insurance claims," she said. FEMA requires mapping a model ordinance and a community rating system and which provided the nexus for the Endangered Species Act.

FEMA has never previously consulted with the National Marine Fisheries Service or US Fish & Wildlife service on Endangered Species Act issues.

The changes to the flood plan management issues are driven from 3rd party litigation under the Endangered Species Act. NMFS and FEMA are now discussing *'Reasonable and Prudent Alternatives'* (ESA language) to the finding of 'jeopardy'. Issues include mapping, development standards, community rating system, mitigation along with monitoring and reporting, and adaptive management. "This will require communities manage water on your landscape,' she said. She suggested that stronger interim measures may be needed. The final Biological Opinion (BiOp) may be issued in the fall of 2015.

What to do now, asked Lovell. "Avoid damage and development in the floodplain," she said. After that, evaluate your operations, asking:

1. Where are we sending our water?
2. How strong are the Low Impact Development (LID) criteria inside and outside the building envelope?
3. Have you incorporated climate risks into your models and asset management?
4. Have you inventoried and prioritized your restoration actions, especially flood plains and at what scale?
5. Evaluate your resources – these regulations will come into play in the next 24 months.

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6. Implement projects that restore connected, expansive floodplains, as the City of Portland has accomplished in the Johnson Creek watershed. She stressed that proactive projects can be leveraged and cost shared - - and that might not be possible in the future.

Avoid additional mapping, and avoid any independent actions for now, she said.

Sara O'Brien with the Willamette Partnership continued to discuss options for communities to collaborate to find solutions. The Willamette Partnership is building a toolkit for floodplain management to address the pending Biological Opinion. The key partners include the City of Portland, The Freshwater Trust, Portland State University (PSU), Oregon Watershed Enhancement Board (OWEB) and the Oregon Department of Transportation (ODOT), along with a number of local governments and agencies with land use planning expertise.

Our goal for this group is to develop a tool for smarter flood plain management, she said. "Everyone wants more resilient ecosystems and more integrated planning and implementation," she said.

The Willamette Partnership program is currently working on:

- Function based mitigation approach
- Technical support for communities
- Funding for restoration planning and implementation
- Path for integration with current land use and other policies.

Willamette River Alliance

Dr. Ken Williamson with Clean Water Services and Walt Meyer with West Yost and a Metropolitan Wastewater Management Commission (MWMC) commissioner discussed a concept for the Willamette River Alliance - - a possible permitting system for dischargers on the Willamette. "The Willamette River Alliance would be a bridge strategy to develop a permitting strategy for NPDES permit holders - - municipal and industrial - - with a focus on river health," opened Williamson. He reviewed the Oregon temperature standard - - in flux since its first adoption in 1996—which has also been litigated a number of times.

"The Willamette River Alliance is a concept to allow municipal and industrial sources to collaborate on watershed health restoration through a general temperature permit. Currently, the value of a KCAL is about $0.05 and that would generate millions of dollars in restoration dollars," Williamson said.

Meyer continued by describing the temperature challenges for the Metropolitan Wastewater Management Commission, and the compliance options including reuse, land application on the existing Biocycle farm, trading, and a regulatory review program, related to the original Willamette TMDL. "It might cost MWMC $10 million to meet the temperature standards, yet would have no ecological benefit.

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That is something stupid. The alliance allows us to focus on the overall ecological health for the Willamette River," concluded Meyer.

Use of Anammox Systems to Reduce Nutrient Concentrations
Dr. Hayee De Clippeleir, Research Program Manager for DC Water, discussed Anammox systems. 'The Anammox technology is greatly changing the technology of wastewater treatment. This technology is being accepted very quickly across the US and internationally," she said.

"Nitrification/denitrification is the early stage technology to reduce nutrients," she said, highlighting the large amount of energy needed to achieve water quality standards, along with additional chemical costs. The next step is a nitrite shunt that reduces energy and chemical costs to meet nutrient standards.

The emerging Anammox (**an**aerobic **amm**onia **ox**idizing bacteria) technology meets nutrient water quality standards with reduced energy demands and reduced biosolids generated. 'This is a very favorable technology to meet nutrient standards," she said, "Reducing sludge production reduces hauling and handling costs."

She stressed that these types of systems have a small footprint and can be installed as a sidestream technology. "These systems are ideal for sidestream treatment of centrate from the digesters – often about 20% of the nitrogen load for the treatment plant - this leaves a small footprint and generates significant cost savings," she said. "Using Annamox bacteria will treat this stream with no chemicals and a small energy cost. This can be done with existing small tankage already installed at the treatment plant", she said. She added that the use of Anammox bacteria requires robust process controls, particularly during startup.

"We have really worked out all the kinks of this technology," she said. "This process will help wastewater treatment plants to be more energy efficient, especially by moving towards chemically enhanced primary treatment," she said, possibly reducing energy needs by 50% from a standard activated sludge treatment plant. There are more than 100 full scale Annamox systems installed internationally – about 75% municipal installations and about 25% industrial systems. DC Water's Blue Plains plant - - the largest treatment plant in the US - - is in the midst of constructing an Annamox system.

There are a number of Annamox systems including:

- DEMON – sequencing batch reaction with hydrocyclone granular sludge
- CANON/ANNAMMOX – upflow granular sludge
- Biofilm process - Moving Bed Biofilm Reactor (MBBR) style

She stressed the future of resource recovery including:

- Concentrating organics for removal

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- Minimum energy costs for nutrient treatment

The Water Environmental Federation (WEF) has produced a report *Shortcut Nitrogen Removal – Nitrite Shunt and Deammonication* which is available from the Water Environmental Federation web site [HYPERLINK "http://www.werf.org/lift/news/2015/Shortcut_Nitrogen_Removal_Publication.aspx"].

Embracing Water Supply Sustainability

Melissa Meeker, Executive Director of the WateReuse Association and WateReuse Research Foundation, encouraged the group to think about water differently. She reviewed the risks of water scarcity for businesses, the economy, food production, power production, and commerce. "There is not an item in this room that did not take water to produce," she said. She continued by reviewing the three Oregon Fortune 500 companies - Nike, Precision Castparts, and Lithia Motors. Oregon's largest employer - - Intel - - uses a huge amount of water. Food processors are also a large segment of Oregon's economy.

What impact will the drought have on all these areas of the Oregon economy, she questioned.

The factors driving water reuse include:

- Surge in demand with rising populations
- Instability of supply due to climate change or political factors
- Limited availability of groundwater

"Reuse is not the solution to everything, but it should be part of the puzzle," she said, borrowing from the Colorado water strategy.

"Matching the right water for the right use" is a key concept she said.

Water reuse in agriculture is very common and some states are moving reuse to edible crops, including the Monterey Regional Water Pollution Control District and its partnership with the agriculture producers including the largest artichoke producer in the US. Santa Clara Valley Water District is producing 8 million gallons per day for manufacturing and irrigation and is planning to morph to a potable reuse facility in the future

The WateReuse Association and Research Foundation focuses on advocacy and leadership, outreach and training, along with research. A few key projects include a risk assessment study of pharmaceuticals and personal care products in recycled water, projects focused on industrial reuse, and 'fit for purpose' to match the right water for the right use. An extensive study of agricultural reuse and its barriers is currently underway, also.

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"We have done a lot social research on public perception and acceptance by the public of reused water," she said. The group has produced a number of videos and other outreach tools. WateReuse is developing a website that summarizes the water reuse for drinking projects internationally, such as the NEWater direct portable water recycling project in Singapore, and its expansion to be one-half of the drinking water source in the future. In a short video, featuring the Singapore Public Utility Board, a Singapore utility executive said, "We don't sell you water, we rent you the water, and you send it back to us. We are really a laundry service…"

IP IPA – Telling the Story of Recycled Water One Pint at a Time

Mark Jockers with Clean Water Services discussed its project to use treated wastewater to brew beer, in a partnership with the Oregon Brew Crew. Clean Water Services produced high purity water to showcase innovative water technology and to start a conversation about the nature of water. "We wanted to leverage the brand Oregon has for craft brews and ignite a conservation about the nature of water with this story," opened Jockers, continuing that he has never been involved in a story of this magnitude in his 20+ years of public affairs experience. Media interest included National Public Radio, Associated Press, and the front page of the Wall Street Journal.

Clean Water Services used ultra-filtration, Reverse Osmosis (RO) disinfection and advanced oxidation, to produce the 'cleanest water on the planet'. Building regulatory support for direct, regulatory reuse is also a challenge, Jockers said. "The regulations treat recycled water based on its history, not on its quality," said Jockers.

"In order to get at the mindset to change the culture, we decided to focus on the 'yuck' factor,' he said. "People are thinking about this with the drought in Western US, and this story was just at the right place at the right time,' said Jockers. "We have to take this to the next step by updating Oregon's reuse rules. We don't want to be in California's situation in 20 years and not have our regulations and safeguards in place," he concluded

Sidebar - Looking for beer made from actual human piss? Urine in luck…

…News headline

The Utility of Social Media

Ely O'Connor with Clean Water Services advised the group on how to incorporate social media into wastewater and stormwater utilities. "Social media is a smaller footnote in an overall communication strategy", she opened. "It is important to set strategic goals for your social media campaign. At Clean Water Services, we started by listening, and then started communicating, and engaging the public. At Clean Water Services, our website is our core communication tool, with social media being a two-way conversation."

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"I use my Mom as my communication screen – would she understand it, and would it resonate with her," she said. "I challenge you to find 140 characters to make a very technical report interesting to the public, and use it to drive people to your website or another website Use a photo, a quote, info graphic, related news, and small-sized videos - - all can be used to drive eyes to your web site."

Clean Water Services started into social media in 2007 with YouTube, then Twitter, Facebook, and then Instagram.

Clean Water Services operates two Twitter accounts – one for River Rangers focused on residential actions and a local audience (639 followers) and one for Clean Water News (4,690 followers) for a national audience that is updated less frequently and focused on news content.

Two additional agencies that use social media well in the wastewater industry are Northeast Ohio Regional Sewer District and DC Water.

O'Connor provided Best Management Practices (BMPs) for social media:

1. Stream, not flood of information
2. Keep it simple
3. Use more than words – add pictures
4. Hash tag for tracking and sharing – hash tags are available for '#Water Wednesday' and for '#one water'
5. Be responsive

Follow her on Twitter [HYPERLINK "https://twitter.com/riverranger"] and [HYPERLINK "https://twitter.com/cleanwaternews"].

National Priorities for Stormwater and Wastewater Utilities

Ken Kirk, Ex. 6 Personal Privacy (PP) Executive Director of the National Association of Clean Water Agencies (NACWA) and Adam Krantz, incoming Executive Director NACWA joined the ACWA conference to discuss national issues. Kirk recounted the early history of AMSA, led by Seattle Metro, to involve wastewater utilities in the initial discussions of the Clean Water Act - - forming the Association of Metropolitan Sewerage Agencies in 1970, operating out of the Seattle Metro offices initially, and growing into the NACWA offices of today.

The group thanked Kirk for his 30+ years of service to NACWA and its predecessor organization, the Association of Metropolitan Sewerage Agencies.

Krantz stressed that each wastewater and stormwater utility must share its success story with its community and continue to advocate for clean water. We have to tell our story, explain our path to resource recovery, and our role in restoring our watersheds," he said.

Krantz highlighted some key issues for NACWA including:

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- Integrated Planning/Financial Capacity
- Funding/Financing
- Stormwater
- Climate change/green infrastructure
- State/regional coordination
- Advocacy
- Link between advocacy and communication
- Specific campaigns around wipes, *'toilets are not trash cans'*, and product stewardship.

"The Clean Water Act is moving utilities away from sustainability and it needs to be updated to allow for prioritization across all environmental statutes, to promote innovation, to focus on compliance assurance to enforcement, and to view municipalities as co-equals, not as children," said Krantz. He urged utilities to join NACWA so it can represent the entire country and utilities of all sizes in all places of the nation.

EPA and DEQ Discussion

Dan Opalski with EPA and Jennifer Wigal with DEQ addressed the group on key regulatory issues facing water utilities. Both discussed permitting strategies related to temperature and toxics. "We will continue to have eventful lives related to the Oregon temperature and toxics standards. We know that things will continue to shift so waiting for the regulatory environment to stabilize and be calm has not been our history," Wigal said. She continued that DEQ, EPA, and the permitting community have similar goals and expired permits don't work for anyone. "We share that same perspective and that leaves us in a very challenging place," she said.

"There is no silver bullet here", Wigal said. Permitting tools could include:

- Water quality trading rules.
- Variances – "Other states are starting to use variances across the nation," she said.
- Compliance schedules. "This is a good tool where a facility can meet the limit, but needs more time," she said.

"Toxics and temperature are slightly different pollutant challenges. For temperature we have lots of data, but for toxics we have limited effluent data and limited ambient data," said Wigal. "I would characterize toxics as an 'anticipated' issue," she said.

Opalski emphasized that EPA must use the Clean Water Act as it is currently written -- - not other factors. He added that EPA is currently undertaking a review of the Oregon permitting program. He reflected that in Idaho - - where EPA runs the water quality permitting program - - almost all permits have a compliance schedule. Opalski highlighted that the Oregon water quality program is not just about the municipal sector - - it is about all factors that affect water quality, including

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nonpoint sources. He added that pollution prevention and other innovations are needed to meet the very low water quality standards in Oregon. "Not every situation is unique. We need to get on with moving permits forward. We have to keep up a reasonable cadence on permit writing," said Opalski.

In thinking about stormwater issues, Opalski highlighted that there are many good municipal stormwater permits in place. He would be focused on 'green' not 'gray' solutions with infiltration and storage solutions to reduce stormwater volume, and incorporating that into local government codes for planning and development processes. Stormwater rate stability is important to ensure that utilities can adequately plan, and adjust to changing demands.

Wigal expressed enthusiasm for the DEQ's stormwater program and its efforts to set priorities, improve consistency within DEQ, improve the use of data, and in preparing for the MS4 Phase II permit renewal effort.

Regarding pending water quality standards issues, wastewater utilities should be concerned about:

- Copper – DEQ is initiating a review of the copper water standard using the Biotic Ligand Model approach. DEQ intends to have a revision to the copper standard before the Environmental Quality Commission in October of 2016. "I am concerned about the court not allowing DEQ adequate time for completing its copper standard revision," said Opalski.
- Ammonia – a revised standard is pending at EPA for approval.
- Litigation is pending on other aquatic life toxics standards for cadmium and aluminum.
- National water quality criteria for bacteria phage will be set.
- Final EPA guidance on factors in setting human health risk has been released.
- Final EPA regulations on standards, including the use of variances, has been released.
- DEQ will be revising the coastal bacteria criteria to conform to EPA's latest recommendations on beach bacteria monitoring information.

"You can't always get the permit you want, but sometimes you get the permit you deserve", summarized Opalski.

Willamette River Update

Pam Wiley with the Meyer Memorial Trust (MMT) updated ACWA members on its Willamette River Initiative, a 10-year funded effort to focus on restoration of the Willamette River. The Initiative started in 2008 and includes an annual $1 - $2 million restoration investment.

MMT is focused on developing a common, repeatable framework for a 'report card' for the Willamette River health. The scope of the report is on the ecological health of the main stem; tributaries are not included at this time.

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The report card reports on three separate reaches:

- Upper River – Above Albany
- Middle River – Albany to Newberg
- Lower River – Newberg to mouth

The group conducted an informal exercise to provide their own opinions of the River health. The report will be released in early fall. The University of Maryland Center for Environmental Science - Integration and Application Network was hired to generate the report card using standard techniques they developed for a number of large river systems nationally and internationally.

The report card has about 14 key indicators in priority areas including:

- Water quality
- Habitat
- Fish and wildlife
- People and the River.

Wiley highlighted some of the lessons learned:

- Clearly define purpose, goals, and audiences
- Be clear about what's important to you
- Allocate/recruit adequate resources
- Don't get lost in the numbers – what's the big picture; what story are you trying to tell?
- Save time for stakeholder review.

"Temperature is a big problem and that needs our focus," she added. Materials generated will include a website, community-organized roll out events, and then they will start planning version 2.0. Wiley predicted the consultant costs for the report are about $150,000. "This is intended to be an objective report and to tell the story of the Willamette River," she concluded.

More about the Willamette River Initiative and the Willamette River report card is available at http://willametteinitiative.org/

Portland Watershed Report Card

Kaitlyn Lovell with the City of Portland Bureau of Environmental Services shared the City of Portland's efforts to develop a report card. "Portland has been working on a report card since 2005 and we rolled it out on Earth Day this year," opened Lowell. Portland's report card is nested within the Willamette Report Card. "Our target audience is our rate payers and customers," she said. "It has taken us 100 years to degrade our River system and it will take 100 years to restore it," she said. The City worked on the project for a few years in 2005, took a break, and then restarted the project in 2010.

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"We have a huge amount of data, but very little information," she concluded. With that information, the City revised its entire watershed monitoring program, improving data quality and monitoring trends, and integrated into the MS4 reporting and project reporting The City has surface stream-based monitoring sites at 32 sites for 38 parameters including fish, bugs, water quality, hydrology, canopy coverage, and other parameters. The monitoring is conducted quarterly. The City report card will be produced every 4 years. The City rolled up the data into a standardized system to generate a report grade, A through F, for each watershed.

Lovell summarized the City's lessons learned:

- Get the conversation started
- This is one tool in the toolbox
- Allow other Bureaus and jurisdictions to be involved
- Focus on community based action.

The Portland report card is available at [HYPERLINK "http://www.portlandoregon.gov/bes/62109."]

Interview with DEQ Director

DEQ Director Dick Pedersen opened by sharing a story about the DEQ and water quality permit fee payers discussing the 12% water quality fee increase to augment DEQ water quality permit writers and the frustration within the permit holders' universe about the DEQ's poor performance. "That was a difficult message and I took that to heart and committed to improvements," he said. "That was a call to action for DEQ, legislators, permit holders, and others," he said. DEQ is working on focused rule-making such as water quality trading and tackling permits for issuance. DEQ will be hiring an outside consultant to evaluate the Oregon water quality permitting program, and will work with ACWA and other stakeholders to review and comment on the draft scope of work. DEQ is committed to getting permits out the door. There are challenges, but we can do it, with ACWA's help to keep us focused," he said.

He recounted the innovation success of the Oregon wastewater treatment sector including beer production, a net zero energy treatment plant, natural treatment systems, water quality trading, and watershed planning. "Everyone is on board with innovation, but these are all 'one-offs' and things don't change…" he said. 'If we don't want litigation, we cannot get to a zero risk permit," he said. "What happened to our enthusiasm for Integrated Planning," questioned Pedersen.

Pedersen discussed the temperature issues in Oregon. "Permit holders can get held hostage by other stakeholders on the temperature issue when they are not the source of the problem. Luckily, utilities are very creative in finding solutions such as Clean Water Services and the City of Medford. I commit to work with EPA on forward looking programs for temperature and toxics compliance. We need to

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change the discussion to outcomes with EPA and we need a different implementing mechanism," said Pedersen.

Pedersen encouraged local utilities to engage with other stakeholders at the watershed level in water quality planning efforts for agriculture and forestry interests in the watershed. "Partners in the watershed need to know that utilities are prepared to do their part - - but not the other sector's part," he said.

Pedersen invited ACWA to prepare a briefing paper to identify regulatory barriers to reuse in the reuse rules and the audience that might be concerned or supporting rule revisions.

Crafting Creative Compliance Strategies
Robbin Finch with City of Boise Public Works joined the Conference to share an innovative program Boise is using to meet its nutrient limitations.

The City of Boise has rebranded its sustainability program as *LIV Boise - Lasting, Innovative. Vibrant.* Additional key messages for City employees include continuous improvement, communication, one city/one team, and customer experience of WOW! "This is from top to bottom in the City and it is all about culture," said Finch.

The 25 mile greenbelt on the Boise River in the downtown area helps focus residents on water quality issues.

Boise Public Works is realigning its programs with the *LIV Boise* programs, including the wastewater program in specific areas including:

- Energy efficiency
- Dixie drain pollutant trading
- Local food production
- Solar facility
- WaterShed education center
- Carbon footprint quantification
- Resource recovery
- Economic innovation.

Regulatory challenges include temperature limits, growth, and nutrient limits, including summer and winter phosphorus permit limits.

The Dixie Trade/Offset project is a combination of increased treatment at the wastewater treatment plant, partnered with a nonpoint source trade. Dixie Slough is a significant source of phosphorus to the Snake River, with a large percentage as dissolved phosphorus. Given the close location of the Dixie Drain to the Boise River means that every pound removed is a pound of phosphorus removed from the Boise River.

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The City purchased the Dixie property from a private land owner and then started testing phosphorus reduction techniques Based on a results of a pilot study, the City continued to test chemical treatment. To move the process with EPA and DEQ along, the City hired an independent facilitator trusted by all parties to assist in reaching an agreement. "You have to have an independent, third-party facilitator that is trusted by all parties to keep everyone in the boat," said Finch.

US EPA writes permits in Idaho and the City of Boise has reached agreement with EPA on the revised NPDES permit that incorporates the innovative approach through permit modifications.

"We get more than two times the environmental improvement in the entire Boise River phosphorus system with our restoration program than if we spend the dollars on end-of-pipe treatment," he said. "We are under construction…," said Finch.

"Creative solutions abound for temperature compliance," said Finch, including:

- River restoration
- Irrigation diversion
- Effluent heat recovery
- Using offsets and water quality trading programs
- Using CWA 316(a).

Finch also discussed toxic criteria challenges, focusing on toxic reduction strategies partnered with variances.

Great Hikes in Eastern Oregon

Bill Sullivan highlighted his new book 'Great Hikes in Eastern Oregon'. More about Sullivan and his great hiking books is available at [HYPERLINK "http://www.oregonhiking.com/william-l-sullivan"]

Additional presentations focused on:

- **Using Financial Information to Make Engineering Decisions**
- **Criminal Environmental Investigation Tools**
- **Building Resilient Watershed Restoration Partnerships**

Copies of the presentations are posted on the ACWA web site. The 2016 ACWA Summer Conference is set at Mt. Bachelor Village Resort July 27, 28 & 29, 2016

# # #

"Culture eats strategy for lunch.

…Jeff Lape, EPA as shared at the ACWA Summer Conference, 7/15

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