Pacific Northwest Clean Water Association

PNCWA

Newsletter
Fall 2010

SERVICE PROJECT
Two committees co-ordinate project in Bend

FEATURE FOCUS: WATERSHED MANAGEMENT
Starts on page 15

WILLAMETTE RIVER SEAWALL
The Laurgaard Plan

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Operations at the City of Redmond, OR

Back Row Left to Right- Mark James, Collections Utility III, Chris Miccolis, Wastewater Operations Manager (Former Oregon Treatment Operator of the Year), Rob Carlson, Treatment Operator III

Middle Row Left to Right- David Wegener, Collections Utility II, Larry Morse, Environmental Programs Coordinator, Hoss Abbas, Treatment Utility III (former Oregon Treatment Operator of the Year), Kevin Roberson, Treatment Operator II, Linnea Edwards, Admin Assistant III, Chris Doty, Public Works Director

Front Row Left to Right- Jason Blackwood, Collections Utility II, Bill Strait, Collections Coordinator (Former Oregon Collections Operator of the Year), John Saharski, Collections Utility III, Brad Briggman, Lead Treatment Operator, Shannon Taylor , Wastewater Division Manager

Not pictured: Gary Sundberg - Treatment Operator II

TABLE OF CONTENTS

DEPARTMENTS

COVER PHOTO: CANOEISTS ON THE TUALATIN RIVER, OREGON BY MICHAEL WILHELM (WILHELMPHOTO.COM)

MISSION STATEMENT

Pacific Northwest Clean Water Association (PNCWA) is dedicated to preserving and enhancing the water quality in the states of Idaho, Oregon and Washington. We promote the professional development of our members, the dissemination of information to the public, and the advancement of science and technology needed to protect the water environment.

VISION STATEMENT

The Pacific Northwest Clean Water Association will ensure clean, sustainable watersheds for future generations.

Pacific Northwest Clean Water Association | PO Box 1075 Caldwell, ID 83606 | 208.455.8381 www.pncwa.org

PNCWA NEWSLETTER

To contribute an article, contact Sheri Wantland, 503.681.5111 or wantlands@cleanwaterservices.org. Newsletter articles reflect the author's opinions and not necessarily those of the PNCWA Board of Directors or Water Environment Federation. The PNCWA newsletter is published quarterly, © 2010 Pacific Northwest Clean Water Association. Change of address inquiries should be directed to the PNCWA office.

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I find it appropriate that this issue of the newsletter focuses on Watershed Management considering "Challenges in the future of Watershed Management" is the theme of the upcoming PNCWA Conference. This is a topic of particular interest to everyone in the Pacific Northwest as those west of the Cascades have been blessed with ample water in decades past, while water shortages have frequently occurred east of the Cascades. Whether or not you believe in global warming and its wild card effect on water distribution, we know that increasing population will exert mounting pressure on existing water supplies.

The watershed approach to clean water attempts to meld our vast and complex uses of water, and makes aquatic habitat protection everyone's concern and responsibility. Human activities cannot be considered separately from the environmental health of a watershed. We shouldn't vaguely assign all responsibility to someone else; all of us together, past and present, have created the current precarious balance of resources vs. demand. If demand continues to escalate, it could increasingly threaten the future health of our rivers, lakes, and oceans.

It is an indisputable truth that we have changed the balance of the natural world for the betterment of humankind. Our environment is the end product of those changes, both the good and the bad. In the past, people sometimes acted without considering how those actions would affect our water supplies. The assumption appeared to be that clean water always has and always would be available. We seem to have forgotten that thousands of U.S. citizens used to die every year from typhoid and cholera. We seem to have forgotten the price a society pays when it does not have access to adequate clean water.

I believe the average citizen is concerned about the general health of the environment, including clean water.

PNCWA President
John Shawcroft
Veolia Water NA

However, most people rely on the government, water and wastewater professionals, scientists and others to handle environmental problems and fix the damage. Unfortunately, individual action to protect the environment seems difficult, even impossible. It doesn't help when science becomes

Continued on page 23

Pay it forward! PNCWA Scholarship

2010 PNCWA Scholarship Donors

- $500-$999
  Anonymous
  Veolia Water NA
- $250-$499
  Adam Zabinski
- $100-$249
  Steve James
  Robert Pailthorp
  PNCWA Board Members in memory of John S. Cluss
- $99 or below
  Mike Rainey & Nan Cluss

Only you can help bring the next generation of wastewater talent through the door by helping PNCWA create a vibrant, sustainable scholarship program.

How? Participate in the 2010 annual conference silent auction. The auction will take place in the grand foyer at the Riverhouse Convention Center on Monday afternoon. We need both auction donors and buyers. Auction items can include theme baskets, vacation rentals, sporting event tickets, or anything else that you think someone would want. Silent auction item donors need to get auction items to the front registration area by 9 a.m. on Monday and will have their names posted prominently on the auction tables. Volunteers will help answer questions and make sure bidders get their prizes.

How else? Donate directly to the scholarship fund. All of our *donors will be celebrated at the conference*. Donors who contribute $500 or more will be specially recognized through thank you signs at the conference.

If you have any questions about donations, want to be a volunteer, or have questions about the scholarship, please contact Steve James at (208) 762-8787 or sjames@jub.com .

Portland Waterfront CA. 1900-1910, used with permission by Oregon Historical Society ORHI #28306

Ankeny pump station today

Ankeny Pump Station and Willamette River Seawall

By Susan Gierga, P.E., Murray, Smith and Associates

Portland's Willamette River waterfront has been the subject of discussion, debate, deterioration, compromise, and renovation ever since William Overton and Asa Lovejoy came on shore in 1843. Dubbed "The Clearing" in 1848, the site of Portland's future downtown was little more than a stopping place along the west bank of the Willamette River used by travelers en route between Oregon City and Fort Vancouver. Soon the trees along the Willamette riverfront were clear-cut and a rectangular grid of buildings took their place. The grid's orientation – perpendicular and parallel to the river – demonstrates the mindset of the city founders: true north and south were not as important as the main source of their livelihood, the river. But, there were problems in the "River City." In 1889, The Oregonian called Portland "the most filthy city in the Northern States" due to the unsanitary sewers and gutters. Also, deteriorating wooden structures along the bank were creating fire and disease hazards.

Citizens created the dock commission in 1910 to clean up the downtown waterfront. In 1920, the "Laurgaard Plan" was unveiled by City Engineer and Oregon's first registered professional engineer, Olaf Laurgaard. His plan called for the construction of a seawall along the harbor, a pump station and interceptor sewer, a public market and a new railway station. Merchants who were tired of their basements flooding voted for the sale of bonds to build the pump station and seawall. The $2.7 million construction project began in the spring of 1927 and was finished in the summer of 1929.

Designed to protect downtown from flooding, the seawall was built by interlocking timbers known as timber crib construction. Timbers up to 12-inch square were arranged parallel and perpendicular to each other using carved mortise and tenon joinery. The resulting "mesh" was overlain with a concrete face and held in place with timbers driven deep into the embankment. The 32.5-foot tall wall extends 5,400 feet from Jefferson to Glisan Streets and has kept the Willamette River from encroaching on the downtown area. In the Great Flood of 1996, waters came within one foot of the top of the seawall. City employees with the help of more than 1,500 citizens built a four foot high, mile long temporary wall to keep the river at bay.

The pump station's wet pit/dry pit originally housed three pumps with a total capacity of 110,000 gallons per minute (gpm) or 158 million gallons per day (mgd) that pumped combined sewage and storm water through the seawall to the river. In 1952 the pump station was reconfigured to pump sewage and storm water either to the river or to the Columbia Boulevard Waste Water Treatment Plant (CBWWTP). At the same time, two conveyance lines, 30- and 42-inch, were constructed under the Willamette River. These pipes carry flow to an east side collector and on to the CBWWTP. Four sewage pumps with a combined capacity of 78-mgd pump sewage/storm water to the CBWWTP. Alternatively, two 45-mgd flood control pumps deliver storm water/sewage directly to the river during extreme storm events. A future pump station upgrade will completely gut the interior and replace pumps, piping, electrical and controls with up- to-date equipment. The City of Portland's Landmarks Commission has required all exterior architectural elements of the pump station to remain exactly as Olaf Laurgaard envisioned them.

Susan Gierga may be contacted at giergas@msa-ep.com.

Asset Management: Barriers and Controls

By Marc Yarlott, Asset Management Committee Chair

This summer, like many of you, I have followed very closely the Deepwater Horizon accident and the resulting oil spill in the Gulf of Mexico. While the loss of human life and the impact to the environment are heart rending, the engineer and maintenance person in me realizes that there must be some design, maintenance, or operational procedure that is the root cause of this disaster.

In my search for answers on the root cause, I came across a video presentation from the Aspen Ideas Conference in Colorado where two drilling experts from Shell Oil discussed the deep water well designs in detail. You can find the video here: http://ydesign72705.blogspot.com/2010/07/criticality-and-deep-water-oil-drilling.html .

The discussion of these two experts focuses on the need for Barriers and Controls in design, construction, and operation of these deep water wells. While the terminology of Barriers and Controls isn't too common in the Water and Wastewater industry, each of our plants is design with the concept in mind. A "Barrier" typically represents some design function, usually representing a system of assets. A "Control" is an automated control through local or SCADA and/or a Standard Operating Procedure (SOP) for the maintenance or operation of a function or unit process.

While looking at our plant's operation from a Barriers and Controls perspective is unusual, the concept is very helpful in understanding risk management and why the use of criticality ranking is important. Like BP, Shell, and other deep water drillers, wastewater plant operators and maintainers are managing processes that have the potential to spill and contaminate our watersheds. As we plan our daily operation and maintenance routines, we should always be mindful of priorities developed from a criticality ranking of each system to provide and maintain both Barriers and Controls to protect the watershed we work in.

If you have further interest in articles or information on Criticality and Risk management there are several resources here: http://ydesign72705.blogspot.com/search/label/criticality/risk. See you at the PNCWA 2010 Annual Conference in Bend.

Marc Yarlott may be contacted at marc@wllcamg.com

What Works!

By Richard Finger, POMC Committee Member

It has been an eventful quarter for the Plant Operations and Maintenance Committee (POMC). Despite some technical issues that required the Computerized Maintenance Management System (CMMS) webinar to be rescheduled, we succeeded in delivering both the Asset Management and CMMS webinars. They were well received with a number of agencies joining in with multiple participants, and input was positive. If you have ideas for future presentations, please pass them on to any committee member. We are also busy preparing for a preconference workshop focusing on improving plant and collection system design to make them operator-friendly. If you are a designer, there will be good information to help you improve your design. If you are involved in operation and/or maintenance, there will be discussions and exercises that will give you an opportunity to provide input to designers to help ensure that your new facilities are designed with your needs in mind. So, please register and plan on attending.

We are still looking for suggestions on "What Works!" We know there are lots of good ideas out there, so please send us your great ideas so we can share them with your peers. Please send photos, descriptions and contact information to me or to POMC Vice-Chair Monica Anderson at manderson@ci.wilsonville.or.us. The POMC will work with you to write up your solutions and make them available to others in future "What Works!" articles. Remember, your ideas can be how to do things better or more efficiently, or mechanical/physical changes.

For this issue's "What Works!" think about webinars. All operators need to earn CEUs to maintain their certification. With today's shrinking budgets, restrictions on travel and reduced staffing in general, it is becoming more difficult to find opportunities to obtain the necessary training. Even if the training is offered locally so as to avoid travel and lodging/meal costs, it can be quite expensive. Compared to that, webinars can be extremely cost effective. All PNCWA webinars are certified for CEUs. This year the cost to participate is only $85 per station, no matter how many people attend. All you need is an internet connection to log in and participate at your facility. The only time needed is the actual presentation time. No travel required. If you can get 5 people together for a 2 hour webinar, the cost for 0.2 CEUs is only $17 per person. Where else can you get quality training and CEUs at such an affordable price? So, consider PNCWA webinars as an efficient and cost effective way of getting necessary training and CEUs.

Richard Finger may be contacted at dick.finger@att.net.

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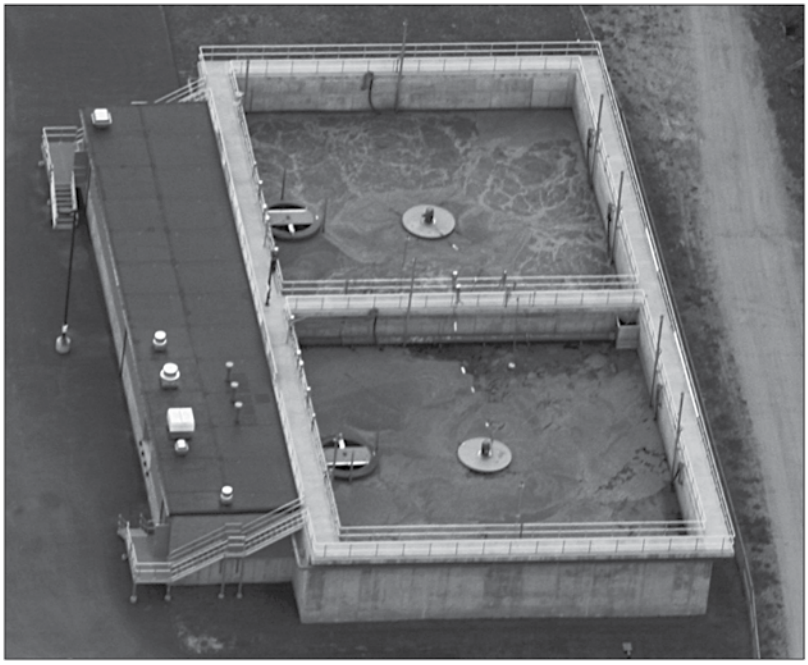

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WEF, ASCE, NACWA, APWA Release Collection Systems Guidance

Alexandria, Va. - Four associations representing the Nation's wastewater treatment, public works, and civil engineering sectors have released the Core Attributes of Effectively Managed Wastewater Collection Systems, a new document that promotes good engineering practices essential to managing and operating separate sanitary collection systems. As a critical element of wastewater infrastructure, collection systems must be effectively maintained and managed to minimize potential impacts on the water environment. Part of this management includes the control of sanitary sewer overflows (SSOs) and the prevention of discharges into receiving waters in accordance with the Clean Water Act. Complicating these management efforts is the absence of clear federal guidelines on how to best manage separate sanitary collection systems and minimize overflows.

To address this lack of guidance, the four associations—the American Public Works Association (APWA), the American Society of Civil Engineers (ASCE), the National Association of Clean Water Agencies (NACWA), and the Water Environment Federation (WEF) — worked together to produce the first nationally recognized set of practices and core attributes for effectively managed wastewater collection systems. NACWA's Executive Director, Ken Kirk, called the Core Attributes "a significant step towards a consistent national framework for the management of separate sanitary collection systems and a critical element of any future federal rule or guidance to address sanitary sewer issues holistically."

The associations engaged a broad group of industry stakeholders to help identify the core issues and best management practices that make up the attributes. The resulting document is now available for download at ww.wef.org/coreattributesofWWCS. The core attributes are referenced in WEF's recently issued position statement Management of Wet Weather Flows by Municipal Utilities.

SYP and Public Ed Service Project Planned for Bend

As water professionals, we are very proud of our efforts in the water cycle even though they are largely overlooked by the general populace. Until something goes wrong, the average person in a metropolitan area may not even realize there are processes, pipes, and equipment to deliver clean water and treat the wastewater prior to discharging back into the waterways. This lack of understanding can be attributed to: 1) the fact that we do our jobs so well they go unnoticed, and 2) people are uneducated about the cycle beyond simple graphics. Ask yourself, do my friends and/or family know the role I play in the water cycle?

Commend yourselves on jobs well done. Then let's get to work on improving the knowledge of others and how we all play a role in the water cycle.

At the PNCWA Annual Conference in Bend, an opportunity to improve students' education will be available to anyone interested. No, you will not be required to entertain 25 teenagers and maintain your sanity. At the Sunday evening Meet & Greet (5 to 7 p.m.) we will be building three different education packages: one for grades 3-5, one for grades 6-8, and one for grades 9-12.

All supplies will be provided, and all that is needed is some simple labor to bring it together.

Once complete, the packages will be available for anyone to pick up and use as educational tools. Examples of where these packages will be useful include:

- Treatment plant tour groups (age specific)
- General education outreach materials at various city department offices
- Girl Scout/Boy Scout meetings
- Home education for your own kids
- Personal education for anyone else

With the depth of pride we all take in our important industry, this is a great way to help others understand how everyone has an impact on our water cycle.

This service project is sponsored by WEF Students and Young Professionals Committee in cooperation with PNCWA Public Education Committee. If you'd like to get more involved, please contact Public Education Committee Chair Karen DeBaker at debakerK@cleanwaterservices.org

Watershed Management

By Tad Slawecki, LimnoTech and WEF Watershed Management Committee Chair

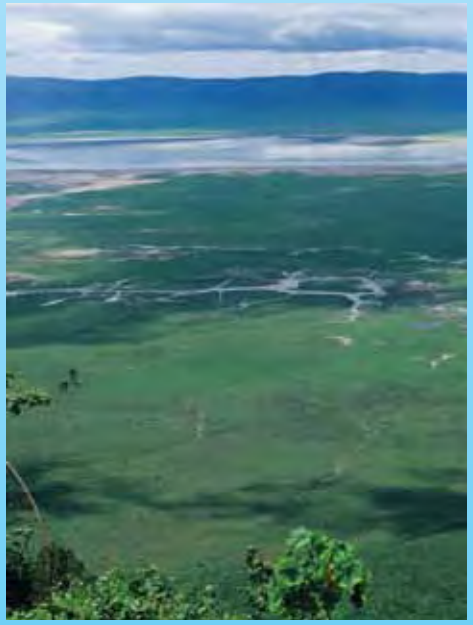
Wa•ter•shed. *n. [G. Fr.; wasser water + scheide a place where two things separate]*

1. *The whole region or extent of country which contributes to the supply of a river or lake.*
2. *The natural boundary of a basin.*

Webster's Revised Unabridged Dictionary, © 1996, 1998 MICRA, Inc.

Synonyms/similar: catchment, basin

Watershed management – perhaps first formally practiced in agricultural settings by the US Department of Agriculture – is a systematic process for managing land uses and water uses in a watershed to achieve water quantity and quality objectives that support desired water uses. A holistic approach is used that integrates quantity and quality issues, looks at all stressors and uses, delivers solutions focused on realistic goals, and is based on consensus between stakeholders. The Water Environment Federation (WEF), recognizing that the watershed approach and watershed management are important tools for the preservation and enhancement of the water environment, has had a Watershed Management Committee (WMC) for nearly twenty years.



The WEF WMC is a technical resource for the water environment community on a wide range of topics from nonpoint source runoff and stormwater to surface water quality and ecology. The WMC contributes to WEFTEC technical sessions, specialty conferences and workshops such as the upcoming Impaired Waters Symposium, and WEF publications and webinars. The WMC also collaborates with other WEF committees, such as the Government Affairs Committee and the Collection Systems Committee on development of technical products and to track developments in watershed management.

Some of those important developments in watershed management are presented in this issue of the PNCWA newsletter. Read on to learn more about EPA's renewed focus on watersheds in the Healthy Watershed Initiative, and how watershed-based permitting may be coming to your zip code (in fact, it's arrived in 97123). If you find the watershed approach appealing, the WMC may be for you – stop by http://www.wef.org/Members/page_committees_details.aspx?id=2216 and see!

Tad Slawecki serves as the 2007-2010 Chair of the WEF Watershed Management Committee, and is a Senior Engineer at LimnoTech. He may be contacted at tslawecki@limno.com.

EPA's Focus on Watersheds


Denise Keehner

Sustainable Communities. Healthy Watersheds. That's the tagline on the cover page of the EPA's Office of Wetlands, Oceans and Watersheds (OWOW) 2009 Annual Report. PNCWA is honored to have Denise Keehner, director of the OWOW office, as our guest speaker for Opening Session (Monday, Oct. 25 8:30 a.m.) at the 2010 Annual Conference in Bend. In the annual report, Director Keehner fully embraces EPA Administrator Lisa Jackson's stated principles of sound science, the rule of law and transparency as guideposts in restoring America's waters. As OWOW director, Keehner says she will strive to focus resources and efforts in those areas that hold the most promise for delivering significant environmental and human health results.

Recognizing the need to conserve and protect healthy aquatic ecosystems, as well as to restore impaired ones, EPA launched the Healthy Watersheds Initiative which focuses on a holistic approach to protect and restore ecosystems. Protecting watersheds costs much less than restoring waters, so encouraging protection of ecologically valuable systems will save money in the long run.

U.S. water resources: a large and diverse portfolio

- *88,000 square miles of estuaries and bays*
- *42 million acres of lakes, ponds and reservoirs*
- *3.5 million miles of rivers and streams*
- *107 million acres of wetlands*
- *54,000 square miles of ocean and near ocean coastal shores*

SOURCE: WATERSHED VIDEO ON OWOW WEBSITE

EPA's Watershed Approach:

- Is hydrologically defined
  - geographically focused
  - includes all stressors (air and water)
- Involves all stakeholders
  - includes public (federal, state, local) and private sector
  - is community based
  - includes a coordinating framework
- Strategically addresses priority water resource goals (e.g. water quality, habitat)
  - integrates multiple programs (regulatory and voluntary)
  - based on sound science
  - aided by strategic watershed plans
  - uses adaptive management


Rock Creek, near Hillsboro, Oregon

EPA's Healthy Watersheds website (www.epa.gov/healthywatersheds) presents a series of conservation and protection approaches, and links to case studies, funding sources and reports. EPA is also working in partnership with the states on a Healthy Watersheds Initiative National Framework and Action Plan, a companion communications plan, and a set of indicator measures for healthy watersheds.

The Healthy Watershed Initiative was launched because despite significant efforts to restore aquatic ecosystems in various watersheds across the nation, the unfortunate trend is the continued decline of these valuable systems. For example, the rate at which new waters are being added to EPA's listing of impaired water bodies continues to outpace the rate at which restored waters are being removed from this list.

In September 2009 EPA's National Water Program published its first strategy identifying the research needed to achieve its goals, meet statutory obligations, and fulfill court mandates. Covering the period of 2009-2014, the Strategy (available at www.epa.gov/waterscience/strategy) identifies four priority themes: Healthy Watersheds and Coastal Waters, Safe Drinking Water, Sustainable Water Infrastructure, and Water Security. Research needs are divided into five technical tool areas: Aquatic Life Health Effects; Human Health Effects; Method Development; Occurrence and Exposure; and, Treatment Technologies and Effectiveness. The Strategy provides the National Water Program a means to manage its research portfolio, evaluate progress in critical research areas, communicate water research needs to current and potential collaborators, and provide transparency.

Continued from page 18

A Different Way to View Wet Weather Permitting – And Still Meet Regulatory Requirements

By Pat Bradley, LimnoTech

Discharges that result from rainfall and snowmelt (wet weather events) include stormwater runoff, combined sewer overflows (CSOs), sanitary sewer overflows (SSOs), and peak wet weather flows at publicly-owned treatment works (POTWs). Wet weather discharges are intermittent, somewhat unpredictable, and not easily characterized. They are extremely variable from one wet weather event to the next with respect to frequency, duration, and volume. Controlling these discharges can therefore be extremely challenging. Developing NPDES permit limits consistent with the regulations and protective of water quality standards—at a level with which municipal permittees can comply—is equally challenging.

Over the years since the 1972 amendments to Federal Water Pollution Control Act put the NPDES program in place, the Environmental Protection Agency (EPA) has issued regulations, policies and guidance to help permitting authorities implement the program. Early on these were geared toward specific program areas such as the CSO program or the stormwater program. More recently, EPA has issued policy and guidance to help permittees and permitting authorities implement the NPDES program through use of a watershed-based approach. Given competing demands for resources at the municipal level, local agencies need innovative approaches that provide flexibility for management of wet weather programs in a holistic manner.

Addressing wet weather discharges in a holistic manner can provide for greater efficiency, more comprehensive planning, and less redundancy among permitting requirements. Nontraditional approaches may be required to address the challenges posed by wet weather discharges. Such challenges must be addressed on several fronts:

- Ensuring that the existing framework of regulation and policy is fully implemented for those discharges covered by existing programs.

- Adjusting this framework to reflect the difficult decisions municipalities face in controlling episodic, variable, and largely unpredictable wet weather discharges.

- Supporting flexible local decision-making to achieve watershed objectives in the most cost-effective manner.

The existing regulatory framework is actually well-suited for implementing the NPDES program on a watershed basis. The regulations provide a system for considering all sources and a process for controlling sources as needed. The system relies on the development of clear performance requirements without dictating the actual treatment or processes that must be used to control the discharge of pollutants. Using this performance-based approach and looking from the perspective of the watershed can allow the permittee to work with the permitting authority to determine the best mix of actions and to prioritize these actions to meet the goals of the watershed. This approach is different than the traditional approach of going source by source to identify individual permit limits that will comply with water quality standards. It provides more flexibility than the traditional approach but also requires more initiative and planning. The tradeoff can be more environmental benefit and wiser use of scarce resources.

Applying the watershed approach in the context of controlling wet weather discharges calls for consideration of the different types of discharges involved and of innovative approaches for developing permit limits and requirements. Development of technology-based limits and the assessment of need for, and development of, water quality-based limits are also considerations.

Pat Bradley, a Senior Scientist at LimnoTech, previously served as the Assistant Chief of the State & Regional Branch in the Water Permits Division at US EPA Headquarters. This article was originally published in Matters, the quarterly publication of the Michigan Water Environment Association.

NPDES stands for National Pollutant Discharge Elimination System. The purpose of the NPDES program is to ensure that all facilities that discharge to waters of the United States meet the technology-based and water-quality based requirements of the Clean Water Act.

LOTT's Water Education and Technology (WET) Center Opens

LOTT Clean Water Alliance in Olympia, Washington, opened its new Water Education and Technology (WET) Center in August. The WET Center, housed in the lobby of LOTT's new Regional Services Center, is 2,400 square feet of interactive exhibits and computer-based activities for all ages. Exhibits focus on the importance of clean water, the science of wastewater treatment and reclaimed water production, and tips for helping the environment, including water conservation. Visitors can use a giant calculator to find out how much water they use in a day, see real time data about how much wastewater flows into the treatment plant, view microscopic organisms that help with the treatment process, build a reclaimed water distribution system with purple pipes, take a virtual challenge as a LOTT engineer, and much more. An exhibit gallery guide, education menu, and WET Center newsletter can be downloaded at www.lottcleanwater.org/education.htm.

Artist's rendering of front entrance.

Students learn basic fundamentals of clean water.

EPA'S FOCUS ON WATERSHEDS *Continued from page 16*

Also recently posted on the EPA website is the FY 2009 *National Water Program Best Practices and End of the Year Performance Report*. Included are performance highlights for the Puget Sound Basin and the Columbia River Basin. Goals for the Puget Sound Basin are to improve water quality, lift shellfish harvest restrictions, remediate prioritized contaminated sediments, and restore estuarine wetlands. For the Columbia River Basin, goals are to protect, enhance, or restore wetland and upland habitat in the Lower Columbia River watershed, clean up contaminated sediments, reduce contaminants of concern found in water and fish tissue. http://www.epa.gov/water/waterplan/fy09.html.

On a level geared more to the general public, a 2007 OpEd piece entitled *Building Livable Communities Starts with a Watershed Address* by then EPA Assistant Administrator for Water Benjamin Grumbles said, "Children learn about their place in the world—their street address, city, and zip code at a very early age. But there is another important dimension to our lives that is also important to our sense of place—our watershed or ecological address. The future of the planet and the protection of the nation's water resources depend on a universal understanding and appreciation of watersheds." The full text is available on the Healthy Watersheds website.

"I started out thinking of America as highways and state lines. As I got to know it better, I began to think of it as rivers. America is a great story, and there is a river on every page of it."

Charles Kuralt, American Journalist

A Look Backward *by Nan Cluss, PNCWA Manager*

My dad used to say he pretty much had done everything he wanted to in his life, that he had accomplished everything he wanted to (except driving every road in the county he lived in and reading through an unabridged dictionary from A-Z). After he died this past spring, we received a letter from the executive director of the national fraternity that he had been very actively involved with for a majority of his adult life. The letter stated that Dad's volunteer service to the fraternity was legendary, and referenced his receiving the highest honor the fraternity awards to volunteers in 1984. He died 26 years later at the age of 93. It was a great letter. My sister and I wish he could have seen this letter because toward the end of his life, he felt forgotten by the organization he had served for so long.

As his circle of acquaintances got smaller as he got older, and he became less active in many things, he couldn't reach out as well to the many individuals he had worked with throughout his life, often as a volunteer. And the various organizations, especially the fraternity he had so selflessly served…it's not that "they" or "it" forgot him, because, after all, an organization doesn't do anything on its own.

My sister and I knew that he wasn't really forgotten but that time had passed, volunteers had changed and people were very busy in the day-to-day functions of keeping the organization alive and abreast of the present while planning for the future.

But it got me thinking of the people out there who served our organization with years of their lives as volunteers, some many years ago, who may be out there sometimes wondering if we remember their contributions to PNCWA.

Each year our conference program lists all the PNCWA Past Presidents. These are just some of the people who have given multiple-year commitments as volunteers to our organization. If you recognize a name on that list this year and have a chance to reach out and say thanks, please do. (If you are a member, when you log in to the PNCWA website, you can access contact info for other members.)

Nan Cluss

Michael Rainey

Here are just a few I'll thank right now:

Marvin Runyan (1958-59)

Robert Sylvester (1959-60)

Chuck Zickefoose (1961-62)

James Boydston (1967-68)

Walter Saxton (1969-70)

Robert Pailthorp (1974-1975)

And to all volunteers who have contributed in any capacity and at any time to keeping PNCWA alive and thriving over the years and who have helped build the foundation that we operate from today, thank you. Thank you very much.

Nation's First Integrated Mur

Article compiled by Sheri Wantland who may be contacted at wantlands@cleanwaterservices.org

Durham AWTF in Tigard, Oregon

The nation's first integrated municipal watershed-based NPDES permit was issued to Clean Water Services in March of 1994. The permit integrated wastewater and storm water permits, and opened the regulatory framework to address water quality improvements for an entire watershed rather than focus on discrete sources of pollution. The innovative permit pierced the divisions between water quality (Clean Water Act), water quantity (water supply) and wildlife habitat (Endangered Species Act), and recognized that the natural systems that water quality standards are intended to protect do not follow jurisdictional boundaries. The permit also set the stage for Oregon's first water quality trading program.

Clean Water Services (District) is a water resources utility serving 527,000 residents in the Tualatin River Watershed of urban Washington County, Oregon. In collaboration with 12 member cities, the District protects public health and the environment, and spearheaded the successful Tualatin River cleanup. The Tualatin River Watershed is an uncommon, if not unique, situation. Because the community has invested more than $700 million in its wastewater and storm water infrastructures, riparian area enhancement and cold water reservoir releases, as well as the green infrastructure of the Tualatin River, its tributaries, and associated water resources, the river is healthier today than in generations. Four world-class wastewater treatment facilities, comprehensive storm water management, unprecedented partnership and co-implementation of complex water quality regulations, and nationally-acclaimed leadership made Clean Water Services an ideal candidate for a new type of permit.

Continually emerging challenges call for a more cohesive strategy than conventional regulations and old school pollution control. This permit allows regulators, permit holders and the community to strive for the greatest environmental benefits while meeting water quality standards. The flexibility of trading water quality "credits" allows watershed-wide management of treated effluent and storm water runoff. And, the District finally gets credit for discretionary activities such as riparian habitat improvements and flow augmentation.

Specifically, the permit allows water quality trading for CBOD and Ammonia between the Rock Creek Advanced Wastewater Treatment Facility (AWTF) and the Durham AWTF. It also allows trading for thermal loads between treatment facilities and the release of stored water from reservoirs, as well as streamside tree planting activities that create shade outside and inside the District's service boundary. The permit also established performance benchmarks for activities by the District and its member cities and Washington County, which are co-implementers of the Stormwater Management Plan.

When the 2001 Temperature Total Maximum Daily Load (TMDL) for the Tualatin River placed stringent thermal loads limits on the Rock Creek and Durham AWTFs, the District concluded that energy guzzling chillers would be prohibitively expensive and would not benefit water resources. Instead, the decision was made

nicipal Watershed-based NPDES Permit

Clean Water Services has water rights in Hagg Lake (pictured) and Barney Reservoir to release cool water to the Tualatin River in the dry months.

Clean Water Services welcomes tours of its wastewater treatment facilities (shown: visitors tour the Durham AWTF).

to plant trees in riparian areas along the Tualatin River and its tributaries and to augment flow using District-owned stored water in Hagg Lake and Barney Reservoir. The Temperature Management Plan (TMP) documents the District's approach, including the Thermal Load Credit Trading Plan and methodology for calculating thermal credits.

The successes reported in the 2009 TMP annual report are summarized here. During the 5-year permit period (February 2004-January 2009), the District successfully offset the entire thermal load from the Rock Creek and Durham AWTFs with flow augmentation and riparian planting. In those five years, the average thermal load discharged by the AWTFs after credit for flow augmentation was 246 million kcal/day, while the riparian planting projects generated 295 million kcal/day of shade credits.

The District's collaborative, cost effective riparian enhancement programs are improving the overall health of the Tualatin River watershed and providing ancillary ecosystem services. Since 2004, more than 35 miles of stream corridors have been restored and revegetated with more than 4.3 million native trees and shrubs. Trees and shade provide many benefits and cool the water, stabilize stream banks, create habitat for aquatic and terrestrial species, and buffer storm water runoff. Cool stored water releases and highly-treated effluent contribute both environmental and socio-economic benefits, providing a sustainable base flow to the main stem of the Tualatin River during the summer and early fall months. And, cooler water has more oxygen to support aquatic life.

Clean Water Services is celebrating its 4oth anniversary. For more information, please visit cleanwaterservices.org

Tree for All volunteers have planted more than half a million native trees in the Tualatin River Watershed since 2005.

Welcome to new members of PNCWA!

The people listed below have become members of PNCWA from June through mid-August. The list represents both WEF/PNCWA new members and transfers from other Member Associations to PNCWA as well as new PNCWA-only members. Welcome to all of you. Please let us know how we can best serve your needs and interests and how you would like to be involved.

Brent Armstrong, City of Shelton
Steve Bacon, Clark Regional Wastewater District
John Barton
Bradley Bjerke, Forsgren Associates
Brietta Carter, University of Washington
Cameron Clark, CDM
Dana Clarke-Devin, Brown & Caldwell
Clyde Crawford
John Damitio, LOTT Wastewater Treatment Facility
Tony Degn, City of Medford
Karen Du Bose, Water & Environment Solutions
Chad Hanson, City of Medford
Colleen Harold, City of Portland
Jeremy Hollingsworth, Brown & Caldwell
Matthew Houser, CONTECH
Elaine Huber, City of Battle Ground
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yan Sandhu, Clean Water Services
alph Scott, City of Medford
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unter Tibbals, Clean Water Services
latt Wales, City of Portland
ui Ward, Om Creation Studio
oug Welch, Gray & Osborne Inc
cott Wilson, City of Seattle Public Utilities
avid Wingate

FROM THE PRESIDENT

Continued from page 5

so politicized, as in the controversy over global warming, that science becomes swamped by rhetoric.

As water and wastewater professionals, I think we must lead the efforts to protect water quality. The truth is, clean water cannot be protected without broad participation from all peoples today and into the future. If the fundamentals of watershed management are to work, WEF, PNCWA and other environmental organizations must be essential players and we must think of creative ways to involve all levels of society in our efforts. Perhaps the best idea is to start with our schools and instill the values of environmental stewardship at an early age. We cannot be bystanders and expect to alter the human patterns of the past. So, get involved, stay involved, and as our kids would say, help save the planet.

CCWWTP Safety

By Steve Hanenburg, Chambers Creek WWTP

We all face similar safety issues at wastewater treatment plants, although no two plants are alike. At the Chambers Creek WWTP in University Place, WA, an additional concern is due to our Fertilizer Manufacturing Facility (FMF) where an Andritz dryer turns biosolids into a dry pelletized product called SoundGRO. The FMF has many safety issues to deal with on a daily basis, such as fall protection on machinery that is three stories high. Most of the equipment has platforms with railings to prevent a fall, and others will be installed for better safety.

The furnace runs at 1200 degrees F and uses 85% biogas and 15% natural gas. We do not have gas storage or gas scrubbing yet, but are discussing them for future improvements. The facility has to be kept as clean as possible because the possibility for an explosion is increased if dust is allowed to accumulate on the equipment. Explosion is also a concern in the storage silos where sensors monitor the temperature. If the temperature gets too high, the silo is purged with nitrogen gas from a 2,000 gallon tank of nitrogen on hand for this purpose. The temperature gauges are reliable and have set off the nitrogen purge a couple of times. Since we started manufacturing SoundGRO, there have been no fire or explosion incidents. While the FMF is in operation, an operator is on duty 24 hours a day and is not allowed to leave the facility unattended. This is different from other areas of the plant where you can walk away and not worry much.

When some equipment is cleaned there are confined space issues. Inside the equipment, a mask or respirator must be used because of the fine dust that accumulates. The confined space procedures are the same for the FMF as for any other part of the plant. The rescue procedure is to call 911. The fire department is very close and their trained personnel can be on site within three minutes.

We bag our product in 50 lb. bags and larger, up to 1- ton bags, or load directly into a truck if the customer wants it that way. A small amount of mineral oil is added to keep the dust down while bagging and for when the product is used by our customers. It takes two employees to run the bagging machinery, and the bags must be handled properly to avoid back injury. In the four years the FMF has been operating, we have had only one back injury associated with lifting. Forklift safety is also an issue as they are used to move pallets of product to storage or load it on a truck.

We maintain a good safety record because of ongoing safety training, monthly safety meetings, and most importantly the "Safety First" attitude fostered by both management and employees. At the end of the day, I know I've been a success if all my personnel go home in the same condition as they showed up.

Steve Hanenburg may be contacted at SHANENB@co.pierce.wa.us.

Section NEWS

Southeast Idaho Section (SEIOS)

has been growing steadily over the past few years due to the involvement of a few good people who care about the water and wastewater industry and want to see continued growth and professionalism in the people who make this industry their career. It takes individuals with a passion for people and for the industry to carry forward a volunteer organization such as this, and the SEIOS Board members make it happen. Every other month, the Section meets in a different Area and at five meetings the Area Director is responsible for providing CEU approved training and lunch (mostly provided by sponsors). The Board meets on the months that do not have a Section meeting. December meetings are special, with elections, recognition of corporate sponsors, Operator of the Year Awards, food, a raffle, donations to a local charity, and rubbing shoulders and having fun.

Some really great people serve their fellow operators and volunteer their time to make this Section work and grow. It works because they care about the environment, about doing a good job, and they care about others.

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***Section Leaders**—email your news and pictures to your Regional Director and copy the newsletter editor, wantlands@cleanwaterservices.org.*

Puget Sound Section

will meet on October 5th at the King County, South Treatment Plant in Renton. This is a great opportunity to obtain CEU's, network and share information. Meetings are held quarterly and this will be the last meeting held in 2010.

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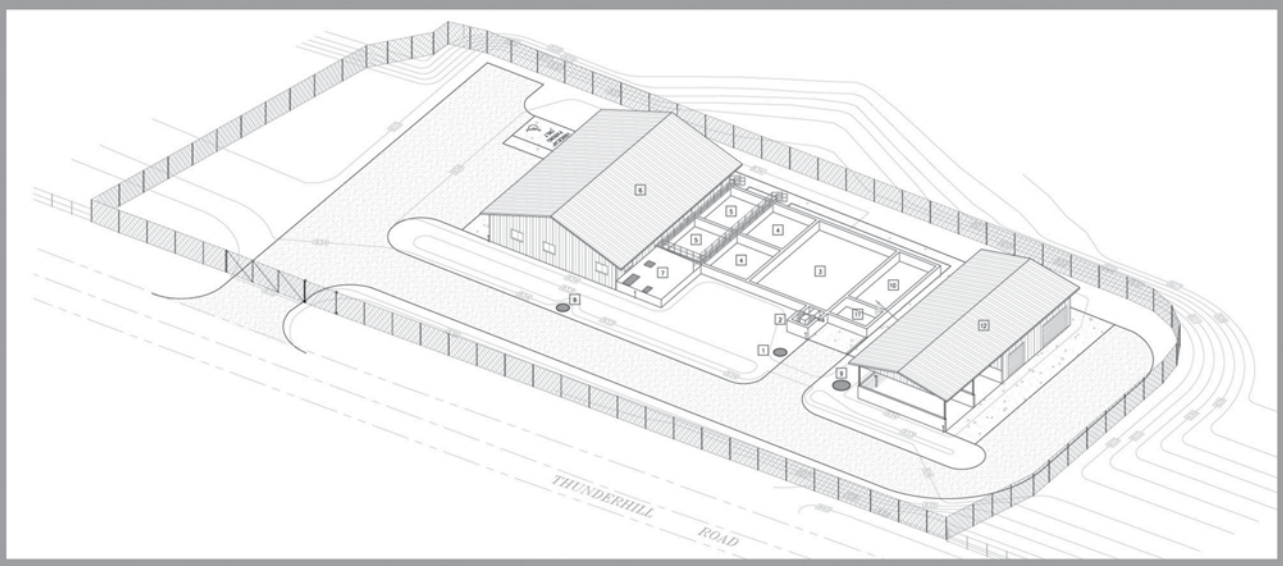
Lapwai, ID

0.38 MGD Membrane Bio-Reactor

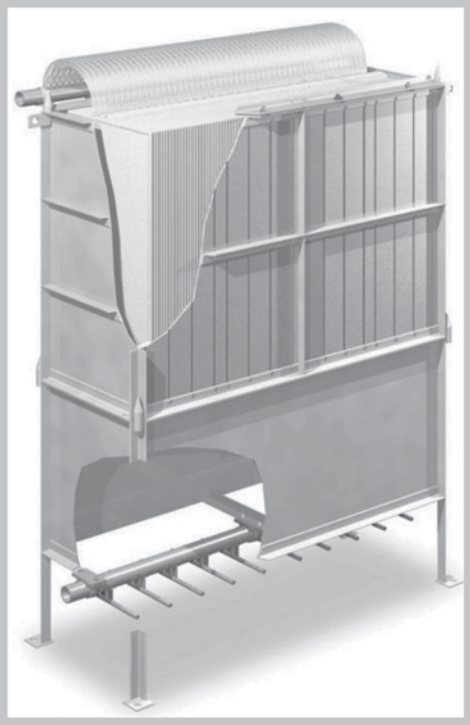


$4.5M Construction Cost

DESIGN CRITERIA	INFLUENT	EFFLUENT
BOD	288 mg/l	< 5 mg/l
TSS	250 mg/l	< 5 mg/l
NH_3	36 mg/l	< 1 mg/l
TKN	50 mg/l	< 10 mg/l TN

Highlights

2 Operators
UV Disinfection
Idaho DEQ Compliant
Greenfield Construction
Class A Dewatered Biosolids



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