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MUNICIPAL STORMWATER MANAGEMENT THE NEW NORMAL

STORMWATER MANAGEMENT & WATERSHED RESTORATION IN PORTLAND, OREGON

by Dan Vizzini & Anne Nelson, City of Portland Bureau of Environmental Services

INTRODUCTION

This article focuses on current strategies being employed by the City of Portland, Oregon, to comply with a complex web of environmental regulations and directives, and do so in a manner that provides cost-effective stormwater management and sustainable watershed restoration. The following discussion builds on the findings and conclusions of an article published in The Water Report in September 2008 ("Portland's Stormwater Marketplace" — TWR#55). We begin by reviewing the drivers for Portland's investments in stormwater management and watershed restoration. We discuss the value of engaging property owners, community groups, and the private marketplace in these efforts, and examine the methods employed by Portland to engage citizens, property owners, businesses and community organizations. We then conclude with some thoughts about the challenges and opportunities that lie ahead as Portland emerges from recession.

CATALYSTS OF CHANGE
REGULATORY MANDATES AND DEGRADED WATERSHED CONDITIONS

Forty years after the passage of the federal Clean Water Act, communities throughout the US are still coming to terms with its regulatory requirements. Many communities also are dealing with significant requirements of the Safe Drinking Water Act, the Endangered Species Act and Superfund legislation. Nearly every community has aging water and wastewater infrastructure, inadequate facilities to manage flooding and stormwater runoff, and few institutional or financial tools to mount an effective, coordinated and sustained campaign to restore and protect local watersheds and water resources. Communities are working in watersheds that have been significantly degraded by decades of industrialization and urbanization. The watersheds are characterized by poor water quality, damaged ecosystems, reduced populations of fish and wildlife, hazardous waste, invasive species, and threats to human health. Taken together, these conditions and responsibilities pose extremely complex challenges that threaten the ecological and economic wellbeing of communities.

Significant and sustained action is clearly needed to restore healthy watersheds and protect water resources. To do nothing threatens current and long-term community health and prosperity. To respond to each regulatory requirement and directive, in isolation, is neither feasible nor sustainable. Degraded ecosystems require significant investments in restoration and long-term commitments to protection and stewardship.

What is a community to do to address its multiple regulatory requirements, while achieving real and sustained environmental uplift?

Portland Stormwater

Combined Sewer Overflow

Regulatory Drivers

Cost-Effective Green Strategies

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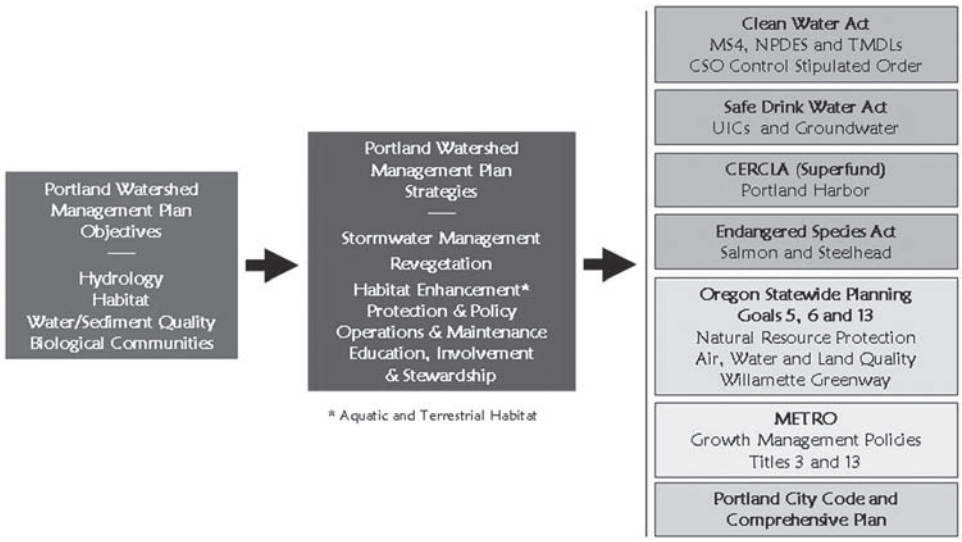
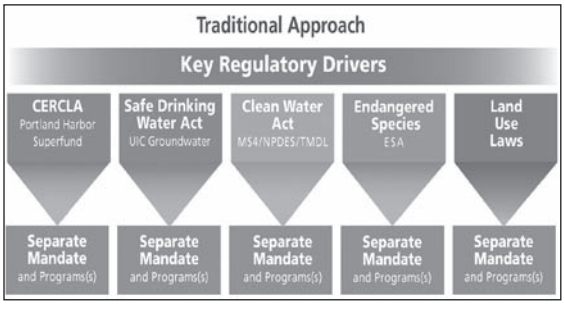
PORTLAND'S RESPONSE

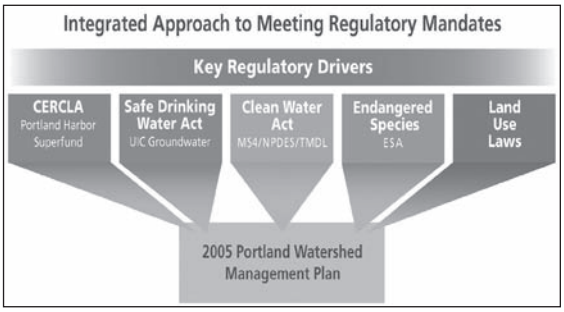
Portland, Oregon, recognized the scope and complexity of this problem in the late 1970s. In 1977, the City created a stormwater utility and instituted a new stormwater management fee to pay for programs and facilities to address urban drainage and flood control issues. In 1983, the City transferred its sanitary engineering, wastewater, and urban drainage functions into a newly-created Bureau of Environmental Services (BES). In 1991, BES began a 20-year commitment to control **c**ombined **s**ewer **o**verflows (CSOs) into the Willamette River and Columbia Slough. In 1996, the US Environmental Protection Agency granted the City its first stormwater permit, a fundamental requirement of the Clean Water Act. In 2005, the City adopted an Integrated Watershed Management Plan that embodied a science-based and comprehensive approach to manage stormwater and restore healthy urban watersheds.

Portland's evolution has been driven by a court order to control CSOs, the federal listing of Portland's urban streams and rivers as impaired water bodies under the Clean Water Act, the federal listing of salmon and steelhead trout as endangered species under the Endangered Species Act, and the listing of Portland Harbor as a Superfund clean-up site.



During the first 15 years of utility operations, Portland pursued traditional engineering strategies to collect and safely convey stormwater to City sewers and local streams and rivers. As federal regulations evolved, the impacts of stormwater runoff became better understood, and the cost of single purpose solutions began to rise. In response, Portland turned to new, natural and multi-purpose strategies that could cost-effectively address multiple regulatory requirements and watershed needs. Portland's stormwater management and watershed restoration programs reflect nearly two decades of experimentation and investment, and advancements in environmental sciences, engineering and technologies, economics, systems planning, public outreach and social networking.





Portland Stormwater

Innovation Principles

Four basic principles provide a foundation for innovation:

1) Sustainability: Portland's programs are based on principles of sustainability that place a premium on actions taken close to the source of stormwater runoff; mimic natural functions; are integrated into the built environment, and achieve multiple benefits. Increasingly, the most effective stormwater management occurs on private property and in adjacent public rights-of-way. Based on these principles, Portland has invested in hundreds of vegetated stormwater facilities and ecoroofs in locations throughout the city, requires their use (when feasible) in new developments, and is promoting and supporting complementary investments by property owners.

2) Engagement: Portland has benefited from very high levels of public support for the investments and regulations needed to clean up the environment, and specifically the Willamette River. Sustained public acceptance, support and adoption of Portland's programs and policies have been achieved through effective public outreach and education — consistent and persistent messaging that reflects community values about the river.

3) Incentives: Portland couples some of the nation's highest utility user fees for sanitary sewer and stormwater services with financial incentives and discounts to strengthen the equity of utility user fees while spurring private investments in stormwater management. Relatively modest incentives produce measurable increases in participation, likely due to the strong public education and outreach regarding these incentives, and visible utility investments in stormwater management projects in Portland neighborhoods.

Watershed Approach

4) Integration: Portland has come to recognize the cost-effectiveness of an integrated watershed approach to investments in stormwater management, CSO controls, or habitat restoration. Increasingly, Portland is pursuing investment strategies that integrate stormwater management and watershed restoration with improvements to city street systems and public parks. The result is the transformation of the urban landscape into a system of green corridors and nodes that support healthy human lifestyles while restoring healthy watersheds.

ACCELERATING ENVIRONMENTAL UPLIFT IN URBAN WATERSHEDS

Green Infrastructure

Portland is currently in the middle of a five-year program to increase investments in green infrastructure by nearly fourfold. These "Grey to Green" initiatives are guided by the Portland Watershed Management Plan (www.portlandonline.com/bes/watershed) and informed by an increasing understanding of the use of local markets, entrepreneurship, social networks, and community building to achieve sustainable results. The following programs represent Portland's legacy and future of successful public outreach and engagement in service to healthy watersheds:

Downspout Disconnection Program

Runoff Disconnection

The Downspout Disconnection Program was established in 1994 to remove residential roof runoff from combined sewers on the east side of the Willamette River. In recent years, the program was expanded to include small commercial and multi-family properties. Canvassers are sent through eligible neighborhoods to assess the potential eligibility of individual properties. The canvasser conducts site assessments and discusses stormwater management strategies with property owners. The property owner is given the opportunity to perform the downspout disconnection and earn $53 per downspout, or authorize the City to hire trained community volunteers to perform the work in exchange for $13 per disconnected downspout. Residents then also receive the Clean River Rewards incentive described below. Since 1994, the program has reached 56,000 properties, and disconnected 1.5 billion gallons of annual stormwater runoff from the combined sewer system. The program provides a significant added benefit by engaging and educating a meaningful number of citizens about the challenges posed by stormwater runoff. The program is scheduled to end in 2011 with the successful implementation of the City's combined sewer overflow control plan.

Private Property Stormwater Retrofit Assistance

Private Retrofit Projects

Private property stormwater retrofit assistance is a logical successor to the Downspout Disconnection Program (DISCO). DISCO was designed to have a broad application and focus on the most-simple private retrofits to remove stormwater from the City's combined sewer system. By contrast, our private property retrofit assistance work is targeted to specific catchments within combined sewer basins that are plagued with undersized sewer lines; areas where aggressive on-site stormwater retrofits are more cost-effective than upsizing combined sewers. We work closely with targeted property owners to plan, design and install rain gardens, ecoroofs and/or other stormwater facilities on private property. The City gives property owners the option of direct assistance (up to $5 per square foot of impervious area managed on commercial sites) if the property owner elects to manage the retrofit themselves. Alternatively, the City offers to construct the retrofit project on the property owner's behalf, free of charge. In either case the City supervises retrofit design and permitting, while the property owner agrees to maintain the stormwater

Portland Stormwater

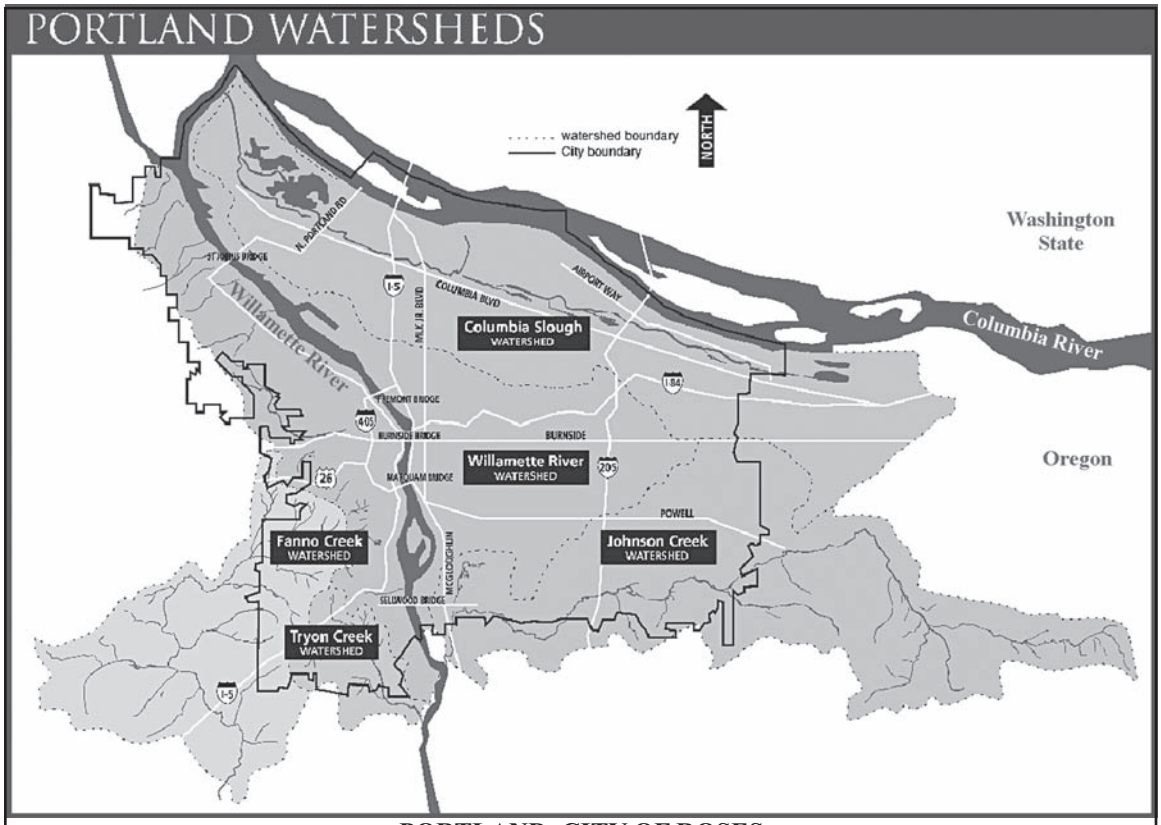
Incentive Grants

facility once installed and established by signing an operations and maintenance agreement that is recorded against the property title and deed.

Ecoroof Incentives

The City offers education, training, technical assistance, and a financial incentive to property owners and developers to add more ecoroofs. The incentive program is part of Portland's Grey to Green Initiative and has a goal of installing 43 acres of ecoroofs in Portland by 2013. The City accepts applications for incentive grants twice each year. The incentive grants are limited to $5 per square foot of an ecoroof project. The program offers workshops and an annual exposition/vendor fair focused on ecoroof technologies, project design, installation and maintenance. The efforts have increased adoption and investment by property owners and increased the competency and responsiveness of roofing contractors and the businesses that supply and support them. Program staffers maintain an Ecoroof Resource List to provide quick access to ecoroof professionals in the Portland region. Program outreach has expanded to include an online blog and video library of ecoroof projects. These public activities have instigated the formation of an independent initiative called the Green Roof Information Thinktank (GRIT). The groups' mission is to build a "network of businesses, government agencies, non-profit organizations and others, collaborating to grow the knowledge and use of green roofs in the Pacific Northwest."

Area Watersheds



PORTLAND, CITY OF ROSES

Portland occupies 145 square miles, spread over five distinct watersheds at the confluence of the Willamette and Columbia Rivers. The City is home to 584,000 residents, and serves as a regional, national and international center for commerce, industry, research, and services.

Well-known for its moist and moderate climate, Portland receives an average 37 inches of annual precipitation, generating 17 billion gallons of annual urban runoff. Rain events are relatively mild, and are spread out across an average of 137 days (34 inches of rainfall) during a 9-month rainy season that extends from October through June. The remaining 3 months (July-September) are significantly drier, producing an average of 17 rain days and 3 inches of rainfall.

Runoff Management

Portland's urban landscape is varied. Neighborhoods east of I-205 sit on super-pervious soils. The city's densely developed commercial and residential core is generally well-draining, although local conditions may vary greatly. The west side of the Willamette River, and parts of the Johnson Creek Watershed in southeast Portland, are hilly and have poorly-draining soils.

Stormwater runoff from this varied urban landscape is managed by Portland's stormwater utility. The utility works in concert with the City's sanitary sewer utility to operate and maintain 2,300 miles of sanitary, stormwater and combined sewers, 8,600 stormwater sumps in public rights-of-way, 123 miles of stormwater drainage ditches, and 750 detention and pollution reduction facilities. The stormwater utility will raise about $77 million in user fees in the current fiscal year to finance capital projects, operations, regulatory activities, and incentive programs.

Tree Incentives

Portland is pursuing multiple strategies to increase the planting and maintenance of street trees and yard trees throughout the city. One Grey-to-Green Initiative funds a Neighborhood Tree Program in partnership with a local non-profit community organization — Friends of Trees (FOT). The community group has organized volunteers to plant 2,500 street trees and monitor the planting of another 1,800 street trees in the 2009-2010 planting season. A second Grey-to-Green Initiative offers an incentive ("Treebate") to stormwater ratepayers who plant trees on their residential private properties in the form of a utility bill credit. The Treebate pays for 50% of the purchase price of the tree, up to $50 per tree. A sliding scale is used to encourage the planting of native species that will mature into large trees. The City cultivates partnerships with local retail nursery partners to market the Treebate to customers. Other outreach has included utility bill inserts, a web site, and media coverage. In the program's pilot season (2009-2010), Treebate credits were granted for 1,101 trees — more than 200% over the 500 tree goal. A third Grey-to- Green Initiative focuses on street trees through a partnership with Friends of Trees, the City's transportation maintenance bureau, and local residents. This program yielded nearly 3,000 new street trees in 2009-2010. The program has been expanded to include partnerships with Portland Parks & Recreation, Housing Authority of Portland, and community groups. These programs rely on door-to-door canvassing to educate and solicit support from Portland residents. In 2010, City canvassers visited over 50,000 properties.

Grants & Volunteers

Watershed Stewardship Grants

Portland created the Watershed Stewardship Grant Program in 1995 to provide incentives for community-based and grassroots efforts to promote and protect healthy watersheds. The program offers up to $10,000 to community groups for a wide variety of projects that advance watershed management goals. The Program provides technical assistance to community groups, and financial support and training to community volunteers. Funded projects have included ecoroofs, parking lot swales, habitat restoration, and downspout disconnections. Since 1995, the program awarded 192 grants, engaging more than 39,000 citizens who donated nearly 317,000 volunteer hours. City grants totaling nearly $885,000 have attracted more than $3.1 million in matching funds.

User Fee Discount

Clean River Rewards

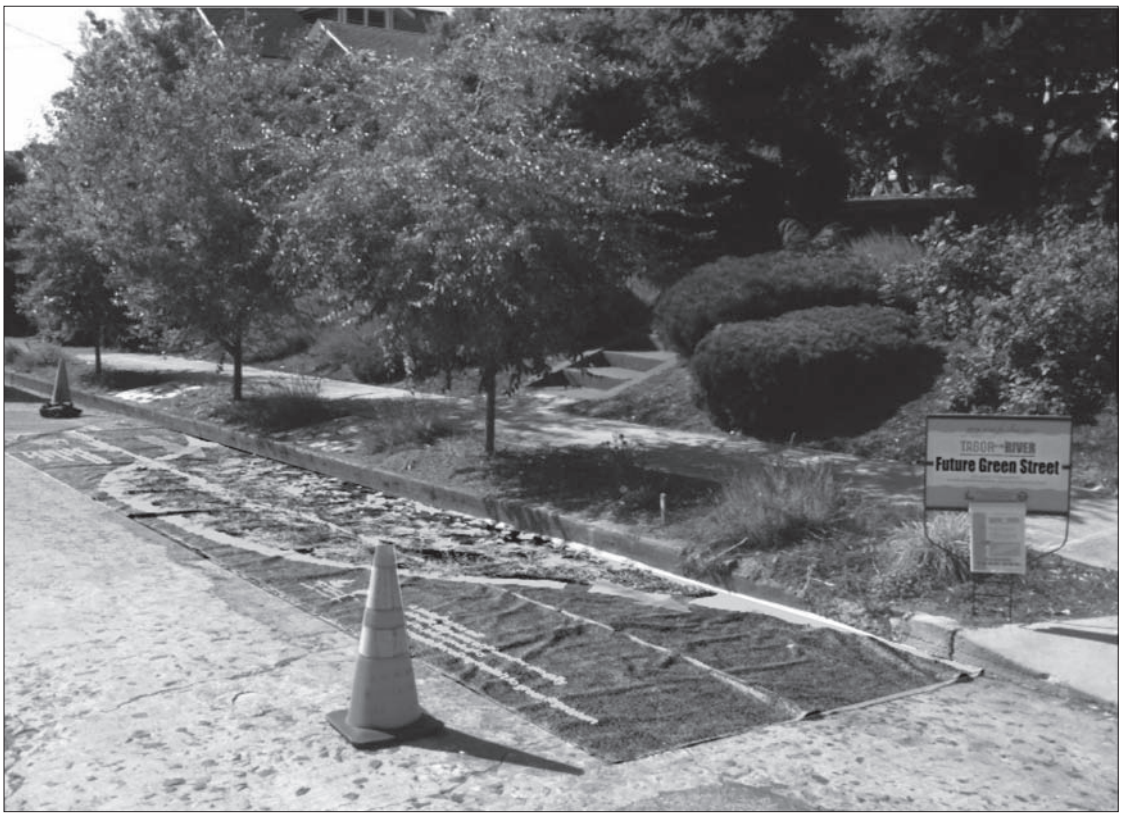
In July 2006, Portland began itemizing stormwater utility user fees to highlight the distinction between the costs of managing street system runoff versus runoff from private property. The itemized bill led to the implementation of a stormwater user fee discount beginning in October 2006. The discount — Clean River Rewards — makes it possible for ratepayers to eliminate the on-site portion of the stormwater bill, about 35% of the total user fee. Discounts for single-family residences are based on the on-site management of roof runoff. All other ratepayers (multi-family residential, commercial, industrial, and institutional ratepayers) receive discounts based on the extent and effectiveness of private facilities to manage the volume, flow rate, pollution, and disposal of runoff for all on-site impervious areas. To date, nearly 35,000 ratepayers have registered for Clean River Rewards.

Portland Stormwater

Dedicated Green Fund

Green Street Incentives

The City has dedicated considerable resources to design, install and monitor green infrastructure to manage street runoff. Under the Grey-to-Green Program, the City plans to install more than 900 green street planters, curb extensions and swales by 2013. The City works with property owners, neighborhoods and community organizations to locate and install green street facilities in ways that reflect the neighborhood aesthetics and respond to local requirements for on-street parking. Outreach includes on-the-ground workshops, community open houses, street fairs, and the effective use of a canvas that can be easily rolled out to illustrate a life-sized facility. The program is supported by a City policy to promote green infrastructure as the preferred method of managing street runoff. The policy includes a requirement that certain types of public street projects dedicate 1% of street improvement project costs to a Green Investment Fund. Proceeds from the fund are used to finance green street projects that are initiated by property owners and neighborhoods. In addition to promoting the installation of new facilities, the City is working with neighborhoods and community groups to address the need for long-term maintenance. The City Green Street Stewards Program (launched in the fall of 2010) provides a way for community members to play a role in the care of Portland's green streets. Stewards register online, select stewardship sites from an inventory of green street facilities, receive information and guidance on their maintenance responsibilities, and use the web site to record their stewardship activities. While the City retains primary responsibility for green street maintenance, Green Street Stewards perform simple tasks including trash and debris removal to make sure stormwater flows into the facilities are unimpeded.



Schools' Runoff Targeted

Greenbucks for Green Schools

School campuses are some of the largest generators of stormwater runoff in the city due to their large impervious areas. These neighborhood-based institutions have the available land to host stormwater management facilities, and to do so in ways that advance citizen outreach, education, and involvement. Portland works closely with local school districts to locate and build green infrastructure, including shared facilities to manage street runoff as well as runoff from school buildings and paved areas. The facilities are integrated into the school campus and frequently serve as outdoor classrooms. In 2010, the City expanded its partnership with local schools by developing a way for City ratepayers to help defray the costs of maintaining green infrastructure on school property. In addition to the financial assistance, the City provides stormwater management and stewardship training for school district staff about stormwater management; design assistance for stormwater retrofits and new construction projects; educational programs to teach scientific principals and the importance of stormwater management for watershed health; and assistance with the development of curriculum components related to the on-site stormwater systems.

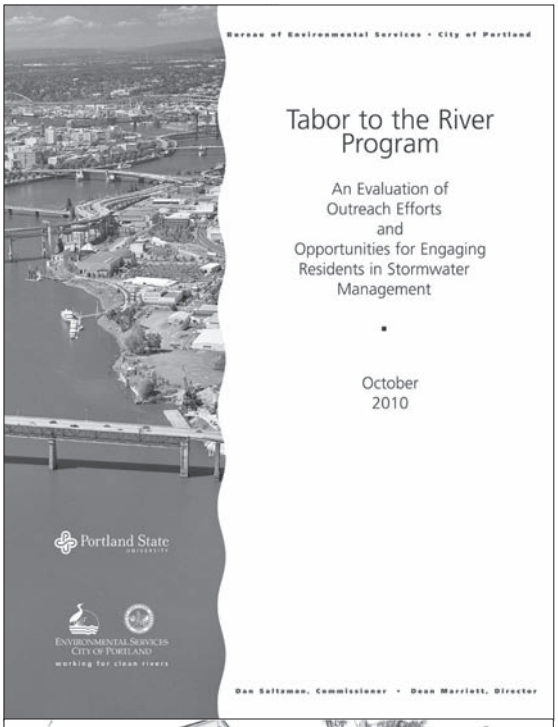


Photo credit: Sam Policar

COMMUNITY EDUCATION/PARTNERSHIPS

Community outreach, education and involvement provide a strong foundation for Portland's work to manage stormwater and restore healthy watersheds. For more than 30 years, the City has produced consistent and persistent messaging about the links between stormwater runoff and the health of Portland's rivers and streams. Pioneering initiatives like the Downspout Disconnection Program brought outreach information directly to the doorsteps of thousands of Portland residents and engaged the active participation of community organizations. These early experiments in civic engagement proved the lasting importance of the building of relationships with property owners, neighborhood and business associations, educational institutions, communities of faith, and community non-profit organizations, and provided us a strong foundation upon which to build.

The Tabor to the River Program (www.portlandonline.com/bes/tabortoriver) exemplifies the fundamental role that community education and engagement plays in Portland. The Tabor to the River Program is likely the largest urban green infrastructure retrofit/watershed enhancement program of its kind.

In a 1400-acre area of inner southeast Portland, BES is taking several important steps:

- Constructing 500+ green stormwater facilities in the public right-of-way
- Providing 100+ private property stormwater retrofits
- Planting 3,500 trees
- Replacing 81,000 linear feet of combined pipe
- Removing acres of invasive plants at key natural areas in the program area
- Delivering a comprehensive public outreach and education program to support this work, build new community partnerships, and encourage the community as a whole to initiate watershed enhancement projects on their own property to "BE A PARTNER FOR WATERSHED HEALTH."

The program is not only innovative as it delivers an integrated pipe/green street/watershed retrofit to the 17,000+ residents of the program area, but it simultaneously creates a model to move through other parts of the city and deliver this multi-objective solution to areas where our infrastructure is most in need of repair/replacement.

Hydraulic Capacity

Right-of-way stormwater facilities are placed in areas of the highest need and highest ability to capture and treat street runoff. Street tree planting is prioritized to areas that have pipes with hydraulic capacity issues. We encourage street and yard trees throughout the area, but by prioritizing these areas we can extend the life of the pipes and therefore our capital and operational resources. Private property retrofits are targeted where we have very constrained and overtaxed infrastructure, and not enough space exists in the right of way to manage the ever-growing capacity demands.

Aging Pipes

BES has a strong public involvement policy and history developed for the upkeep and replacement of our aging pipe infrastructure. While this program delivers excellent customer service for traditional pipe projects, we also have a greatly expanded outreach and education scope to match the greatly expanded scope of constructing green infrastructure and watershed enhancement projects. Green infrastructure is living infrastructure that ultimately depends on the understanding and support of adjacent property owners and surrounding community. BES will maintain and ensure the integrity of the green infrastructure for the long term. However, we are not able to be the eyes and ears of all facilities all the time. If the surrounding community becomes stewards of the green infrastructure, in the broadest sense of the word, we will ultimately save ratepayer dollars. If, because of lack of understanding or support, residents remove plants from the facility and replace them with ornamental roses, pave over the facility to create parking or dump chemicals or other waste into the facilities, we will need to continually pay to replant/repair/rebuild the facilities. At the very least, an informed and supportive community member can help steward the facilities by being the eyes/ears and let us know if something goes awry with one of our facilities. It's far cheaper and infinitely more beneficial community building to spend resources upfront building strong understanding, support, and ideally excitement about the green infrastructure as opposed to continually battling misunderstandings and potential malfunctioning of facilities after they're built.

Community Stewards

Portland Stormwater

Extending Infrastructure Life

Sense of Community

Engagement Survey

Additionally, as we're able to share information on multiple BES initiatives during our education and outreach work, we're saving resources by not delivering potentially duplicate information on a project specific basis. A huge value added objective is to encourage stormwater and watershed projects on private property as part of the Tabor to the River Program. Building community and excitement around what is happening in the neighborhood increases public interest and participation in related initiatives. For example, we are seeing more rain garden installations and attendance at Naturescaping classes and stormwater bike tours. In the long run, as much work as we're doing in the right-of-way, we still need other property owners to be partners for watershed health to fully achieve the goals of the Portland Watershed Management Plan. The more rain gardens, disconnected downspouts, and increased native canopy on private property, the less volume of stormwater we'll have entering our pipe system — thus extending the life of our infrastructure and further expanding the collective knowledge base and project portfolio through the city. The Downspout Disconnection Program's success inspires us! One and a half billion gallons removed from the combined pipe system, one downspout and one property owner at a time conveys the power of community taking action on their own property to benefit our *collective* watershed health.

To create this foundation of understanding and support of the project, we provide comprehensive education and outreach to support all elements of the program and create a sense of community around the program. This work ideally begins a year ahead of project specific outreach (i.e. installation of public works projects, trees, private facilities, invasive plant removal) to inform and engage the neighborhood in all elements of the program. We do this via newsletter; media postings; bike tours; free workshops; partnerships with local neighborhood and community organizations; leveraging outreach opportunities through other partner agency events with similar goals/audiences; art of stormwater exhibits in local coffee shops, libraries, business and schools; and school presentations and partnerships with local universities that use the data and project information as part of their studies. Some of those same students work with us through a partnership with Portland State University (PSU), who, for more than 15 years, have provided graduate students to lead implementation of our watershed stewardship grant program and educational efforts.

As part of our long-term work to create a model program of integrated sewer/stormwater/watershed repair and enhancement — supported by a comprehensive outreach and engagement program — we partnered with Dr. Vivek Shandas, professor at PSU, to deliver a survey to 2500+ households and analyze the results to determine best opportunities to engage residents in ongoing stormwater management. The resulting report validated our efforts which were already underway and provided new insights to help us direct our work to be the most effective and cost-effective possible.

Portland Stormwater

Urban Stewards

Rain Gardens

We will continue working through our university partnership to frame ongoing efforts and leverage our dollars to provide sound foundations for our efforts and their results. One of the most notable findings from the report indicates that, in the surveyed area, respondents that identify with a community of some sort (PTA, sports club, neighborhood group) are the most likely to participate in stormwater/watershed projects in their neighborhood. Thus, supporting community building with our partner agencies is a sound investment of time for the long-term implementation of stormwater projects.

To this end, we recognize that while we can engage cost-effectively while we are implementing Tabor to River (T2R) projects, we are staff limited with a heavy load of critical infrastructure work in other neighborhoods. To ensure continued capacity building and watershed project implementation, we have strong linkages with SE Uplift, East Multnomah Soil and Water Conservation District (EMSWCD), neighborhood associations, and sustainability groups forming in the area that share information and involvement opportunities to their constituents and create projects of their own that are mutually beneficial for all. Collectively with the aforementioned partners, SOLV and Oregon State University, we are developing an Urban Master Watershed Stewards program to provide this ongoing community building, education, and support to implement projects. Thus the momentum we're building now and engagement in community watershed stewardship will continue to grow, long after our targeted capital outreach programs have moved into other areas of the city.

From this initiative, we anticipate more engaged community members and numerous projects resulting from their volunteer service, similar to the proposed projects borne out of an expanded rain garden volunteer leadership training delivered by EMSWCD and developed in partnership with EMSWCD, BES, Metro, OSU Master Gardeners, and the City of Gresham. From that training, we've already installed two rain gardens at a key large property in one of our project areas. The rain gardens were installed by volunteers as practicum to their eight hours of training, and were supervised by BES and EMSWCD staff. The project was funded through a grant written by the property owner to BES' Community Watershed Stewardship Program, and designed and permitted by BES staff. The projects are signed to identify the successful community partnership and literally are next to key right-of-way facilities in one of the active T2R project areas. The volunteers will now complete their own project rain garden project.

Rain garden project options include:

- Creating a rain garden on their own property
- Providing education on accessing the appropriate resources to building or learning more about rain gardens in their community
- Completing grant proposals to build other rain gardens
- Providing tools to the local tool lending library for neighbors to check out to build their own rain gardens

We view this process as accomplishing several goals. Our community outreach not only informs the city's work, but provides the tools necessary for everyone in the project area to contribute and have fun being a partner for watershed health.

Portland Stormwater

Greenway Network

"Big Pipe" Investment

CONCLUSIONS

As we continue to expand our Bureau's efforts to improve watershed health through our multiple programs, we also continue to work with other bureaus to integrate the Portland Watershed Management Plan. We are currently updating our city's Comprehensive Plan for the next twenty years. This effort places a strong emphasis on public health and equity and it also intended to guide actions to achieve ambitious climate change goals (both mitigation and adaptation). In that process the City is exploring ways to better integrate green infrastructure into interbureau planning, funding, design, and implementation for capital systems — streets, stormwater, parks, and natural resource restoration. A key concept being considered focuses on creating a greenway network (including stream and forest corridors, pathways, and green streets) that would provide habitat, pedestrian/bike connections, increased tree canopy, and green stormwater connections.

We've come a long way since BES' inception when we took on the challenges of maintaining aging pipe infrastructure and the other crucial responsibilities of delivering reliable sewer service to a large municipality. This is still one of our primary charges and we deliver, but we continue to push ourselves to do what we do better, for less money and more benefits. While our $1.4 billion investment in controlling CSOs will see completion of the "Big Pipe" by the end of 2011, our work doesn't end there. Like many jurisdictions, our infrastructure continues to age, local capacity issues continue to stress our systems, and more demands will be placed on our shrinking budgets.

To meet these challenges, we'll continue increasing our portfolio of green stormwater management techniques. This will simultaneously meet our regulatory and City policy drivers, improve watershed health and neighborhood livability, plus increase habitat connectivity. By proactively expanding green infrastructure and native vegetated cover, we are also building our resilience to the unpredictable future of climate impacts, the challenges of which are way beyond a municipality's capacity alone. By building community capacity, strengthening partnership, sharing knowledge and encouraging neighborhood participation in enhancing watershed health, we are facing the future together. With a shared understanding of the multiple benefits of green infrastructure to correct problems from the past, improve conditions in the present, and build resilience for the future, we will continue to find new ways to improve watershed health, our infrastructure, and our communities.

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Stormwater Conference Presentation, March 2nd, Seattle

Author Anne Nelson will be presenting an overview of Portland's Watershed Approach to Stormwater Management for the "**Innovative Stormwater Compliance**" portion of the Northwest Environmental Business Council's "**Managing Stormwater in the Northwest**" **Conference on March 2nd, in Seattle** (see Calendar, page 31). Northwest Environmental Business Council website: www.nebc.org

Dan Vizzini is a principal financial analyst for the Portland Bureau of Environmental Services, with primary assignments involving financial, legislative, intergovernmental, interagency, and public policy matters. He was the Bureau's project manager for the Stormwater Marketplace Project, and continues to serve as the Bureau's liaison to the Willamette Partnership ecosystem credit trading initiative, and the Portland Small Business Advisory Council. Dan also serves as a technical advisor to the Portland Sustainability Institute EcoDistricts Initiative. Current projects include an investigation into policies governing decentralized, natural wastewater treatment systems. In addition to a career in public service, Dan has served on the City Council for the City of Lake Oswego, Oregon, and served for nearly ten years on the Lake Oswego Planning Commission. Dan was born and raised in New Jersey. He earned a BA in Economics from Boston University in 1976, and moved to Oregon with his wife in 1979.

Anne Nelson is an Environmental Program Coordinator with the City of Portland Bureau of Environmental Services. Her work focuses on linking watershed health, policy development, community initiatives, and research to help implement the Portland Watershed Management Plan. She developed and leads the outreach and education strategy of the Tabor to the River Program. Integral to this program is the development of a research-based model in partnership with universities, schools, community members, and non-profit partners to grow the social infrastructure necessary for long-term functioning of green infrastructure and improving overall watershed health.

Columbia Toxics Reduction

River Basin Attributes

Economic Activities

COLUMBIA RIVER BASIN TOXICS REDUCTION

ACTION PLAN IN EFFECT

by Mary Lou Soscia, US Environmental Protection Agency, Region 10 (Portland, OR)

Introduction

In September 2010, the US Environmental Protection Agency (EPA) released the 2010 Columbia River Basin Toxics Reduction Action Plan with the hope that it would provide the inspiration to spur government, industry, and individual actions to reduce toxics throughout the Columbia River Basin. The plan was a call to action, where EPA has invited citizens, government, industry, and non-profits to take on toxics reduction by committing to one or more of 61 toxic reduction actions that were identified in the plan (see list following this article).

The Columbia River Basin is one of the world's great river basins in terms of its land area and river volume and is home to more than 8 million people. The Basin spans two countries, seven States, and roughly 259,000 square miles. It is our country's fourth largest watershed, the largest river input into the Pacific Ocean in North and South America, and once boasted the largest salmon runs in the world. The Basin also serves as a unique and special ecosystem, home to many important plants and animals.

The river is economically vital to many Northwest industries such as sport and commercial fishing, agriculture, hydropower (with over 370 dams), wind energy, recreation, and tourism. Many of these activities have contributed to significant habitat and wetland loss throughout the Basin. Salmon runs have been reduced from a peak of almost 16 million fish annually to a fraction of their original returns.

COLUMBIA RIVER BASIN

Columbia Toxics Reduction

Tribal Fish Consumption

Toxics Working Group

State of River Toxics Report

Contaminant Focus

Initiatives & Actions

Commitment

Background

The Columbia River Basin is home to many Indian Tribes, who have depended on the Basin for physical, spiritual, and cultural sustenance for centuries. High fish consumption and increased exposure to toxics by tribal people is a significant environmental justice issue. Public and scientific concern about health of the Basin ecosystem is increasing. There are several Superfund clean up sites in the Basin — Portland Harbor, Hanford, Couer d'Alene River Basin and Lake Roosevelt — and there are growing concerns about toxic contamination in fish, aquatic life, and wildlife.

Based on Columbia River data in a 1992 national EPA contaminant survey, the Columbia River Inter-Tribal Fish Commission and EPA conducted two studies. A fish consumption survey in 1995 showed tribal members eat six to eleven times more fish than the EPA national average; and a fish contamination study in 2002 showed the presence of 92 contaminants in fish consumed by tribal members with some levels above EPA levels of concern. Recent studies and monitoring programs have shown/indicated significant levels of toxic chemicals present in fish and the waters they inhabit, including **d**ichloro**d**iphenyl**t**richloroethane (DDT), **p**oly**c**hlorinated **b**iphenyls (PCBs), mercury, and emerging contaminants such as PBDEs (**p**oly**b**rominated **d**iphenyl **e**thers).

In 2005, EPA joined with other partners to form the Columbia River Toxics Reduction Working Group. The group consists of individuals that work together and meet regularly in a forum to share information and collaborate on toxics reduction. This group is modeled after other collaborative efforts that EPA is engaged in around the US, such as in the Chesapeake Bay and Puget Sound. Key partners in this group include federal, state, and local governments; Columbia River tribal governments; the Lower Columbia River Estuary Partnership; the Northwest Power and Conservation Council; Columbia River Inter-Tribal Fish Commission; agricultural representatives including farmers, Soil and Water Conservation Districts and the Natural Resources Conservation Service; local watershed councils; industry including pulp and paper, shipping ports, and NIKE; municipal dischargers and the Association of Clean Water Agencies; and non-profits including Columbia Riverkeeper, Oregon Environmental Council, and Salmon Safe.

The Columbia River Basin State of the River Report for Toxics (http://yosemite.epa.gov/r10/ecocomm.nsf/Columbia/SoRR/) was completed in January 2009 under the leadership of EPA Region 10 with the support and guidance of the Working Group. In the State of the River Report for Toxics, the Working Group described the risks to the Basin's human and animal communities from toxics, and set forth current and future efforts needed to reduce toxics. The report focused primarily on four contaminants: mercury, DDT and breakdown products, PCBs, and PBDE flame retardants. These four contaminants were chosen as focal points because they are found throughout the Basin at levels that could adversely impact people, fish, and wildlife. However, many other contaminants are found in the Basin, including arsenic, dioxins, radionuclides, lead, pesticides, industrial chemicals, and "emerging contaminants" such as pharmaceuticals found in wastewater. The prevalence of these contaminants in the Columbia River Basin is of great concern since they can have severe impacts on human and ecosystem health.

The Columbia River Basin is receiving additional national attention and visibility. In 2006, EPA designated the Columbia River Basin as a priority Large Aquatic Ecosystem in the same class as Chesapeake Bay, the Great Lakes, and the Gulf of Mexico. In 2010, the Columbia River Restoration Act was introduced in both the House and Senate, and passed in the Senate committee with bipartisan sponsors. The proposed legislation included language to create a Columbia River Toxics Reduction Working Group including states, tribes, local governments, industry, utilities, ports, private landowners, Soil and Water Conservation Districts, and the public, building off the existing Working Group and Lower Columbia River Estuary Partnership. The legislation also proposed that EPA have governance and accountability responsibilities. Although it was not finalized in Congress, its introduction was an acknowledgement of the importance of the Columbia River Basin nationally.

Action Plan Components

The Columbia River Basin Toxics Reduction Action Plan (available at: www.epa.gov/region10/Columbia) is made up of five initiatives, and identifies 61 specific actions to reduce toxics (the complete follows article — page 15). First tier actions are those that can be done through coordination with existing resources; second tier actions require additional resources. The Action Plan gives a five-year framework for a collaborative, Basin-wide approach to toxics reduction. The scope of the Action Plan is on the entire US portion of the Columbia River Basin including most of Oregon (OR), Washington (WA), and Idaho (ID) and parts of Montana, Nevada and Utah with a priority focus on the U.S. EPA Region 10 portion of the Basin (OR, ID and WA). This Action Plan is intended to complement the 1999 Comprehensive Conservation and Management Plan issued by the Lower Columbia River Estuary Partnership, established through the Clean Water Act's National Estuary Program and addressing approximately 5% of the Basin. As more information becomes available and partnerships develop, additional actions will likely be identified, especially if increased and sustained resources become available.

Increase Public Understanding and Political Commitment

The first initiative is to increase public understanding and political commitment to toxics reduction. Key actions include the continuation of the Working Group, establishing an executive level collaboration

Columbia Toxics Reduction

which can affect national dialogue; working closer with the Canadian government; providing recognition for Toxics Reduction actions and increasing River celebrations; and using a regular newsletter and workshops to highlight and exchange information on key toxics issues.

Reduction Actions

Increase Toxics Reduction Actions

The second initiative is to increase toxics reduction actions. The Working Group recognized that more government and industry leadership on pollution prevention/green chemistry is needed; collection programs for pharmaceuticals, pesticides, mercury should be increased; agriculture programs to reduce sediment and pesticide use should be increased including Pesticide Stewardship Partnerships; the Oregon human health criteria revision and other human health criteria revision work efforts should be continued to protect human health; and coordination with ongoing efforts including the Oregon Toxic Reduction Strategy (www.deq.state.or.us/toxics/) and Washington Ecology's Toxics Threat Initiative (www.ecy.wa.gov/toxics/index.htm) are also very important.

Monitoring

Increase Monitoring for Source Identification: Reduce Toxics

The third initiative is to increase monitoring for source identification, and then focus attention to reduce toxics. This includes increasing monitoring to identify sources, identifying contaminants of concern for priority focus, and establishing toxics reduction efforts which include effectiveness monitoring; continuing to seek and leverage resources to supplement existing monitoring by Agencies, organizations, and Tribes in the Basin; supporting watershed-based monitoring efforts that link directly to toxic reduction efforts, such as TMDLs, source assessments, and Pesticide Stewardship Partnerships; and finally developing accessible, public-friendly reports to broadly share monitoring information.

Regional Program

Develop a Regional Multi-Agency Research and Monitoring Program

The fourth initiative is to develop a regional, multi-agency research and monitoring program which includes identifying and inventorying existing toxics research being conducted in the Basin; convening scientists to develop a Columbia River research plan; conducting research based on research plan priorities; developing indicators of ecosystem health; and conducting "Control Studies" to evaluate the effectiveness of Best Management Practices, toxics reduction efforts, and emerging reduction strategies.

Data Management

Develop a Data Management System to Share Information

The final initiative is to Develop a data management system to share toxics information around the Basin, which would include convening scientists to discuss options for managing Columbia River Basin toxics data, evaluating how other large aquatic ecosystems manage data; ensuring inclusion of spatial component (latitude, longitude) in new and available data; conducting spatial analysis; and creating a data stewardship program hosted and managed by a single entity.

Successes

Early Leaders - Voluntary Actions

Early leaders have emerged in this voluntary, grassroots movement who are providing successful examples of what can be done to reduce toxics both locally and globally. One example is Mike Omeg (www.omegorchards.com) in The Dalles, Oregon, who has been working in his family orchard to grow sustainable fruit. Another is Ron Brown, of Blue Mountain Cider (www.drinkcider.com) in Milton Freewater, Oregon, with his work to reduce pesticide use in the Columbia River Gorge. The Wy-East Resource and Conservation District has also been working with farmers to help apply weather technology to reduce the use of organophosphate pesticides and work with growers to switch to less harmful alternatives. The Sunnyside Irrigation District worked with the Yakama Nation and the Washington Department of Ecology to reach a 20-year goal for DDT reduction in sediment loads in five years. As a result, in May 2009, the Washington Department of Health lifted the DDT fish advisory for the Yakima River Basin, which had been in place for many years and was the result of decades of DDT use for agricultural production in the Basin. DDT, which binds to soil particles, was dramatically reduced in fish and water through the use of best management practices put in place by this cooperative and collaborative partnership. Many other DDT fish advisories exist in the Basin so this work has a high potential for replication.

Industry Collaboration

Notable and creative efforts continue to surface to reduce Columbia River Basin toxics. The GreenXchange was established to provide an industry collaboration for exchanging green chemistry technology. The first major work effort is NIKE's environmentally preferred rubber which has reduced the toxics load by 95%.

Land Management

Salmon-Safe is providing a market-incentive, collaborative approach to working with farmers and technical experts to protect water quality and wild salmon through the application of land management standards for integrated pest management, irrigation water use, riparian and wetland management, and erosion and sediment control. Salmon-Safe's independent third-party certification process takes a "whole farm approach" which embodies the principle that salmon are dependent upon the health of an entire watershed. In addition, Salmon-Safe has developed certification standards for urban land management, with a focus on stormwater management, site design, and integrated pest management. Over 60,000 acres of productive agricultural land have been certified, joined by numerous corporate and collegiate campuses, and municipal parks in urban sectors.

Columbia Toxics Reduction

Collection Programs

Mary Lou Soscia currently serves as the Columbia River Coordinator for the US Environmental Protection Agency (EPA), Region 10. In this role, she is leading the Columbia River Toxics Reduction Strategy which includes leadership on the Columbia River Toxics Reduction Working Group, a collaborative watershed group working to reduce toxics in the Columbia River Basin. She is also leading the implementation of the Columbia River Basin Toxics Reduction Action Plan, released by EPA in September 2010, with over 60 actions for collaborative toxics reduction in the Basin; and she is leading the collaboration for the three governments (state, federal and tribal) to develop revised Oregon human health criteria to protect high fish consumers from toxics. Ms. Soscia has had over thirty years of experience with state, federal, and tribal government specializing in watershed and river management issues. Ms. Soscia has a Bachelor's degree in Geography from Virginia Tech and a Master's degree in Geography from the University of Maryland.

Recently, the Port of Vancouver challenged their tenants to reduce their toxic footprints. The Port is also taking a number of actions including treating 99% of stormwater discharges before it reaches the Columbia, using a combination of stormwater best management practices such as a bio-retention system, a retention pond, hydrodynamic separators, and bio-swales. By 2009, the Idaho State Department of Agriculture has collected close to one million pounds of pesticides through voluntary collection programs. Growers, homeowners, and applicators often have pesticides that have been unusable because of expiration, cancellation, deterioration, or crop changes. Permanent collection points are established throughout the state and materials are taken to a licensed facility for incineration or disposal.

The Oregon Department of Environmental Quality working with the Oregon Extension Service, local watershed councils and farmers have established Pesticide Stewardships Partnerships in watersheds throughout Oregon to reduce current use pesticides. In Oregon's Walla Walla Basin in eastern Oregon, this partnership enabled a 70% reduction in chlorpyrifos, an organophosphate pesticide with toxic effects, in local streams through the use of best management practices, including switching to less toxic pesticides and mineral oil, vegetated buffers, and spray calibration. Many other watersheds are interested in these partnerships to help promote less pesticide use, which has a beneficial economic effect for farmers.

These voluntary efforts are drops in the bucket compared to the toxic reduction actions that are needed, but they are creating a ripple effect in a river basin that currently lacks a national initiative.

National Implications

The work in the Columbia River Basin can provide leadership and support national chemical policy reform, with an increased emphasis on pollution prevention and "green chemistry."

There is increasing societal awareness and concern about toxics in our environment. EPA estimates that there are between 80,000 and 100,000 chemicals in use in commerce. Many of these chemicals are making their way into the magnificent Columbia River Basin and affecting the ecosystem and the fish that tribal people have consumed for more than 10,000 years. To preserve the Columbia River Basin ecosystem for future generations, we must make important changes and take actions to reduce toxic contamination throughout the Basin.

"Green chemistry" is a term that is loosely defined as "reducing or eliminating the use or generation of hazardous substances in the design, manufacture and application of chemicals and chemical products." EPA Administrator Lisa Jackson has identified a priority focus on assuring the safety of chemicals in the U.S. and is leading efforts to work with Congress, members of the public, the environmental community, and the chemical industry to reauthorize the Toxic Substances Control Act (TSCA). National chemical policy reform provides an opportunity for EPA to work in partnership with others to quickly modernize and strengthen the tools available to increase confidence that chemicals used in commerce — which are vital to our Nation's economy — are safe and do not endanger the public health and welfare of consumers, workers, and especially sensitive sub-populations such as children, or the environment.

Conclusions

Coordination and leveraging existing resources can help accomplish some toxic reductions. Accountable and measurable success, however, will only happen with increased resources, political commitment, and an engaged and informed public. We must all work together to increase toxic reduction actions, foster a better understanding of toxic contamination, and increase public and political engagement and leadership in decisions that can affect the future human and ecosystem health of the Columbia River Basin.

The Columbia River Basin Toxics Reduction Action Plan is intended to be a catalyst for collaborative toxics reduction in the Basin. The Columbia River Toxics Reduction Challenge is an opportunity for individuals and organizations to take responsibility for one or more of the 61 actions and report progress back to EPA, to be highlighted in an end of year accountability and progress report. We look forward to working together in the years ahead to aggressively restore this ecosystem and preserve its importance and culture for many generations to come. If you are already involved in Columbia River Basin Toxics Reduction, please report your successes and accomplishments to your author, Mary Lou Soscia, (soscia.marylou@epa) and they will be included in the 2011 end of year report.

For Additional Information:

Mary Lou Soscia, EPA Region 10, 503/ 326-5873 or soscia.marylou@epa

EPA website: The Columbia River Basin Toxics Reduction Plan is available at: www.epa.gov/region10/pdf/columbia/toxics-action-plan_sept2010.pdf

Columbia Toxics Reduction

Columbia River Toxics Reduction Action Plan 61 Identified Actions

Initiative #1:
Increase Understanding and Political Commitment to Toxics Reduction in the Basin
CURRENT RESOURCES

1) Continue the Columbia River Toxics Reduction Working Group to coordinate work and collaborate on toxics monitoring and reduction actions
2) Publish quarterly Columbia River Toxics Reduction Newsletter
3) Work closer with Canada
4) Continue two watershed workshops a year
5) Provide recognition for toxics reduction activities (River Hero Award) and increase events to honor the River
6) Connect and communicate with public through EPA's Columbia River website and Twitter feed

ADDITIONAL RESOURCES NEEDED

7) Increase toxic reduction information to Basin
8) Engage and educate government and public on connection between toxics reduction and salmon recovery
9) Establish executive collaboration and decision making group and formalize working group
10) Increase basin-wide watershed toxic reduction workshops
11) Share information on toxics and green chemistry curriculum to schools
12) Share success stories
13) Provide increased recognition for toxics reduction work — industries, municipalities, schools, etc.
14) Expand Columbia River Basin influence to affect national decision makers
15) Establish international liaison with Canada
16) Develop targeted outreach campaigns to special river users such as fishers, boaters, and surfers

Initiative #2:
Increase Toxic Reduction Actions
CURRENT RESOURCES

17) Better use existing funding to increase toxic reduction actions
18) EPA, local governments, states, and tribes should reduce discharge of toxics through more protective water quality standards, approval and implementation of TMDLs, increased stormwater controls, and increased inspections and enforcement
19) Continue Pesticide Stewardship Partnerships in OR, WA and ID
20) Coordinate with existing state and local programs to implement Integrated Pest Management on private and public lands throughout the Columbia River Basin.
21) Coordinate with Oregon Toxic Reduction Strategy: www.deq.state.or.us/toxics/
22) Coordinate with Washington Ecology's Toxics Threat Initiative: www.ecy.wa.gov/toxics/index.htm
23) Continue to work to identify new contaminated sites
24) Continue ongoing and future federal, state, and local activities to clean up contaminated sites
25) Reduce mercury through EPA Mercury Strategy Framework

ADDITIONAL RESOURCES NEEDED

26) Expand collaborative, watershed-based toxics reduction activities throughout the Basin linked directly to monitoring data, such as Pesticide Stewardship Partnerships to reduce pesticide loadings to streams
27) Expand collection and take back programs including mercury, pesticides, household hazardous waste, pharmaceuticals and electronics in Oregon, Washington, Idaho, and on tribal lands
28) Promote salmon and lamprey recovery efforts that reduce toxics
29) Promote industry leadership on green chemistry, transition to safer alternative products, and pollution prevention
30) Expand erosion prevention and sediment, stormwater and runoff controls, and cleanup programs in Oregon, Washington, Idaho, and on tribal lands
31) Increase enforcement to reduce toxics

Columbia Toxics Reduction

32) Promote chemical safety reform
33) Increase education and technical assistance to the public on toxics reduction opportunities
34) Promote eco-certification programs for consumer products that do not contain priority toxics
35) Increase cross-media and cross-program coordination to develop and implement TMDLs that address and reduce discharges from air, land, and water sources
36) Increase technical assistance to farmers and ranchers to increase best management practices, provide eco-certification, application technology training, drift reduction training, and Spanish language training to decrease pesticide use
37) Increase opportunities throughout the Basin to exchange information on successful toxics reduction efforts

Initiative #3:
Conduct Monitoring to Identify Sources and Then Reduce Toxics
CURRENT RESOURCES
38) Identify the contaminants of concern to focus on in the Basin
39) Use the prioritization tool in one area of the River to assist in developing a monitoring plan and modify the tool based on the results of the pilot project
40) Assist other partners throughout the Basin on using the prioritization tool to develop monitoring plans
41) Continue to seek and leverage resources to supplement existing monitoring by agencies, organizations, and Tribes in the Basin
ADDITIONAL RESOURCES NEEDED
42) Expand monitoring to the highest priority areas in the Basin as identified by the prioritization tool
43) Support watershed-based targeted monitoring efforts that link directly to reduction efforts, such as TMDLs, source assessments, and Pesticide Stewardship Partnerships
44) Support localized monitoring efforts that will provide baseline data where habitat restoration is planned and/or ongoing; and targeted monitoring on species of concern, either ESA listed or for commercial or subsistence use
45) Assess sources of contamination and loadings for priority tracking and control
46) Establish toxic reduction efforts which include status and trends effectiveness monitoring
47) Identify opportunities to integrate water, land, air, sediment, and biota monitoring
48) Develop public friendly reports to share monitoring information with the public

Initiative #4:
Develop a Regional, Multi-Agency Research and Monitoring Program
CURRENT RESOURCES
49) Identify and inventory in a database existing toxics research being conducted in the Basin
50) Using this research, convene scientists to assist in developing a Regional research plan for the Basin
51) Establish connections with researchers from other large aquatic ecosystems to better understand their research and its application to the Basin
ADDITIONAL RESOURCES NEEDED
52) Conduct research based on priorities identified in research plan
53) Develop indicators of ecosystem health
54) Develop new standards and criteria to protect fish, wildlife, and humans from toxics
55) Visit other regional centers to learn more about research programs
56) Conduct "Control Studies" to evaluate effectiveness of Best Management Practices, toxics reduction efforts, and emerging reduction strategies

Initiative #5:
Develop a Data Management System to Share Information on Toxics in the Basin
CURRENT RESOURCES
57) Convene a group to discuss different options for managing toxics data in the Region
58) Evaluate how other large aquatic ecosystems manage data
ADDITIONAL RESOURCES NEEDED
59) Create a data stewardship program, hosted and managed by a single entity
60) Survey all relevant existing data management systems in the Region
61) Verify that all data has a spatial component (latitude, longitude). Include a spatial component to the data available in order to view and create maps, and conduct spatial analysis

Stormwater Regulation

FEDERAL STORMWATER RULEMAKING

ASSOCIATION OF STATE AND INTERSTATE WATER POLLUTION CONTROL ADMINISTRATORS COMMENTS

Editors Introduction: On January 31, 2011, the Association of State and Interstate Water Pollution Control Administrators forwarded the following comments to US Environmental Protection Agency (EPA) Administrator Lisa Jackson concerning EPA's upcoming Clean Water Act (CWA) stormwater rulemaking (see: http://cfpub.epa.gov/npdes/stormwater/rulemaking.cfm). Your editors found the document to be an excellent discussion of the current range of issues and challenges facing stormwater regulation in the US and we are reprinting the letter in its entirety, slightly edited to fit our format.

Dear Administrator Jackson:

ASIWPCA

The Association of State and Interstate Water Pollution Control Administrators (ASIWPCA) is pleased to provide the following input under Executive Order (EO) 13132 on Federalism consultations to the Environmental Protection Agency (EPA or Agency) regarding the upcoming Clean Water Act (CWA) stormwater rulemaking. Celebrating its 50th Anniversary this year, ASIWPCA is the national voice of state, interstate, and territorial officials responsible for implementation of programs that protect surface waters across the nation — including the stormwater program. We appreciate the opportunity to provide perspectives of the state and interstate regulators (collectively referred to in these comments as states) to the Agency while you are in the early stages of rulemaking.

Nonpoint Coordination

The states support modification and refinement of the federal stormwater program to improve its effectiveness. Meaningful water quality improvement can be achieved with greater control of stormwater runoff from its many sources. The important water quality gains that can be achieved through improved stormwater control will require meaningful state resources to permit, inspect, monitor, and enforce new requirements, and to coordinate with nonpoint sectors. EPA must work with states as full partners in this rulemaking process so that modifications to the stormwater program yield the greatest environmental and water quality benefits for the corresponding financial and human capital investment. EPA must also make every effort to work with the states, across the federal government, and with other stakeholders to reduce stormwater pollution from sources not covered by the CWA's permitting program.

State Input

States feel strongly about the stormwater program, and in particular, recommend the EPA spend even more time speaking with states about their experiences managing stormwater in different climates and regions across the nation. This letter represents our initial effort to identify and advance to EPA suggested improvements and enhancements for the stormwater program, within the time period requested by the Agency under the EO. Due to the importance of state perspectives on the national stormwater program's reform, and the value of state experience in the field managing stormwater, ASIWPCA calls on EPA to hold robust and focused national and regional outreach session efforts to gather additional state input, which will be critical to the success of this effort.

EXECUTIVE SUMMARY

State Flexibility

Stormwater runoff, precipitation washing over the landscape, remains a leading source of water quality impairment nationwide. States support EPA's desire to improve and enhance stormwater program capacity. However, the time has come for EPA to seriously consider regulating precipitation-driven discharges in a fundamentally different way than traditional, end of pipe, process wastewater point source discharges. EPA also must design a program which balances the need for some national consistency with essential state flexibility to manage stormwater in the most effective way possible.

ASIWPCA PROVIDES THE FOLLOWING SUMMARY OF RECOMMENDATIONS:

Separate Programs

- EPA must engage the states in a meaningful consultation process to incorporate their on-the-ground experiences in regulating precipitation-driven discharges.

Appropriate BMPs

- EPA needs to separate the §402 program into two categories: precipitation-driven discharges and traditional process wastewater, end of pipe discharges. This will allow new and current regulations for stormwater to be clear and appropriate through stormwater-specific language.
- Precipitation-driven discharge regulations within NPDES should recognize BMPs (Best Management Practices), where selected as the most appropriate and protective control by the permitting authority, and designed, installed, and maintained to specified standards, as fully meeting permit requirements.

Risk Evaluation

- EPA must allow prioritization and risk-based evaluation of precipitation-driven discharges, given the wide spectrum of sources, challenging logistics, and significant costs associated with stormwater treatment and retrofits.

Program Expansion

- EPA must lead a federal agency effort to develop a stormwater strategy for lands in production, which generally fall outside the NPDES program.

Stormwater Regulation

Development & Redevelopment

Funding Needs

Urbanization Impacts

Current Problems

Change of Direction

Traditional Shortcomings

- EPA must work with the U.S. Department of Agriculture, and call upon Congress, to ensure that the next Farm Bill directs funds to impaired waters and builds programs to reduce stormwater from agricultural activities.
- New development requirements must distinguish between a "goal" of natural hydrology and an enforceable "performance standard" which is constrained by feasibility, practicability, and the present landscape.
- Redevelopment performance standards must protect threatened waters and promote restoration of impaired waters, but not incentivize urban sprawl.
- The Retrofit Program and Chesapeake Bay specific requirements both should be proposed in separate rulemakings.

EPA must call upon Congress to significantly increase federal funding (e.g., §106, §319) for states to implement the stormwater program's new features.

BACKGROUND

Regulating stormwater runoff is a complex challenge for state and local water quality programs. Pollution carried by precipitation continues to be a leading contributor to watershed impairments nationwide. In addition to carrying chemical and/or bacterial contaminants, stormwater poses a physical hazard to aquatic habitats and stream function by changing flow velocity and volume. Urbanization and rural development changes the physical, chemical, and biological conditions of our waterways. Clearing removes vegetation that would otherwise intercept, slow, and return rainfall to the air through evaporation and transpiration. Grading flattens hilly terrain and fills in natural depressions that formally slowed and provided temporary storage for rainfall. Urbanization scrapes and removes topsoil and sponge-like layers of humus and compacts the remaining subsoil. Increasing acres of impervious surface nationwide further reduces infiltration and increases runoff.

We acknowledge criticisms of the current stormwater program, such as:

- Insufficient resources to monitor, assess, and develop adequate stormwater permits, review stormwater plans, inspect facilities, provide compliance assistance, pursue enforcement, and carry out adaptive management.
- Disconnects between the standards, monitoring and assessment, TMDL, watershed protection, and NPDES programs.
- Inadequate consideration of stormwater runoff at the local land use level.
- The need for more research on the effectiveness of surrogates (e.g., impervious cover) to characterize both water quality and quantity effects of stormwater, and to incorporate response variables (e.g., aquatic life use support) into surrogates.
- A traditional pollutant and parameter specific approach stymies innovation.
- Insufficient consideration of the cumulative effects of stormwater in a watershed.
- Challenges relating stormwater monitoring data to water quality standards, human health risk, or environmental risk.
- Questionable effectiveness of some stormwater management plans, stormwater pollution prevention plans, and BMPs.

STATE SUGGESTIONS BEYOND EPA'S CURRENT VISION

As a fundamental matter, we recommend that EPA take the stormwater rulemaking in an entirely different direction. This Section outlines our recommendations in some detail.

A New Program Designed for Precipitation Driven Discharges

ASIWPCA and its state/interstate members are proud of the significant reductions in water pollution yielded by the National Pollutant Discharge Elimination System (NPDES) program since its establishment. The program continues to thrive, although we are concerned that it will be compromised by the addition of more and more sources to permit, as federal funding to support the program declines. A strong federal/state partnership, good data, adequate and sustainable funding, clear performance standards, and prioritization are at the heart of this program. It flourished with its focus on predictable and manageable flows, identifiable end-of-pipe controls, extensive effluent monitoring, and substantial federal and state funding for treatment facilities. The greatest successes occur where the operator of the discharging facility maintains control over the influent and effluent. Applying this successful program to a very different source of pollution – stormwater – has not yielded the same level of progress. Using a traditional, end of pipe regulatory framework for precipitation-driven discharges has led to litigation and uncertainty.[1]

It is time for regulatory requirements designed specifically for precipitation-driven discharges. Cost effective, environmentally sound, and sustainable stormwater management is possible when the realities of stormwater science are acknowledged, and the "point source" NPDES regulatory framework is reworked to include this science. The future of stormwater regulation begs for creativity, innovation, and full collaboration between the federal and state governments.

Stormwater Regulation

CWA § 402 Division

ASIWPCA recommends that EPA make regulatory changes to divide the § 402 program into two categories: precipitation-driven discharges and traditional process wastewater, end-of-pipe discharges. This will allow new and current regulations for stormwater to be clear and appropriate through stormwater-specific language. The new and revised precipitation-driven discharge regulations can be built around the unpredictability of stormwater, and recognize that BMPs, where selected as the most appropriate and protective control by the permitting authority, when designed, installed, and maintained to specified standards, fully meet permit requirements.[2] These stormwater regulations can support and foster regional and state-specific approaches that account for differences in precipitation frequency and amount, climate, topography, soil, and development patterns. Where waters are impaired under the CWA, these new regulations can promote adaptive management and timeframes to implement retrofits. Fairness can be promoted among states, communities, existing and new development, and between process wastewater discharges and precipitation-driven discharges.

Additional Designations As Needed

Residual Designation Authority

Federal regulations provide that the EPA Regional Administrator/State Program Director may designate additional stormwater discharges as requiring NPDES permits. The authority to regulate other sources based on stormwater's localized adverse impact on water quality through NPDES permits is commonly referred to as the Residual Designation Authority ("RDA"— see Varney, TWR#71). Federal regulations provide that any person may petition either EPA or the affected state to residually designate discharges as requiring a stormwater permit.

Clarification Needed

ASIWPCA recommends that EPA take this rulemaking opportunity to clarify where/when it is appropriate for states to exercise RDA. Clarification could also include establishing requirements for petitions, including the appropriate data needed to present a case, as well as how RDA can best be integrated into the TMDL and antidegradation programs. Without such clarity, any impaired watershed in the nation is subject to a petition for designation. The current lack of clarity creates a significant administrative burden on the permitting authority, may result in a non-prioritized use of state resources on remediation or in litigation, and may place unnecessary costs on the regulated community without sufficient environmental gains.

Permitting in Impaired Waters

Watershed Solutions

EPA should reconsider how precipitation driven impairments are addressed and redevelop the NPDES permitting approach to stormwater impaired waters. Current NPDES requirements for impaired waters potentially impede watershed solutions. Watersheds impaired by multiple stormwater discharges do not necessarily require the same level of treatment across each discharge. Permitting requirements, such as 122.4(i), and "cause or contribute" language in RDA, can unnecessarily focus resources on individual discharges and costly offset programs. EPA must consider and recognize state approaches. Where waters are either impaired or threatened primarily by nonpoint sources, a watershed plan may be a better control strategy than TMDLs mixed with weakly supported effluent limits for precipitation-driven discharges.

Some states have found the most cost effective and environmentally beneficial strategies are deployment of BMPs at strategic locations within a watershed, then funded and maintained by a watershed utility district where all property owners in the watershed contribute. Watershed solutions that cut across several properties are sometimes more effective than addressing individual dischargers. Successful retrofitting efforts are usually of a regional or watershed scope.

Prioritization is a Tool

Prioritization Uses

EPA must use this rulemaking opportunity to include prioritization and risk-based evaluation to focus stormwater permitting, inspection, compliance assurance, and enforcement resources. Prioritization is becoming more and more important due to the high cost of many stormwater solutions.[3] One approach might be to identify stressors on a watershed level (e.g., urban runoff, agricultural runoff, runoff from back roads, point sources), allowing states and municipalities to target stormwater tools and funding to resolve or prevent problems. BMP deployment at the MS4 level can also be prioritized through a rule. Prioritization can help MS4s determine where and when retrofits are implemented.

State Stormwater Management Programs

Location Specific Solutions

State stormwater management programs showcase the importance of watershed specific solutions and local land use decision making to achieve success.[4] State authority for these programs generally exceeds that of the federal government and has evolved based on local, not national, priorities. Many of these programs are the result of a federal mandate under § 6217 of the Coastal Zone Act Reauthorization Amendments.[5] Congress also highlighted the importance of these state programs under CWA § 402(p)(6).[6]

EPA must defer to existing, successful state and/or local post construction stormwater that meet or exceed any new federal requirements. EPA seems overly focused on expanding the federal program, rather than supporting good state efforts. Any national stormwater rule also must recognize an equivalent state program/performance standard.

Funding for Non-Point Programs

Non-Point Funding

ASIWPCA recommends EPA focus more resources on improving the nonpoint source program to address stormwater impairments, in conjunction with its efforts to update CWA § 402. The 2008 Clean

Stormwater Regulation

Water Needs Survey identified over $22 billion in nonpoint source program funding needs across the 50 states.[7] Over the last five years, the annual appropriation for CWA § 319 has been approximately $200 million. Current § 319 funding is insufficient to run comprehensive nonpoint source programs. ASIWPCA has previously recommended that EPA request at least $1 billion for § 319 to support state programs dedicated to stormwater and nonpoint source program issues. An increase in § 319 funding would allow EPA narrow the NPDES stormwater universe and make more watershed projects available for CWA § 319 funding (or in the alternative allow NPDES stormwater areas to be eligible for § 319 funding). The time is right to find ways to use § 319 funds to solve more stormwater problems.

EPA & Lands in Production

Exempt Uses

In many states, agriculture and forestry are the dominant land uses, and except for certain animal operations, these discharges are exempt from pollution control requirements. These areas may contribute significant pollutant loads but are outside the control authority of state stormwater programs. Farm policy, incentives, and conservation programs have mixed success in protecting water quality. It is time to reconsider these factors in light of what is now known about the relationship of land use to water quality and quantity. This effort will also have the corresponding benefit of protecting forests and farms from opportunistic land use change, often promoted by government at public expense, such as where we build roads, plan industrial parks, and develop communities.

We urge EPA to promote comprehensive and transparent coordination across all programs that impact water quality, so that resources delivered to those areas produce the greatest impact. USDA Farm Bill funding must prioritize local water quality as an aspect of decision making. EQIP (Environmental Quality Incentives Program) and CRP (Conservation Reserve Program) funds should consider high quality and impaired waters. EPA should work with USDA to use CWA § 319 criteria to direct Farm Bill funds.

National Objectives

Likewise, EPA should take the federal agency lead in developing clear national objectives for controlling stormwater pollution from lands in production (i.e., working lands associated with food, feed, fiber, fuel, and forestry industries). While states do not support expanding the federal NPDES universe to cover these sorts of facilities, there is great support for collaboration of policies designed to reduce and control stormwater pollution. Working with other federal agencies, EPA should lead the effort to develop a national stormwater strategy that takes advantage of existing voluntary programs to the highest extent possible, and proposes new programs that would assist in implementation of national water quality goals.

COMMENTS ON EPA'S STORMWATER RULE OPTIONS

General Comments

While we greatly appreciate EPA's willingness to conduct conference calls with the states, these calls have yet to provide the full view of EPA's direction and activities. Accordingly, these comments represent our opening thoughts on stormwater management and preliminary ideas for refocusing the NDPES program to enhance stormwater management in the coming decades. We include references to EPA's PowerPoint presentation delivered on December 9, 2010 during the EO 13,132 briefing as appropriate.[8]

Success Definition Need

The federal regulations should include a clear definition of success that looks at indicators of BMP implementation, not just estimates of pollutant loading, which are often not feasible for precipitation-driven discharges. Likewise, a couple of states do have existing requirements that are tied to pollutant removal percentages. EPA needs to be prepared to address how conversion to a hydrology standard will be handled and be prepared to allow flexibility and time to make adjustments. Any national approach must acknowledge the reality of the frequency and duration of precipitation events in some western states.

MS4 Timeline

The MS4 regulations need to acknowledge that remediation of waters impaired by stormwater discharges will take time, possibly 10-20+ years, and in some cases may not be practical at all. The MS4 program should be written to incentivize the retrofitting of existing impervious surfaces on the basis of a long-term plan and funding should be available for development of these plans. The national stormwater rule must include recognition of an equivalent state program / performance standard.

While a single set of consistent requirements for all MS4s may simplify enforcement, it fails to take into account the inherent differences between the Phase I and Phase II systems. Accordingly, the six minimum control measures (MCMs) should not be flatly applied to Phase I MS4s retroactively. Use of the MCMs should only be integrated into a permit after careful consideration of appropriateness of need. Unilaterally changing the requirements for Phase I MS4s may adversely impact some programs.

Several states believe an MS4 "lite" program for smaller municipalities/towns would be of value. EPA may wish to consider such a program.

Expansion of the Stormwater Program Universe

Permit Coverage Expansion

Simply expanding the federal program will not provide an optimal solution to the growing stormwater pollution issue. Given the options offered by EPA, states exhibited a clear preference for extending permit coverage to the jurisdictional boundaries of the MS4.[9] Municipalities manage several different programs throughout their jurisdiction and this appears to be the most reasonable approach to such expansion. Drawing arbitrary lines at urbanized area boundaries creates an impression of inequality. For

Stormwater Regulation

example, if two parcels are on opposite sides of a road, and one is in the urban area and one is out, but they are both in the same watershed, there is no logic in extending program jurisdiction to only one of the parcels. In addition, permitting urbanized areas fails to cover areas where development is occurring and post-construction requirements are most appropriate, but focuses on areas already developed. Many municipalities are already implementing the program based on their municipal boundaries. Almost all States agreed that the other options were not only infeasible but would likely introduce unintended impacts. At least one state expressed a clear preference for defining MS4s by their watershed, noting that stormwater issues are not confined to political boundaries. States should continue to have the flexibility to designate additional MS4s as deemed appropriate by the state.

"Goals" v. "Performance Standards"

Performance Standards for New Development

When it comes to new development, EPA must clearly distinguish between "goals" and "performance standards".[10] The ultimate goal for the stormwater program may be to attempt post-development stormwater hydrologic conditions that approximate and/or mimic the pre-development conditions, however typically this is not achievable. Existing stormwater BMP technology simply does not allow this goal to be met on a consistent basis in all locations. Similarly, with pre- and post-development, volume requirements can be very difficult to achieve where infiltration (retention) BMPs are ineffective due to natural hydrology, topography, geologic features, soil type, or other factors. In addition, in some states water quantity and drainage laws may preclude such retention.

Numeric Limits

Most states do not support mandating specific numeric effluent limits based on criteria that may exist in a federal rule.[11] We recommend requirements based on design standards that allow flexibility to address the practicality of implementation. When combined with existing post-construction treatment requirements, this approach balances environmental protection and the needs of public and private development. A numeric limit would likely not be feasible for most MS4 systems, and not legally required.[12] A federal rule must avoid being highly prescriptive and provide states with flexibility on meeting a performance standard.

EPA must also consider ongoing maintenance issues associated with facilities. Identification of the responsible party is not always easy or obvious in some States. States support the use of offsets, mitigation, exceptions, and variances as deemed appropriate by the permitting authority, where cost and complexity can be considered as part of the options.[13]

States recommend that EPA refine many of the terms used in the agency's materials provided for this consultation effort.

Appropriate Variances

Performance Standards for Redevelopment

EPA should not be highly prescriptive with respect to redevelopment and stormwater treatment, but allow states flexibility in meeting the standard and developing regionally appropriate variances.[14] This stormwater regulation must be protective of threatened waters and promote restoration of impaired waters, but it should also encourage redevelopment to reduce urban sprawl and must avoid becoming the disincentive for this investment. The goal should be to encourage developers to utilize these sites in preference over undeveloped sites. Several states have developed performance standards that reduce the requirements for redevelopment. Others have found that redevelopment post construction stormwater requirements are very effective in achieving water quality goals at the site level. ASIWPCA recommends that EPA let each state set and/or retain its own standard.[15] We also support giving credits for redevelopment in certain areas (e.g., brownfields).

Retrofit Issues

Performance Standards for Retrofits

ASIWPCA believes this aspect of the rule will garner the most attention from municipalities, Congress, and the public. Regardless of the scope of application, retrofits will be enormously expensive for those affected.[16] The cost will likely go beyond simple dollars and cents. Politically, we believe it will be very difficult, if not impossible, to move the stormwater rule forward with retrofit requirements included. States recommend either a separate rulemaking or a guidance document to address retrofits.

Should EPA propose retrofit requirements, ASIWPCA recommends they be focused on MS4s discharging to water bodies impaired by stormwater.[17] In states that are seeing success, retrofitting goes beyond implementation of BMPs and includes regional facilities that address a specific resource (e.g., impaired water/TMDL or flooding issue). Retrofitting serves many needs and has numerous drivers. Retrofit standards must be flexible as it relates to the required timeframes for implementation. Implementation will require the establishment of a funding mechanism, such as a stormwater utility. This is not a simple task and will likely take a community a minimum of two years to put in place.[18]

Chesapeake Requirements Separation

Chesapeake Bay Specific Requirements

EPA should propose any Chesapeake Bay specific requirements in a separate rule making.[19] While there is concern over what will be required differently in the Chesapeake Bay watershed versus the rest of the country, separation of the two rules is appropriate and would help reduce the size of the national stormwater rules.

Application of the Chesapeake Bay provisions may be unnecessary in other sensitive watersheds that are much smaller in scope. Many states are already addressing sensitive watersheds and are seeing success. A national approach that is inconsistent with the state's current approach could undermine those successes.

Stormwater Regulation

SIC Code Issues

Industrial Program

Several states support replacing the SIC code system with the NAICS system to modernize the identification of industrial discharges covered by NPDES stormwater regulations is appropriate.[20] Many states believe a phased in approach which utilizes a cross-referencing table would be necessary. EPA should be very careful with the replacement of the SIC code system to avoid unintentional expansion of the NPDES universe.

Other states believe this SIC code update would create unnecessary confusion for regulated industries and thus cannot support this proposed change. However, these states have pointed out that there has been a problem with the SIC listings creating an uneven playing field where similar activities are treated differently. For example, construction companies performing heavy equipment maintenance are not subject to regulation based on the applicable SIC, even though a number of other industries are subject to regulation because of this activity.

Monitoring Options

Monitoring Requirements

States have strong concerns about how EPA establishes monitoring requirements in this rule. Monitoring requirements for stormwater must be robust enough to ensure the data is useful and the collection costs are proportionate to the applicability for water quality. The window of opportunity for obtaining representative samples is very narrow and can vary due to a number of factors, including prior weather conditions and size of drainage area. At least one state has concluded that stormwater monitoring requirements may not be worth the cost/effort. Instead, this state has replaced the monitoring requirement with an inspection program funded by fees charged to the regulated facility. The state was able to garner industry support for these fees by eliminating the monitoring requirement, which has resulted in a greater field presence and cooperation from facility operators.

States have significant experience in stormwater monitoring and highly recommend further dialogue on the option/issues, prior to EPA moving too far down any one path in this rulemaking. While states agree there must be some method of assessing the effectiveness of the program, there are many different assessment approaches that can lead to success and should be considered.

Maximizing General Permit Use

General Permits

One basic NPDES tool that facilitates a comprehensive and efficient process for addressing a category of similar discharges is the "general permit". General permits contain specific limitations or requirements that apply to all facilities involved in similar operations that can be adequately regulated with a standard set of conditions. As EPA develops and updates the stormwater rules, ASIWPCA recommends a significant focus on maximizing use of the general permit to adequately manage this universe. EPA's should avoid issuing clarification preamble language/guidance that undermines general permit usage.

Rural Flexibility

Rural Areas

EPA should consider providing states with flexibility on how this rule will apply to rural areas. For example, a state may have a facility with a large impervious area (e.g. large parking lot at a truck stop or box store), which could have a low risk of environmental harm. The rule must be able to accommodate the differences between densely populated urban corridors and more rural communities with lower risk, even as both areas might meet an impervious area size threshold. Specifically, we recommend that EPA take an approach similar to 40 CFR 123.35 where it is left to the permitting authority to develop the process and criteria. This flexible approach better fits the diversity of situations, climate, urban density, and forms of government which different states deal.

Low Impact Development Incentives

Low Impact Development and Green Infrastructure

ASIWPCA supports EPA encouraging low impact development with incentives, but recommends that EPA not mandate design requirements or limits on impervious cover. States and local government are in the best position to determine which requirements are most appropriate. Low impact development projects can lead to long term operation and maintenance issues if not adequately supported and managed.

Utilization of green infrastructure as part of stormwater management can be cost-effective, sustainable, and environmentally friendly. Green Infrastructure can enhance and/or mimic the natural hydrologic cycle processes of infiltration, evapotranspiration, and reuse. At the largest scale, the preservation and restoration of natural landscape features including forests, wetlands, and floodplains, can be critical components. Likewise, green infrastructure may include smaller scale technologies including green roofs, individual trees and tree boxes, rain gardens, vegetated swales, pocket wetlands, infiltration planters, porous and permeable pavements, vegetated median strips, riparian buffers, and so forth. While states would not support a federal mandate for green infrastructure use, ASIWPCA recommends that EPA continue to:

- Develop models for all components of green infrastructure and make them available nationwide.
- Explore and highlight opportunities and incentives for green infrastructure provisions in MS4 permits and CSO Long Term Control Plans (LTCPs).
- Further develop materials to assist permit writers, inspectors, and TMDL developers on the appropriate uses of green infrastructure under the CWA.
- Identify the most effective and innovative uses of green infrastructure through EPA awards or recognition programs.

Stormwater Regulation

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- Provide technical assistance, training, and outreach to potential users of green infrastructure, including states, cities, counties, utilities, environmental and public health agencies, engineers, architects, landscape architects, planners, realtors, and nongovernmental organizations.
- Develop tools to assist local green infrastructure programs with outreach, training, application, planning and design, monitoring, and plan review.
- Provide the appropriate flexibility so states and cities can tailor solutions and take advantage of the benefits of green infrastructure in a way that best meets their needs.

Linear Projects

To the extent that EPA is considering stormwater control for linear projects, including transportation facilities, it is important to note that they may not have the same opportunities to treat stormwater or promote infiltration as do other non-linear facilities. States support the development of a specific customized stormwater standard for linear projects. However, some states may not have authority to enforce a standard, as the jurisdiction, ownership, and program management may not align with state law.

CONCLUSION

States fully support stormwater management and improvements to the federal program. ASIWPCA urges EPA to consider the significant benefit of regulating precipitation-driven discharges in a fundamentally different way than traditional point sources. Such a thoughtful step forward will require careful adjustment of the current regulatory structure. ASIWPCA encourages EPA to fully engage states in this process and to draw on our extensive experience regulating precipitation-driven discharges.

We look forward to our continued discussions with the Agency.

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Footnotes

1) See, e.g., *NEDC v. Brown*, No. 07-35266 (9th Cir. 2010) (finding forest road runoff to be a point source).
2) Numeric limits can be an important tool in developing protective permits and EPA should also allow and support the use of BMP-based effluent limits when appropriate for a specific discharge.
3) For example, the Eagleville Brook Impervious Cover TMDL will cost $7.8 million, roughly $95,000 per acre of impervious cover treated (http://clear.uconn.edu/projects/tmdl/progress.htm).
4) State Stormwater Management Programs – Florida (1979), Maryland (1984), Virginia (1990), Delaware (1991), South Carolina (1992), Massachusetts (1998), Rhode Island (2002), Wisconsin (2002), New Jersey (2003), Michigan (2007), Minnesota (2008).
5) § 6217, better known as the Coastal Nonpoint Source Pollution Control Program is intended to address nonpoint pollution problems in coastal water and is a requirement for the states and territories with approved Coastal Zone Management Programs.
6) CWA § 402(p)(6) Regulations — Not later than October 1, 1993, the Administrator, in consultation with State and local officials, shall issue regulations (based on the results of the studies conducted under paragraph (5)) which designate stormwater discharges, other than those discharges described in paragraph (2), to be regulated to protect water quality and shall establish a comprehensive program to regulate such designated sources. The program shall, at a minimum, (A) establish priorities, (B) establish requirements for State stormwater management programs, and (C) establish expeditious deadlines. The program may include performance standards, guidelines, guidance, and management practices and treatment requirements, as appropriate.
7) http://water.epa.gov/scitech/datait/databases/cwns/2008reportdata.cfm
8) EPA Federal Consultation Meeting, Stormwater Rulemaking Consultation with State and Local Governments, 12/9/2010.
9) Id. slide 21.
10) Id. slide 22.
11) Id. slide 23.
12) *Defenders of Wildlife et al v. Browner*, 191 F.3d 1159 (9th Cir. 1999)
13) EPA Federal Consultation Meeting, slide 24
11) Id. slide 27. (e.g., does "establish specific numeric standards" mean new water quality standards, effluent guidelines, performance standards, or something else?)
15) A percent reduction in runoff volume may be easier to monitor and more representative of impact than impervious cover measurements.
16) Examples for nutrient reduction retrofits in Florida - Seminole County, FL ($7.8 million), Martin County ($6.8 million), Lake County, FL ($7.4 million), South Daytona, FL ($4.4 million), Sarasota, FL ($16.8 million).
17) EPA Federal Consultation Meeting, slide 29.
18) For example, the creation of the Long Creek Watershed Management District in Maine was formed after a 2-year stakeholder process and then a third year of working out details. In the case of watersheds with multiple jurisdictions, this task becomes even more complicated. There will be many places where even a ten year target is overly aggressive, and should be assessed on a watershed by watershed basis. It may make sense to divide retrofitting into 2 phases, Phase I: Planning (2-3 years) and Phase 2: Implementation (10-20 years).
19) Id. slide 31.
20) Id. slide 32.

WQ Permit Data Access

WATER QUALITY PERMITS INFORMATION ACCESS

OREGON DEQ LAUNCHES WATER QUALITY ELECTRONIC DOCUMENT REPOSITORY

by Daniel Hermosillo, Water Quality Data Analyst, Oregon Department of Environmental Quality

Introduction

Electronic Access

The Oregon Department of Environmental Quality's (ODEQ's) Water Quality Division is making many of its permits and permit-related documents more accessible to the public through a new search function on its website. The new system makes use of Microsoft Sharepoint to create an electronic repository of water quality permits and permit-related documents for public viewing.

ODEQ is adding permits and related documents through this system in phases over the next year, as resources allow. This first phase currently makes available all National Pollutant Discharge Elimination System (NPDES) individual permits and related documents, such as permit evaluation reports. Currently, 371 Oregon individual facilities — including municipal wastewater treatment plants and industrial dischargers such as pulp and paper mills and food processing plants — are in the NPDES program. The repository also includes about 50 state Water Pollution Control Facilities (WPCF) permits. Facilities operating under WPCF permits are primarily those that discharge to land, with that discharge having the potential to reach groundwater. Over the next year, ODEQ will add general NPDES permits, additional individual and general WPCF permits and other permit-related documents to the system.

NPDES Permits

Search Capabilities

The website is available at: www.deq.state.or.us/wqpermitsearch/. Users can access a brief form and type in the name of the desired facility or other known information to call up documents pertaining to a specific permittee. Users will also be able to search documents by county, basin or water body. The search can be done quickly and simply, without needing to fill out all data-fields on the form.

New System Meets Long-Sought Information Needs

ODEQ launched the electronic document repository using state funds and a US Environmental Protection Agency (EPA) grant authorized via the federal Clean Water Act, in 2003. Federal grant monies for the project have totaled $125,000. The system addresses long-sought data needs from EPA, permittees, ODEQ permit writers, natural resource groups, and the general public.

The new repository system will fulfill EPA's desire for ODEQ's Water Quality Program to provide electronic copies of permits on the Internet. It will also aid other ODEQ water quality work, including its onsite septic permitting program. ODEQ plans to expand storage of a wide range of other water quality documents as it has the time and resources.

Permit Consistency

In addition, the repository will help provide consistency in permit documents across the state by helping ODEQ's own water quality permit writers. All ODEQ water quality offices will have better access to NPDES permit documents and data. This will help permit writers achieve greater consistency in the way they prepare and issue permits in their regions. The need for more consistency in issuing water quality permits was expressed several years ago by the Blue Ribbon Committee on Water Quality Permitting, convened by ODEQ at the request of the Oregon Legislature. The group, which included members of industry, natural resource groups, governmental agencies and others, sought to streamline ODEQ's water quality permitting process.

A variety of water quality NPDES permit documents are now available through the new repository.

Available Documents

Available documents include:

- NPDES individual permits. Each permit is a legally enforceable authorization or license for a facility to discharge up to a specified amount of a pollutant into a water body under certain conditions. A permit establishes discharge and disposal limits and requires routine self-monitoring and reporting by the permittee of data and other conditions relative to operational performance. Permits are issued for a period of no more than five years; however, if a new permit application is submitted 180 days before the permit expires, then the permit continues in force until the new permit is issued.

Major Dischargers

- NPDES individual evaluation reports or fact sheets. These include documents that must be prepared for all draft individual permits for NPDES major dischargers. These documents summarize principal facts and significant factual, legal, methodological, and policy questions considered in preparing the draft permit and explain how the public may comment (OAR 340-045-0035(4)). In practice, ODEQ prepares a fact sheet for all new and renewal individual permits even when not required.

Modifications

- NPDES individual permit modifications or major modifications. ODEQ may modify a permit after issuance and prior to its expiration date. Only the conditions subject to change are reconsidered while all other permit conditions remain in effect. Major modifications require public notice. Examples of modifications include correcting technical mistakes, new information or regulations resulting in new limits, or changes in other conditions.

WQ Permit Data Access

Groundwater Protection

NPDES individual permit action letters or minor modifications. These documents are similar to permit modifications but describe more minor permit changes. Permit Action Letters do not require public notice. Examples include correcting typographical errors, more frequent monitoring or reporting, and change in facility ownership.

WPCF permit documents. The WPCF permit is similar to a NPDES permit except it regulates the discharge of wastewater to the ground; discharge to surface water is not allowed. The main goal of these permits is to protect groundwater from contamination. Oregon issues WPCF permits for land irrigation of wastewater, wastewater lagoons, onsite sewage disposal systems and underground injection control systems. As stated above, many of these documents are now available, and more will be added in the next year.

Also available through the new repository are previous versions of some of these documents, such as preceding, expired permits.

"Improving public access to water quality permits and documents is important because it improves distribution of key information on point sources to the public, so they can see and understand what facilities in their watershed are allowed to do," said Neil Mullane, ODEQ water quality administrator. "This repository also gives the public the opportunity to see the process ODEQ goes through to protect public health and the environment."

Other ODEQ Water Quality Data Projects

Over the past several years, ODEQ's Water Quality Division has launched several projects to provide better access to more accurate Oregon water quality data. Several projects are completed and others are in various stages of planning and implementation.

Completed projects include the following:

Permit Compliance

Discharge Monitoring System Permit Compliance System/Integrated Compliance Information System (ICIS) Readiness Project (first phase). During phase one, the project fully populated EPA's Permit Compliance System database and implemented the use of Oregon's Discharge Monitoring System application. The Permit Compliance System is the NPDES system of record — the national database for federal Clean Water Act data. ODEQ had fallen behind in supplying state water quality data to this database after EPA discontinued entering Oregon's differently formatted data. With federal and state funding, ODEQ's Water Quality Division started a major project that implemented Oregon's new Discharge Monitoring System, entered all backlogged data into the Permit Compliance System, and implemented processes designed to provide routine updates to PCS on an ongoing basis. Since the project's completion, Oregon is among a select group of states with the most complete and accurate PCS data in the nation.

Location Identification

ODEQ Water Quality Division's Latitude Longitude Identification Data (LLID) Tool is an Internet mapping tool, used both internally and externally through ODEQ's website, to identify latitude/longitude and river mile of significant environmental entities within Oregon, such as water quality monitoring stations. ODEQ developed the tool in the late 1990s using the then-current technology. The LLID tool had become a critical part of ODEQ's water quality information infrastructure, but due to the evolution of GIS technology, it had become ineffective and difficult to maintain and use. ODEQ launched a project to use available state funds to redevelop the LLID Tool using the most current technology available. The new tool, recently implemented internally, is user friendly and provides significantly improved accuracy and ease of use in identifying the location of significant environmental points of interest in Oregon waters. ODEQ plans to have the application available to the public by early 2011 at: http://deqgisweb.deq.state.or.us/llid/llid.html.

ODEQ's Water Quality Division has several projects in various stages of implementation. Once completed, these will further enhance the quantity, accuracy and transparency of Oregon's water quality data.

These water quality projects include:

Discharge Reporting

The Electronic Discharge Monitoring Report (eDMR) Project. This project is funded with both federal and state funds and will produce a software application allowing permitted sources to enter Discharge Monitoring Reports through a web-based portal. Once implemented, the efficiencies realized will allow Oregon to meet EPA's expectation that all NPDES Individual Permit Discharge Monitoring Reports are reviewed within 30 days of receipt. Currently, due to resource restrictions, ODEQ reviews only major permits and about 20 percent of non-major permit discharge monitoring reports within 30 days. The eDMR Portal will comply with all EPA security requirements and will substantially reduce the burden on permitted sources to produce paper copies of monthly DMRs. ODEQ expects to complete the project in late 2012 and will include a pilot project to test the system with a select number of permittees. Full implementation will follow.

WQ Permit Data Access

Water Quality Data

The DMS PCS/ICIS Readiness Project (second phase). This is a federal and state funded project which will develop the concept for systems that will feed Oregon NPDES data to EPA's new ICIS-NPDES database. It will include recommendations for the replacement of Oregon's Water Quality Source Information System, the state database that stores water quality permit-related data that is necessary for ODEQ's water quality permitting program. It will also document all internal procedures necessary to ensure data is captured and sent to EPA in EPA-preferred formats. Finally, this project's second phase will provide a feasibility study to determine if ODEQ can directly implement EPA's ICIS system to administer water quality information. ODEQ expects to complete this project in mid 2012.

The Water Quality Assessment and Information System Project. This project is funded with federal and state funds and will provide Internet access to a significant amount of geo-spatial information. Some of the information to be included is ODEQ's 2010 water quality assessment data, along with information about permitted discharges into state waters. The result will be accessible Oregon water quality data in an easy-to-use, graphical format. This project is scheduled to be completed in mid-2011.

Conclusion

Once completed, these projects will vastly increase the amount, accuracy and availability of Oregon water quality data and provide much of Oregon's water quality information to the national database. ODEQ's Water Quality Division will continue to build on these systems to provide even more water quality information as funds and resources become available.

For Additional Information:

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WATER BRIEFS

WATER SUPPLY ISSUES SHIFT FROM AG USES **CO**

Colorado faces significant water supply challenges now and in the coming decades as the population continues to grow from 8.6 million to 10 million in 2050, and competition for water intensifies, according to the Statewide Water Supply Initiative (SWSI) 2010 report approved January 26 by the Colorado Water Conservation Board (CWCB). The report finds that if water use follows current trends, large supplies will inevitably be shifted away from agriculture, resulting in significant loss of farmlands, economic damage to the state's agricultural regions and potential environmental harm. The report concludes that between 500,000 and 700,000 irrigated acres could be dried up by 2050 due to urbanization, water transfers, and market pressures, resulting in demand for irrigation dropping from 4.8 million acre-feet (AF) to 4 million AF.

The report concluded that Colorado will need between 600,000 and 1 million AF/year of additional municipal and industrial (M&I) water by 2050, with that estimate adjusted to reflect passive conservation. These estimates incorporate new water demands from population growth, energy and other self-supplied industrial (SSI) needs (including oil shale), and replacement of nontributary groundwater. Addressing the groundwater supply, the report noted that between now and 2050, decreased reliance on nonrenewable, nontributary groundwater as a permanent water supply is necessary. Otherwise, there are reliability and sustainability concerns in some areas, particularly along the Front Range.

The report's key finding states that providing an adequate water supply for Colorado's citizens, agriculture, and the environment will involve implementing a mix of local water projects and processes, conservation, reuse, agricultural transfers, and the development of new water supplies, all of which should be pursued concurrently. SWSI 2010 is used as a statewide planning tool, providing comprehensive information to water providers, state policy makers and the General Assembly as they take steps to map out a path forward for Colorado water. To ensure local perspective, each of the nine basin roundtables will supplement this report with individual basin reports later in 2011.

Key elements of SWSI 2010 include: analysis of water supply demands to 2050, a summary of environmental and recreational water needs in each basin, analysis of supply availability in the Colorado River Basin, steps needed to implement important projects, and cost estimates associated with water supply strategies. The report also includes recommendations on next steps for how Colorado can address water supply needs today and in the coming decades. The over-arching recommendation states that water planners and stakeholders should enter an "implementation phase" to identify and pursue projects and methods to help meet the state's water supply needs for people and the environment. How to accomplish that is laid out in 16 recommendations.

Meeting Colorado's future water supply needs will require significant investment. Preliminary funding analysis indicates that implementing a portfolio of solutions to address Colorado's 2050 medium M&I water supply needs (approximately an additional 800,000 AF/year) will cost around $15 billion under status quo assumptions.

For info: Eric Hecox, CWCB, 303/ 866-3441 x3217 or eric.hecox@state.co.us; Report available at: http://cwcb.state.co.us

WATER BRIEFS

WATER RIGHT FEES CA

SUPREME COURT DECISION

On January 31, the California Supreme Court (Supreme Court) issued an opinion in *California Farm Bureau Federation v. State Water Resources Control Board* (Case S150518) that addresses litigation over annual water right fees adopted for Fiscal Year 2003-2004. The opinion upholds the water right fee statutes on their face, including the pass-through provisions for federal water contractors. It remands issues concerning application of the fee statute through the State Water Board's (SWB's) regulations setting annual permit and license fees back to the trial court for further fact-finding.

Each year since the SWB first adopted emergency water right fee regulations in 2003, the Northern California Water Association and the Central Valley Project Water Association (NCWA-CVPWA), and the California Farm Bureau Federation (Farm Bureau) have sued SWB over water right fees. Plaintiffs alleged, in part, that the fee legislation and SWB's fee regulations are unconstitutional and invalid.

The Supreme Court affirmed the Court of Appeal's judgment that the fee statutes are constitutional. The Supreme Court also reversed the two adverse holdings of the appellate court concerning the State Water Board's regulations governing annual permit and license fees (Cal. Code Regs., tit. 23, § 1066) and the pass-through fees (id., § 1073). The Supreme Court remanded these two issues to the trial court to make factual findings to resolve the issue of whether the regulations are constitutional as applied. The Supreme Court's decision only addresses the fee regulations adopted in Fiscal Year 2003-2004; litigation over subsequent years' fees has been stayed.

As noted in an announcement on the SWB's website concerning the decision, since the Supreme Court upheld the statute as constitutional, the SWB will continue to collect annual water right fees.

For info: Opinion available at: www.courtinfo.ca.gov/cgi-bin/opinions.cgi; SWB website: http://waterboards.ca.gov/

TOXICS/DRINKING WATER US

PERCHLORATE REGULATION

On February 2, US EPA announced it will be developing regulation for perchlorate to protect Americans from any potential health impacts and ensuring the quality of drinking water. The decision to undertake a first-ever national standard for perchlorate reverses a Bush Administration decision and comes after EPA scientists' review of the emerging science of perchlorate. More than four percent of US public water systems have detected perchlorate and between five million and 17 million people may be served drinking water containing perchlorate.

Perchlorate is both a naturally occurring and man-made chemical that is used in the manufacture of rocket fuel, fireworks, flares and explosives, and may be present in bleach and some fertilizers. It may impact the normal function of the thyroid, which produces important developmental hormones. Thyroid hormones are critical to the normal development and growth of fetuses, infants and children. Based on this potential concern, EPA will move forward with proposing a formal rule. This process will include receiving input from key stakeholders as well as submitting any formal rule to a public comment process.

In a separate action, EPA is also moving towards establishing a drinking water standard to address a group of up to 16 toxic chemicals that may cause cancer. This group of **v**olatile **o**rganic **c**ompounds (VOCs), which are chemicals such as industrial solvents, includes **t**ri**c**hloro**e**thylene (TCE) and **t**etra**c**hloro**e**thylene (PCE) as well as other regulated and some unregulated contaminants that are discharged from industrial operations. As part of the Drinking Water Strategy laid out in 2010, EPA committed to addressing contaminants as a group rather than one at a time so that enhancement of drinking water protection can be achieved cost effectively.

For info: Perchlorate: http://water.epa.gov/drink/contaminants/unregulated/perchlorate.cfm; Drinking Water: http://water.epa.gov/lawsregs/rulesregs/sdwa/dwstrategy/index.cfm

WATER STORAGE RULE WA

PROCESSING EXPEDITED

In late December, Washington State Ecology (Ecology) Director Ted Sturdevant signed the Hillis Rule amendment to expedite the processing of water right applications for water storage projects in the Columbia River basin. This is the first update of the rule that sets priorities for processing water rights applications since its adoption in 1998 (see Chapter 173-152 WAC). Ecology's amendment allows priority processing of water right applications for such projects as replacing failing public water systems or developing new water supplies in water-short areas of Washington state.

The amendment allows expediting of aquifer and surface storage projects as long as they don't conflict with state or federal instream flow rules. Some projects expected to benefit from the rule include storage projects for the City of White Salmon, Chelan Public Utility District and Klickitat County, as well as water banking and public water supply projects throughout Washington state. These projects are funded with state grants through Ecology's Office of the Columbia River.

The Hillis Rule amendment was adopted after Ecology determined it meets the criteria for an exemption from Gov. Chris Gregoire's moratorium on non-critical rule development by state agencies (announced November 17). It meets the Governor's criterion that rule adoption provide more flexibility in getting water to pending water right applicants, supporting small business and economic growth.

The original Hillis Rule was the result of a 1997 Washington state Supreme Court decision (*Larry Hillis v. the Department of Ecology*) that upheld Ecology's authority to prioritize the processing of water right applications for emergency uses, transfers and short term projects but said the prioritization must be accomplished through rulemaking under the Administrative Procedure Act.

For info: Dan Partridge, Ecology, 360/407-7139, dpar461@ecy.wa.gov or www.ecy.wa.gov/programs/wr/rules/hillis.html

WATER BRIEFS

EPA COMPLAINT FILED TX
EMERGENCY ORDER ENFORCEMENT

Additional action has occurred in regard to natural gas well drilling activities in Parker County, Texas as first reported in *TWR #83*. On January 18, the US Department of Justice filed a complaint against Range Production Company and Range Resources Corporation (Range) in federal district court, seeking enforcement of a December 7, 2010, emergency order issued by the Environmental Protection Agency against the companies. In the order, EPA determined that Range had caused or contributed to the contamination of a drinking water aquifer in Parker County, Texas. The complaint asks the Dallas court to direct the companies to comply with portions of the order and to pay a civil penalty of up to $16,500 per day of violation.

EPA issued the order following an investigation into complaints from residents about methane contamination in their private drinking water wells. According to allegations in the complaint, testing confirmed the presence of methane gas and the presence of other contaminants, including benzene, a known human carcinogen, in the well water. Residents noticed problems with their private drinking water wells soon after Range completed drilling and well stimulation operations on two natural gas wells located near the residents' drinking water wells. During the course of conducting its investigation and while consulting with various state authorities, EPA determined that the risk of explosion warranted the issuance of an emergency order.

While Range offered to provide two affected residences alternative drinking water and installed explosivity meters in their homes after issuance of the emergency order, it failed to comply with other requirements to conduct surveys of private and public water wells in the vicinity, submit plans for field testing, and submit plans to study how methane and other contaminants may have migrated from the production wells, in addition to plans to remediate affected portions of the aquifer.
For info: Wyn Hornbuckle, DOJ, 202/ 514-2007 or Wyn.Hornbuckle@usdoj.gov; Press release, order or complaint available at: www.epa.gov/region6

RIVER ACCESS DISPUTES CO
TASK FORCE FINAL REPORT

On December 23, Colorado Governor Bill Ritter issued a report outlining a series of proposals for resolving disputes between landowners and rafters in Colorado. He also signed an executive order creating the River Access Mediation Commission to provide a way for some of the most contentious conflicts between boaters and property owners to be addressed. The Governor's River Access Dispute Resolution Task Force, which prepared the report, was a 17-member group created in July of 2010 to help craft ways to sort out conflicts on Colorado rivers on a stretch-by-stretch basis as those disputes arise. In preparing its recommendations to the Governor, the Task Force "has considered legal, political and policy implications of proposing a vision for a cost-effective, timely process for resolving disputes when they arise." The Task Force provided eight specific recommendations that they unanimously agreed to make to the Governor. Report, p. 8-9.
For info: Report available at: www.dnr.state.co.us/

CLIMATE CHANGE NEEDS US
RESEARCH FOR LONG-TERM PLANNING

The US Army Corps of Engineers (Corps) and Bureau of Reclamation (Reclamation) released a report on January 11, "Addressing Climate Change in Long-Term Water Resources Planning and Management: User Needs for Improving Tools and Information," that identifies the needs of local, state, and federal water management agencies for climate change information and tools to support long-term planning. The report seeks to focus research and technology efforts to address information and tool gaps needed for longer-term water resources planning and management. It found there were gaps in the information and tools to help water managers in how to use climate change information to make decisions, how to assess the responses of natural systems to climate change, and how to communicate the results and uncertainties of climate change to decision-makers.

This report uses eight technical steps to categorize the information and tool gaps: Summarize Relevant Literature; Obtain Climate Change Information; Make Decisions About How to Use the Climate Change Information; Assess Natural Systems Response; Assess Socioeconomic and Institutional Response; Assess System Risks and Evaluate Alternatives; Assess and Characterize Uncertainties; and Communicating Results and Uncertainties to Decision-makers.
For info: Peter Soeth, Reclamation, 303/ 445-3615; Report available at: www.usbr.gov/climate/userneeds

INDUSTRIAL WASTE KS/OK
EPA CIVIL PENALTY

An Illinois food processing company agreed to pay a $390,000 civil penalty to the US to settle allegations that its Baxter Springs, Kansas, processing facility overloaded the city's wastewater treatment system with millions of gallons of industrial wastewater, at times causing pollution along a 22-mile-long section of the Spring River in southeast Kansas and northeast Oklahoma. Orval Kent Food Company, Inc. (Orval Kent), headquartered in Wheeling, Illinois, must also spend at least $32,500 on a project to re-stock fish in or near the watershed of the Spring River, under terms of a consent decree lodged on January 31 by the US Department of Justice in Kansas City, Kansas.

The company was issued an administrative compliance order by EPA Region 7 in February 2008 after an inspection of the Baxter Springs wastewater treatment works found that Orval Kent's processing facility was routinely overloading the city's treatment system. As a result of the overloading, the city was unable to comply with the terms of its National Pollutant Discharge Elimination System (NPDES) permit. After EPA issued the order to Orval Kent in 2008, the company installed new wastewater treatment equipment and changed its manufacturing processes to reduce waste material contained in the facility's industrial wastewater.

Discharges from the Baxter Springs treatment system flow into the Spring River, which flows south from the city for about a mile before crossing into

WATER BRIEFS

northeast Oklahoma, where it continues to flow several miles through tribal lands of the Shawnee Tribe of Eastern Oklahoma. Residents of Baxter Springs, tribal members, and other communities downstream use the Spring River for fishing and recreation. Kansas has designated the river as an "exceptional" and "special aquatic life" water, partly because of its populations of threatened or endangered species. In Oklahoma, the Spring River is designated as an "impaired water" because of turbidity and bacteria.

"EPA brought this case because Orval Kent's decisions to overload the local discharge system hurt people all along this important river, which also plays a key part in Shawnee tribal culture," EPA Regional Administrator Karl Brooks said. "The agency negotiated a settlement that targets relief to repair damages Orval Kent caused to the Spring River watershed."

As part of the settlement, Orval Kent must conduct monitoring and reporting of its wastewater discharges to detect trends and help avoid future violations of the Clean Water Act. The consent decree is subject to a 30-day public comment period and court approval before it becomes final.

For info: Chris Whitley, EPA, 913/ 551-7394 or whitley.christopher@epa.gov

REASONABLE USE CA

AGRICULTURAL WATER EFFICIENCY

On January 19, California's Delta Watermaster (Watermaster) submitted a report to the State Water Resources Board entitled "The Reasonable Use Doctrine and Agricultural Water Use Efficiency." California Water Code Section 85230(d) directs the Watermaster to submit regular reports to the State Water Board on water rights administration, water quality issues, and conveyance operations. The informational report was prepared by Watermaster Craig M. Wilson.

The report addresses how California's Reasonable and Beneficial Use Doctrine (Reasonable Use Doctrine) may be employed to promote more efficient water use in the agricultural sector. The report explains how the Reasonable Use Doctrine is the cornerstone to California's complex water rights law and that all water use must be reasonable. It goes on to show that there is a wide array of irrigation practices in place today that result in the more efficient and therefore more reasonable use of water. The report concludes that the Reasonable Use Doctrine may be employed to promote a wider use of such efficient practices. The report recommends that the State Water Board convene a Reasonable Water Use Summit and contains specific recommendations for consideration during the Summit. The recommendations range from a wider employment of efficiency practices such as improvements to the irrigation systems that deliver water to farms, weather-based irrigation scheduling, and more efficient irrigation methods.

"The focus on agriculture in this paper is grounded in two principles: small changes in agricultural water use efficiency can produce significant amounts of 'wet' water and California's agricultural sector, which has tested and proven many conservation practices, is in a position to identify economically justified and locally cost effective water management techniques that retain the value of return flows to both downstream users and other environmental beneficiaries.

Maximizing the efficient use of water by projects that reduce consumptive water use is particularly important for the Sacramento/San Joaquin Delta. More efficient use of water upstream of the Delta can increase water flows into the Delta. More efficient water use within the Delta can increase Delta outflows. Reducing the amount of agricultural return Delta flow, both upstream of and in the Delta, has important water quality benefits." Report, p. 3.

For info: Report available at: www.waterboards.ca.gov/board_info/agendas/2011/jan/011911_12_reasonableusedoctrine_v010611.pdf

DROUGHT PLANNING WEST

REPORT RELEASED

Recognizing that a decade of drought has severely impacted communities, economies and the natural environment, Western Governors are working to improve drought forecasting and promote drought preparedness throughout the region. In January 2011, the Western Governors' Association (WGA) and the Western States Water Council (WSWC) produced the report, "Improving Drought Preparedness in the West: Findings and Recommendations." The report summarizes the findings from a series of meetings WGA and WSWC held in 2010 with citizens, businesses and governmental end-users of drought information.

The report focuses primarily on three areas: strengthening the National Integrated Drought Information System (NIDIS); improving drought preparedness and planning; and identifying the role of states and other stakeholders in shaping climate services. The full report, along with other information and presentations from the 2010 meetings is available on the website listed below.

For info: Tom Iseman, 303/ 623-9378 x106, www.westgov.org

STREAM HABITAT OR

POWER COMPANY PARTNERSHIP

Pacific Power customers choosing to support renewable energy through the award-winning Blue Sky program can now also help fund Oregon native fish habitat preservation and restoration projects managed by The Freshwater Trust. The new partnership with The Freshwater Trust continues a popular habitat enhancement option that Oregon Pacific Power residential and small non-residential customers have had since 2002. By making this choice, customers participating in the Blue Sky program can also donate $2.50 per month to directly help improve the habitat of native fish, including salmon, in the state. More than 4,500 Pacific Power customers in Oregon are currently supporting this program each month.

"The Freshwater Trust has a great track record of selecting important stream habitat projects and making sure they are done in a timely and cost-effective way," said Pat Egan, Pacific Power's vice president of customer and community affairs. "Their StreamBank program to track and manage project planning and permitting is a unique tool and a national model that ensures that donations made to The Freshwater Trust have direct and strong impacts on the stream ecosystems targeted for restoration. These projects will be

funded by Pacific Power customers, leverage other resources and will benefit projects in Pacific Power territory."

"We look forward to delivering effective, localized restoration projects for Pacific Power's customers," said Joe Whitworth, president of The Freshwater Trust. "With habitat loss being the single most important factor contributing to wild fish declines and almost 30 percent of our rivers unable to fully support aquatic life, investing in river and stream restoration is critical to health of salmon runs and waterways throughout the region."

Pacific Power customers who participate in the Blue Sky Habitat option pay $0.012 more per kilowatt-hour above Basic Service rates to support 100 percent renewable energy that is equal to their monthly usage, plus a $2.50 flat monthly rate. The typical Oregon household using 950 kilowatt-hours monthly will pay $13.90 more each month, including the renewable and the habitat elements, to participate.

Since 2002, customer donations to the Habitat program have helped provide funding for 61 projects in a dozen Oregon counties, which supported habitat areas equivalent to more than 130 river miles. In 2010, Blue Sky customers donated more than $140,000 to habitat projects in this way. For a list of projects benefiting from Blue Sky Habitat customers, visit www.pacificpower.net/blueskyhabitat.

For info: The Freshwater Trust, www.thefreshwatertrust.org

STORMWATER REPORTS WA ECOLOGY ISSUING FINES

Owners of most permitted industrial business sites in Washington are working with the Washington Department of Ecology (Ecology) to keep a watchful eye on their polluted stormwater runoff, as required under the Clean Water Act. The runoff is the biggest threat to water quality in urban areas of Washington and Puget Sound. The state, under Clean Water Act authority, requires most industrial sites to monitor, measure and submit reports about the stormwater that leaves their properties. Ecology administers this process through an industrial stormwater permit.

Since Ecology updated that general permit in January 2010, its records show an increase in the number of sites that are submitting their stormwater monitoring reports on time. More than 90 percent of the sites covered by the industrial stormwater permit are now submitting their reports on time — up from less than 80 percent at the beginning of 2010. Owners of 11 sites in Southwest Washington did not submit their stormwater monitoring reports for the first three quarters in 2010, and Ecology sent each of them $3,000 penalties. Before issuing the penalties, Ecology sent reminder letters for both the first and second quarters.

"The business community has asked us to step up enforcement of discharge monitoring report permit requirements. If one facility is spending time and money to comply, it isn't fair if competitors are not," said Kelly Susewind, manager of Ecology's water quality program. The money collected from penalties funds grants to local environmental enhancement and restoration projects sponsored by local governments, tribes and other state agencies.

About 1,200 industrial facilities are covered with the permit. Approximately 70 percent of those sites are in the 12 counties that border Puget Sound. Examples of business types needing this permit are lumber, paper, printing, chemicals, petroleum, leather, stone, metals, ships, landfills, transportation, mills, and food.

For info: Sandy Howard, Ecology, 360/ 407-6408 or sandy.howard@ecy.wa.gov

WATER PLAN REPORT OR INTEGRATED WATER RESOURCES STRATEGY

The Oregon Water Resources Department (OWRD), Oregon Department of Environmental Quality, Oregon Department of Fish and Wildlife, and the Oregon Department of Agriculture released a report February 1 regarding the development of Oregon's first Integrated Water Resources Strategy. This report describes progress made thus far and evaluates whether the Integrated Water Resources Strategy will be completed by December 31, 2012. An executive summary and full report have been provided to all members of the Oregon Legislature. The Directors of the four agencies presented the Progress Report to legislators during the week of January 31st.

For info: Brenda Bateman, OWRD, 503/ 986-0879 or brenda.o.bateman@state.or.us; Cover letter, executive summary and report available at: www.wrd.state.or.us

NPDES PERMIT WRITING US WEB-BASED TRAINING

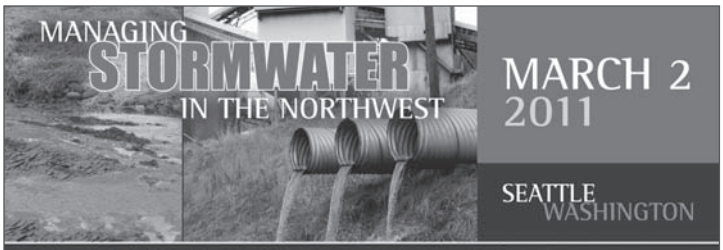
EPA has completed a thirteen-part web-based training series, based on its popular in-person National Pollutant Discharge Elimination System (NPDES) Permit Writer's Course, which allows state and EPA Regional permitting staff, as well as stakeholders and the public, to access NPDES permit program training content online. The web-based presentations cover much of the material presented in the live course. These recorded presentations enable participants who attended the NPDES Permit Writer's Course to review the material on demand in a self-paced environment. The presentations also are useful for those who have not attended a live course, but who wish to become familiar with important concepts of the NPDES permit program.

The NPDES Permit Writer's Course is a five-day training session covering the key elements of NPDES permit development. The course is taught by experienced EPA staff and contractors and has been very well received by EPA Regions and authorized NPDES states.

A new feature has been added to the webpage that allows the user to print a "course completion certificate" if they achieve a passing score on the module quiz. After printing the certificate, the user may also (voluntarily) click a link to send their contact information to EPA for tracking purposes.

For info: David Hair, EPA, 202/ 564-2287 or hair.david@epa.gov; Series available at: www.epa.gov/npdes/training >> Self-Paced Web Training

CALENDAR



February 15-17 UT
Nutrients & Water Quality: EPA Region 8 Collaborative Workshop, Salt Lake City. Hilton City Center. For info: www.cwi.colostate.edu/nutrients

February 15-16 WA
Principles of Environmental Sampling Course, Issaquah. NWETC Hdqtrs. For info: EOS Alliance: www.eosalliance.org/schedule/calendar/courses-eos#

February 16 CO
CWCB Instream Flow Workshop, Denver. Colo. Division of Wildlife HQ. Sponsored by Colorado Water Conservation Bd. For info: Rob Viehl, CWCB, 303/ 866-3441 x3237, rob.viehl@state.co.us or http://cwcb.state.co.us

February 16 CA
CEQA Update, Issues & Trends Course, Sacramento. Sutter Square Galleria, 2901 K Street. For info: UC Davis Extension, 800/ 752-0881 or www.extension.ucdavis.edu/landuse

February 16-18 AZ
Arizona Water Resources Tour, Phoenix. Co-sponsored by Bureau of Reclamation. For info: Water Education Foundation, 916/ 444-6240 or www.watereducation.org

February 17 OR
Sustainable Co-Development: Water Resources, Corvallis. OSU Strand Hall, Rm. 111, 4-5pm. For info: Todd Jarvis, Institute for Water & Watersheds, 541/ 737-4032 or water.oregonstate.edu

February 17-18 GA
Wetlands & Water Law in the Southeast Seminar, Atlanta. Sheraton Atlanta Hotel. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

February 19 CO
Water Tables 2011 Dinner, Fort Collins. Colorado State University. For info: Ashley Lapsley, CSU, 970/ 491-6823 or Andrea.Lapsley@Colostate.edu

February 22 AZ
Funding Green Projects/Planning & Design Grants Workshop, Flagstaff. Coconino County Office, 11am. For info: Sara Konrad, Water Infrastructure Finance Authority, 602/ 364-1319 or skonrad@azwifa.gov

February 22-25 OR
American Fisheries Society 2011 Oregon Chapter Meeting, Bend. Riverhouse Hotel. For info: Colleen Fagan, 541/ 786-8953, Colleen.e.fagan@state.or.us or www.orafs.org/meeting2011/Annual11.htm

February 23 AZ
Environmental Crimes & Penalties Seminar & Free WEBCAST, Phoenix. Complimentary Live Webcast. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

February 23 AZ
Securing Water for the Environment: Brownbag, Tucson. Water Resources Research Ctr. For info: Jane Cripps, WRRI, 520/ 621-2526, jcripps@cals.arizona.edu or http://cals.arizona.edu/azwater/programs/conf2011/index.html

February 23 AZ
Funding Green Projects/Planning & Design Grants Workshop, Tucson. ADEQ/ WIFA Bldg., 1pm. For info: Sara Konrad, Water Infrastructure Finance Authority, 602/ 364-1319 or skonrad@azwifa.gov

February 23-25 CA
Water Law Conflicts in Practice: ABA Water Law Conference 29th Annual, San Diego. Westin San Diego. For info: ABA, www.abanet.org/environ/programs/waterlaw/2011/home.shtml

February 23-25 TX
The Environment, Human Needs, and the Economy - Winter Conference of the Western Coalition of Arid States, Fort Worth. Worthington Renaissance Hotel. For info: WESTCAS, www.WESTCAS.org

February 23-25 OR
Environmental Negotiations for Scientists & Resource Managers Course, Portland. North Ramada Airport. For info: EOS Alliance: www.eosalliance.org/schedule/calendar/courses-eos#

February 23-25 NV
Family Farm Alliance 23rd Annual Meeting & Conference, Las Vegas. Monte Carlo Resort. For info: Dan Keppen, FFA, 541/ 892-6244 or www.familyfarmalliance.org

February 24 CO
Governor's Forum on Colorado Agriculture, Denver. Held in Conjunction with Colorado FFA Foundation. For info: jenifer.gurr@ag.state.co.us, 303/ 239-4104 or www.colorado.gov/ag/forum

February 24 AK
ESA - Impacts on Alaska, Anchorage. Dena'ina Convention Ctr. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

February 24 CA
Endangered Species Regulation & Protection Course, Sacramento. Sutter Square Galleria, 2901 K Street. For info: UC Davis Extension, 800/ 752-0881 or www.extension.ucdavis.edu/landuse

February 24 AZ
Funding Green Projects/Planning & Design Grants Workshop, Tucson. ADEQ/ SRO Office, 11am. For info: Sara Konrad, Water Infrastructure Finance Authority, 602/ 364-1319 or skonrad@azwifa.gov

February 24-25 TX
Texas Wetlands Conference - 21st Annual, Austin. Omni at Southpark. For info: CLE International, 800/ 873-7130 or website: www.cle.com

February 24-25 Ontario
Conference on Stormwater & Urban Water Systems Modeling, Brampton. Marriott Ctyd. Toronto Brampton. For info: www.chiwater.com/Training/Conferences/conferencetoronto.asp

February 24-25 WA
Aquatic Ecosystems Training, Seattle. The Holiday Inn. For info: EOS Alliance: www.eosalliance.org/schedule/calendar/courses-eos#

February 28-March 1 CA
Contaminant Source Tracking & Age-Dating Course, San Diego. Mission Valley Resort. For info: EOS Alliance: www.eosalliance.org/schedule/calendar/courses-eos#

February 28-March 2 CA
California Water & Environmental Modeling Forum 17th Annual Meeting, Monterey. Asilomar Conference Ctr. For info: CWEMF, 916/ 833-6557, cwemf@cwemf.org or www.cwemf.org/index.htm

February 28-March 4 UT
Rural Water Ass'n of Utah Annual Management & Technical Conference, St. George. Dixie Center. For info: www.rwau.net/

March 1-3 DC
Midterm Madness: Ass'n of California Water Agencies Washington, D.C. Conference, Washington. Washington Court Hotel. For info: ACWA, 916/ 441-4545 or website: www.acwa.com

March 2 CA
Project Planning: Integration of Environmental Permits Course, Sacramento. Sutter Square Galleria, 2901 K Street. For info: UC Davis Extension, 800/ 752-0881 or www.extension.ucdavis.edu/landuse

March 2 WA
Managing Stormwater in the Northwest Conference, Seattle. The Conference Ctr., 8th Ave. & Pike. For info: Sue Moir, NEBC, 503/ 227-6361, sue@nebc.org or www.nebc.org

March 2 UT
Funding Green Projects/Planning & Design Grants Workshop, Show Low. City Council Chambers, 2pm. For info: Sara Konrad, Water Infrastructure Finance Authority, 602/ 364-1319 or skonrad@azwifa.gov

March 3 CO
Colorado Statewide Water Roundtable Summit, Westminster. Doubletree Hotel, 8773 Yates Dr. For info: kmaharg@cfwe.org or http://cwcb.state.co.us/

March 3-4 NM
Natural Resources Development on Indian Lands Institute, Albuquerque. Sheraton Uptown Hotel. For info: Mark Holland, RMMLF, 303/ 321-8100 x106, mholland@rmmlf.org or www.rmmlf.org

March 3-4 TX
Texas Water Law - 2nd Annual Conference, San Antonio. Hyatt Regency. For info: CLE International, 800/ 873-7130 or website: www.cle.com

March 3-4 CA
California On-Farm Integrated Water Management Conference, San Jose. For info: George Kiley, 207/ 375-7545, gkiley@agricultureupdate.com or www.agricultureupdate.com/watermanagement

March 3-6 OR
29th Public Interest Environmental Law Conference: Turning the Tides - Creating a Green & Clean Future, Eugene. UO Campus. For info: www.pielc.org

March 7-8 VA
ASIWPCA Mid-Year Meeting 2011, Arlington. Crystal City Marriott at Reagan National Airport. For info: Ass'n of State & Interstate Water Pollution Control Administrators, www.asiwpca.org/

The Water Report
Water Rights, Water Quality & Water Solutions in the West
260 N. Polk Street • Eugene, OR 97402

CALENDAR

(continued from previous page)

March 8 — **AZ**
Water Conservation: 2nd and 3rd Order Effects Brownbag, Tucson. WRRC, 350 N. Campbel Avenue. For info: Jane Cripps, WRRI, 520/ 621-2526, jcripps@cals.arizona.edu or http://cals.arizona.edu/azwater/programs/conf2011/index.html

March 9 — **FL**
TMDLs in Florida, Tampa. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

March 9 — **CA**
Climate Change Adaptation Planning Course, Sacramento. Sutter Square Galleria, 2901 K Street. For info: UC Davis Extension, 800/ 752-0881 or www.extension.ucdavis.edu/landuse

March 11 — **CA**
CWA Section 404: Nationwide & Other Specialized Permits Course, Sacramento. Sutter Square Galleria, 2901 K Street. For info: UC Davis Extension, 800/ 752-0881 or www.extension.ucdavis.edu/landuse

March 14 — **UT**
Water Law & Policy Seminar, St. George. St. George Lexington Hotel. For info: Donna Keeler, Water Law & Policy Seminars, 801/ 292-4662 or http://extension.usu.edu/uwuw/htm/waterlawandpolicyseminar

March 15-16 — **UT**
2011 Utah Water Users Workshop, St. George. Dixie Center. For info: Robert W. Hill, Utah State, 435/ 797-2791, Robert.Hill@usu.edu or http://extension.usu.edu/uwuw/

March 14-17 — **CA**
21st Annual Int'l Conference on Soils, Sediments, Water & Energy & 2011 AEHS Foundation Meeting, San Diego. Marriott Mission Valley. For info: Brenna Lockwood, AEHS, 413/ 549-5170, brenna@aehsfoundation.org or www.aehsfoundation.org/west-coast-conference.aspx

March 16 — **CA**
Ass'n of California Water Agencies 2011 Legislative Symposium, Sacramento. Sacramento Convention Ctr. For info: www.acwa.com/acwa_calendar

March 16-18 — **Vietnam**
Water Tech Vietnam 2011: Energy, Water & Wastewater Conference, Ho Chi Minh City. For info: www.watertechvietnam.vn/index.php

March 17 — **OR**
The Future of Oregon's Water Supply & Management Seminar, Portland. World Trade Center, 121 SW Salmon. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

March 17-18 — **NV**
Law of the Colorado River 13th Annual Conference, Las Vegas. The Cosmopolitan. For info: CLE International, 800/ 873-7130 or website: www.cle.com

March 17-18 — **WA**
Water Law in the Inland Northwest Seminar, Spokane. Spokane Convention Ctr. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

March 17-19 — **UT**
40th Annual Conference on Environmental Law, Salt Lake City. The Grand America. For info: ABA, www.abanet.org/environ/envlaw/

March 18 — **CA**
Green Building Seminar: Legal & Regulatory Realities, Santa Monica. Annenberg Community Beach House. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

March 20-23 — **DC**
Ass'n of Metropolitan Water Agencies Water Policy Conference, Washington. The DuPont Hotel. For info: www.amwa.net/cs/conferences/future

March 21 — **CO**
Fundamental Contaminant Chemistry Course, Greenwood Village. Wingate Hotel. For info: EOS Alliance: www.eosalliance.org/schedule/calendar/courses-eos#

March 21-22 — **WA**
Activated Sludge Process Control Workshop, Port Angeles. Lincoln Ctr. Sponsored by West Washington Water Quality Lab Analyst Section of PNCWA & Peninsula College. For info: Phone: 360/ 417-4845

March 22-23 — **CO**
Applied Contaminant Chemistry & Transport in Soil & Groundwater Course, Greenwood Village. Wingate Hotel. For info: EOS Alliance: www.eosalliance.org/schedule/calendar/courses-eos#

March 23 — **AZ**
Arizona's Water Resources 101: How Arizona is Planning & Investing in its Most Important Resource - Brownbag, Tucson. WRRC, 350 N. Campbel Avenue. For info: Jane Cripps, WRRI, 520/ 621-2526, jcripps@cals.arizona.edu or http://cals.arizona.edu/azwater/programs/conf2011/index.html

March 24-25 — **CO**
Monitored Natural Attenuation of Petroleum & Chlorinated Hydrocarbons in Soil & Groundwater Course, Greenwood Village. Wingate Hotel. For info: EOS Alliance: www.eosalliance.org/schedule/calendar/courses-eos#

March 24-25 — **WA**
Tribal Environmental Regulation & Jurisdiction Course, Seattle. Holiday Inn. For info: EOS Alliance: www.eosalliance.org/schedule/calendar/courses-eos#

March 24-25 — **CA**
Navigating Uncertain Waters: Executive Briefing, Sacramento. DoubleTree Hotel. For info: Water Education Foundation, 916/ 444-6240 or www.watereducation.org

March 25 — **WA**
Storming the Sound Conference, Seattle. Seattle Art Museum. Environmental & Sustainability Education. For info: Anne Butler, 360/ 754-9177 or abutler@pugetsound.org