



The Water Report™

Water Rights, Water Quality & Water Solutions in the West

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STORM WATER REGULATION UPDATE

ROUGH WATERS IN CALIFORNIA

by Wendy L. Manley, Wendel, Rosen, Black & Dean (Oakland, CA)

Introduction

Storm water is probably the most rapidly changing area in environmental regulation, aside from emerging green house gas regulation. While other environmental programs have stabilized, storm water regulation continues to evolve, pushed by expanding knowledge and community demands, but constrained by agency resources, technical limitations, and the courts.

With most industrial, construction and municipal dischargers implementing permit-required programs, the two-phase regulatory program has passed through its infancy. As many surface waters still are not fishable and swimmable as envisioned in the federal Clean Water Act (CWA), regulatory agencies are struggling to refine a permit-based program that effectively manages a highly unpredictable and variable medium, and ultimately improves water quality. Developments in California signal a new phase of storm water regulation. This article examines how storm water regulation is evolving in the Golden State and what might be ahead for the nation.

Background

Storm water runoff was first regulated in 1992, when Phase I regulations imposed permit requirements on large and medium cities (denoted **municipal separate storm sewer** systems or “MS4s”), industrial activities, and construction activities. In California, as elsewhere, individual permits were adopted for MS4s and general permits were adopted for industrial and construction activities. General permits were devised to streamline the administrative burden of regulating large numbers of similar entities or activities. Enrollment under a general permit is a relatively simple matter of submitting a Notice of Intent to comply. By the mid 1990s, most Phase I dischargers had obtained permits and were developing and implementing new programs.

Federal Phase II regulations took effect in 2003, expanding the reach of storm water regulations to certain small MS4s and smaller construction sites (disturbing between one and five acres.)

The Maturation of Phases I and II

THOUSANDS OF ENTITIES BROUGHT INTO THE PROGRAM

The phased approach eased the administrative burden of drawing a large number of regulated entities into storm water regulation. The majority of entities and activities subject to Phase I permits have been brought in under the regulatory umbrella and have established programs. In California, there are now 26 Phase I MS4 permits regulating approximately 300 cities, counties and special districts; approximately 9,500 industrial

Stormwater Regulation

General Permits Decision

Enrollment Requirements

facilities operating under the State's Industrial General Permit; and roughly 20,000 active construction sites subject to the State's Construction General Permit at any given time. Additionally, there are approximately 190 small cities, counties and special districts regulated by the State's Phase II MS4 General Permit (State Water Resources Control Board (2008), Water Boards Baseline Enforcement Report, Fiscal Year 2006-2007, March 28, 2008). While small municipalities in urban areas targeted by the Phase II regulations have received individual permits, California has not yet met its objective of regulating more than 700 universities, schools, hospitals, fairgrounds, military compounds, and other large facilities designated as "non-traditional" small MS4s.

Just before the federal deadline for adoption of small MS4 permits in 2003, the Ninth Circuit Court of Appeals issued its decision in *Environmental Defense Center v. EPA*, 344 F.3d 832 (9th Cir. 2003), cert denied, 124 S. Ct. 2811 (U.S., 2004), throwing the entire notion of general permit administration into turmoil. Under that court's ruling, permitting agencies can not automatically enroll small MS4s under the general permit simply upon receipt of a Notice of Intent (NOI), as had been the practice with general permits. Rather, the permitting agency now must determine that each applicant's program meets the Maximum Extent Practicable standard for municipal storm water dischargers before enrolling MS4s under the General permit. As the simple NOI form was inadequate for this purpose, California required applicants to submit their programmatic documents along with the NOI for review and approval. In addition, the court required the permitting agency to afford the general public an opportunity to review and comment on each application.

The court's enrollment requirements resulted in fewer MS4s being regulated. Faced with the daunting task of processing so many permit applications, California suspended the enrollment requirement for approximately 700 "non-traditional" MS4s until they could be individually designated by the local Regional Water Board. As a result of limited agency resources, NOI processing and approval regularly takes a year or more, so very few of these "non-traditional" MS4s have been processed. Moreover, the MS4 General Permit is now overdue for reissuance, and there is great consternation within the regulated community about how the agency will process permit renewals in a timely manner, particularly for small MS4s only recently enrolled. The court's ruling has also affected the content and enrollment process for other general permits, as noted below.

New Phases: New Controversies

CONTROVERSY OVER PERMIT CONTENT, ADMINISTRATION, AND ENFORCEMENT

The Phase I and II programs generally have succeeded in extending regulatory oversight to major sources of polluted runoff, although an unknown (and potentially significant) number of "non-filers" remain at large, and enrollment of the "non-traditional" MS4s in California is lagging. Second generation permits were adopted for industrial and construction related activities and for most Phase I MS4s, but not without controversy. As a result of numerous factors, some of which are discussed below, adoption of the third generation of permits has become so contentious that the industrial and construction general permits are years out of date.

Regulators are under assault by conflicting pressures and demands from every direction. A more informed public voices growing concern about water quality, and environmental activists intensify their demands for stricter requirements and stronger agency enforcement, while taking an increasing role in direct enforcement under the citizen suit provision of the CWA. The regulated community, stressed by economic conditions, protests high costs and unachievable performance requirements. The legislature, meanwhile, both under-funds agency operations and requires additional reporting on enforcement activities. Regulators, struggling to resolve conflicting demands and develop a workable regulatory scheme, are regularly interrupted by judicial constraints and redirection. As a result, a new phase of storm water regulation is evolving in which permit requirements are highly dynamic, administration is more complex, and enforcement is more aggressive. To illustrate how these factors are shaping the storm water regulatory program, some are described further below.

Wider Public Awareness

Throughout the 1990s, awareness of storm water issues spread from select groups to the general population, in part due to the public education efforts of Phase I Municipalities. Southern California surfers began recognizing and complaining of illness associated with surfing in polluted waters. Encouraged by the citizen activism of Hudson Riverkeeper's in New York, activists across the country formed local waterkeeper organizations in the 1990s.

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Stormwater Regulation

Beach Act

In 2000, the US Congress adopted the Beaches Environmental Assessment and Coastal Health Act of 2000 (BEACH Act), which required coastal states, beginning in 2003, to test coastal waters for pathogens and notify the public when water quality criteria are exceeded. Each year, the National Resources Defense Council publicizes the results of the testing. In each of the last three years, at least 19,000 beach advisories or closures were posted for more than a third of the 3,600-4,000 beaches monitored. Approximately four to five percent of beach days were affected. Coastal communities began recognizing the economic impact of closed beaches. A study in 2005 estimated that illness linked to swimming at Newport Beach and Huntington Beach in Southern California costs the public \$3.3 million/year (Ryan Dwight, *Estimating the Economic Burden from Illnesses Associated with Recreational Coastal Water Pollution - A Case Study in Orange County, CA* (UC Irvine, 5/2/05)). EPA estimates nearly one third of all Americans visit coastal waters each year, contributing nearly \$44 billion annually to local economies (EPA, Waterheadlines, 6/27/06).

Runoff Issues

Looking ahead, it appears that water quality issues are becoming both more chronic and severe. Examples of such issues related to runoff (particularly nutrients) and perhaps exacerbated by climate change, include:

- “Dead zones” off the Oregon coast and in the Gulf of Mexico
- Massive blooms of toxic cyanobacteria (blue-green algae) in northwest rivers and lakes
- Outbreaks of *Pfiesteria*, a microscopic dinoflagellate that kills fish

As a force in public policy, community pressure on regulators undoubtedly will continue to increase.

Beach Impacts

| | California | | | Oregon | | | Washington | | |
|--|------------|------|---------|--------|-------|-------|------------|------|-------|
| | 2005 | 2006 | 2007 | 2005 | 2006 | 2007 | 2005 | 2006 | 2007 |
| Number of monitored beaches | 426 | 425 | 424 | 20 | 20 | 20 | 73 | 80 | 65 |
| Number of beaches affected by notification actions | 153 | 139 | 138 | 11 | 8 | 14 | 6 | 20 | 8 |
| Percentage of beaches affected by notification actions | 36% | 33% | 33% | 55% | 40% | 70% | 8% | 25% | 12% |
| Total number of beach days | | | 126,284 | | 2,500 | 2,440 | | | 7,705 |
| Percentage of beach days affected by notifications | 4% | 5% | 5% | 4% | 1% | 4% | 3% | 4% | 3% |

Agency Enforcement

Aggressive Enforcement

Recent high-profile agency enforcement actions have also contributed to wider awareness of storm water issues. Nationally, EPA made headlines with a record \$3.1 million settlement with Wal-Mart in 2004 for violations at 24 construction sites in nine states (see TWR #4, Water Briefs). In February of this year, The Home Depot agreed to a \$1.3 million civil penalty for similar construction site violations at 30 sites in 28 states (see TWR #49, Water Briefs). Earlier this summer, four home builders agreed to pay EPA more than \$4.3 million to settle violations in multiple states at numerous construction sites. The dischargers also agreed to corrective action, including heightened compliance oversight, training, increased inspections and, in some cases, a supplemental environmental project. These cases highlight a trend toward more aggressive enforcement action at EPA. The same trend can be seen at the state level. In California, not only have agency enforcement actions increased in number over the years, but they involve more substantial penalties.

Construction Penalties

Construction sites attract the most attention, as sediment-laden water flowing off the property is particularly noticeable. Civil liability penalties on construction activities have exceeded \$100,000 on several occasions. In one of the highest storm water penalties in state history, a developer recently settled civil liability in the amount of \$2.75 million for a number of construction site violations near Lake Tahoe. In another recent case, a transit district was fined \$685,000 in early 2008 for inadequate or nonexistent Best Management Practices (BMPs) on its construction site. While federal regulations allow contractors and operators to enroll under EPA's Construction General Permit, California requires that the land owner file the NOI and assume compliance responsibility. Since the contractor controls most aspects of the job site, this creates a unique dynamic that property owners need to be careful to address.

Property Owner Compliance

MS4s have been targeted more in the last three to four years. In one case, both a developer and a municipality (City of Escondido) were fined for discharge of sediment-laden water by the construction contractors. The City paid a reduced penalty of \$50,000 for inadequate oversight of construction within its jurisdiction. The City had conducted site inspections, but was not getting results. A few months ago, the Los Angeles Regional Board issued Notices of Violation to 20 cities for storm water discharges that exceeded water quality objectives for bacteria.

Stormwater Regulation

Citizen Suits

Sampling Requirement

Municipal Lawsuits

Numeric Effluent Limits

Washington's Industrial Permit

Blue Ribbon Panel

Citizen Activism

In general, storm water permits have proven fertile ground for citizen suits. As a result of broader awareness of storm water impacts on water quality, more people have entered the arena of environmental activism, taking an aggressive enforcement stance and increasing the pressure on regulatory agencies to strengthen permit requirements. In the 1990s, a few organizations were successful in finding and suing industrial facilities operating without permits. Over the last decade, the number of such organizations increased to pursue the low-hanging fruit of non-filers. However, as the qualitative nature of storm water permits makes them more challenging to enforce, some groups sought to influence the terms of permits by urging more quantitative requirements.

One such effort entailed a successful challenge of the 1999 Construction General Permit, in which a California Superior Court was persuaded to issue a writ of mandate ordering the State Water Board to require storm water sampling and analysis at construction sites (*San Francisco BayKeeper, et al. v. State Water Resources Control Board*, Case No. 99CS01929 (Sacramento Sup. Ct. September 15, 2000)). The court determined that sampling was necessary to determine if BMPs are preventing further impairment of sediment-impaired receiving waters, as well as to determine if other pollutants, not visually detectable, are "causing or contributing to an exceedance of water quality objectives." The order kept the SWRCB busy for more than four years amending the permit and developing a 49-page guidance on implementing the new sampling requirement.

Citizen enforcement continues to thrive and expand, supplementing agency enforcement — which in California is severely resource limited. Citizen enforcers frequently target construction sites discharging muddy runoff, industries with outdoor operations (such as metal recycling, auto dismantling, mines, and metal fabrication) and, more recently, municipalities. Despite the lack of defined numeric effluent limits in most MS4 permits, citizen groups have begun to sue municipalities, alleging that a discharge of a pollutant at levels greater than water quality standards established for receiving waters "causes or contributes to an exceedance of water quality standards." Lacking resources to support a strong enforcement program, the State Water Board offered up support earlier this year for changing California law to allow citizen's to enforce state law, in addition to federal law (SWRCB, 2008).

Controversy Slows Permit Adoption

Controversy over the permit requirements, particularly with regard to numeric effluent limits, has slowed the process of adopting a new generation of permits. With CWA National Pollution Discharge Elimination System (NPDES) permits having a regulatory life of five years, the Industrial and Construction permits are now eleven and nine years out of date, respectively, in California.

The State's failure to reissue these permits is not for lack of trying. The State Water Board released draft industrial permits in 2002, 2003 and 2004. Each time, the storm water program was sharply criticized for not achieving adequate improvements in water quality. Critics charged that the continued illness among surfers, commonplace occurrence of beach closures, rising number of water bodies listed as "impaired" under CWA §303(d), and lax enforcement were evidence that the storm water program was a failure. More stringent permit requirements and in particular, enforceable numeric effluent limits are, in the view of critics, both feasible and essential. Sensing a lawsuit regardless of what it did, the State suspended permit development and sought independent expert advice.

California's experience is not unique. In Washington, for example, the Department of Ecology substantially revised its Industrial General Permit in 2002 after settling an appeal of its 2000 permit, and then revised it again after another appeal and new state legislation. Just recently, the agency announced that it would extend the current permit until April 30, 2009 (it expired May 31, 2008), while it negotiates with stakeholders on the terms of a new permit.

Numeric Effluent Limits Feasibility

BLUE RIBBON PANEL CONVENED

The State Water Board convened a blue-ribbon panel of experts (Panel) to establish whether numeric effluent limits are feasible in storm water permits. The Panel first met in September 2005 and released its findings and recommendations in June 2006 (Blue Ribbon Panel, *The Feasibility of Numeric Effluent Limits Applicable to Discharges of Storm Water Associated with Municipal, Industrial, and Construction Activities*, June 19, 2006).

The Panel's report offered a little something for everyone. Acknowledging the technical difficulties involved with monitoring storm water, the Panel nevertheless found that in particular circumstances, numeric criteria in the form of "action levels" and effluent limits could be of some value.

Stormwater Regulation

Action Levels

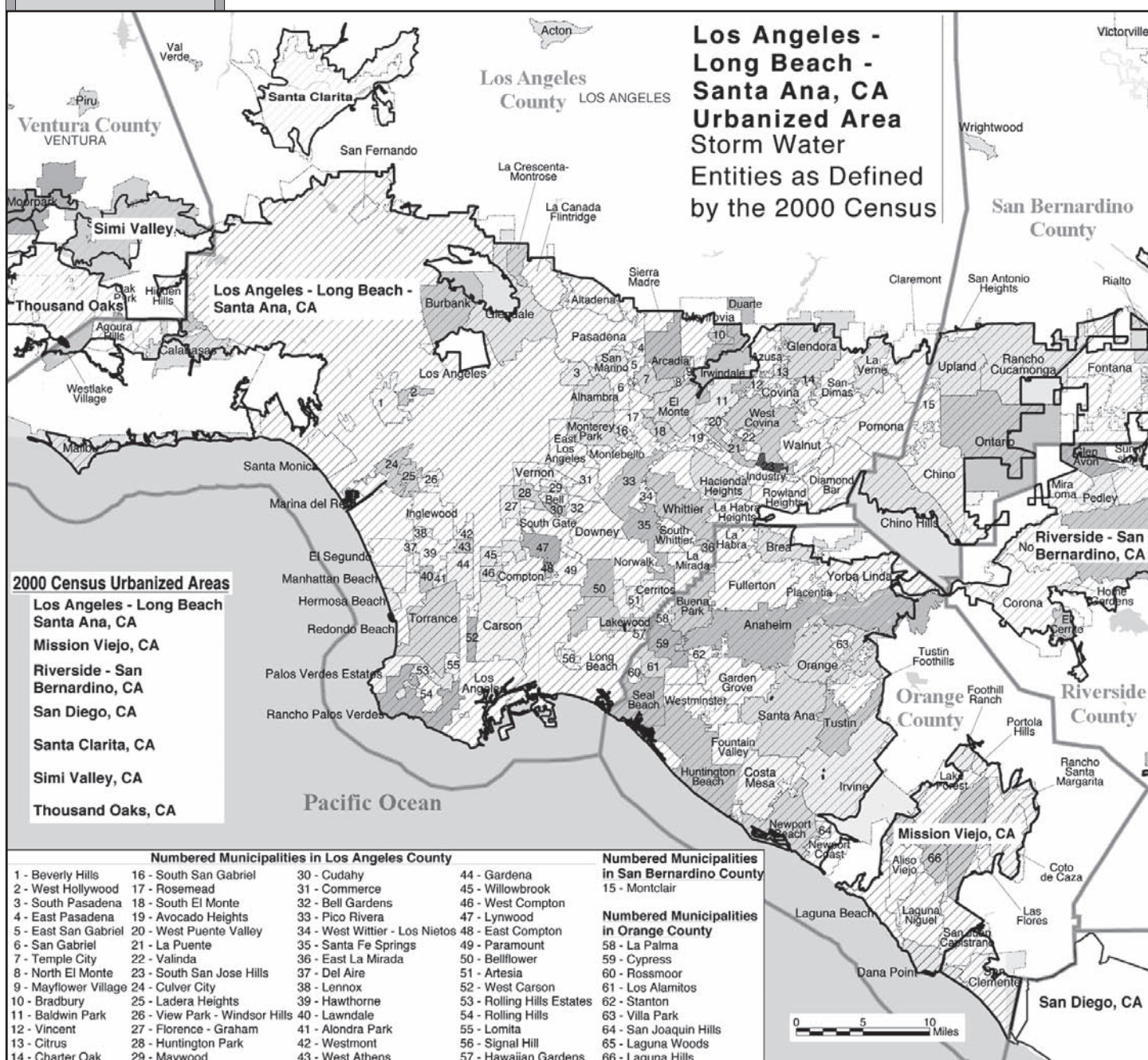
TMDLs

The Panel determined that enforceable numeric effluent limits are not feasible for urban (municipal) storm water discharges. Instead, the panel suggested “action levels” to trigger some action to improve water quality when exceeded.

The Panel determined that numeric effluent limits are feasible for some industrial categories. Such numeric limits should be set to meet any established Total Maximum Daily Load (TMDL) if there is one, otherwise, they “should be based upon sound and established practices for storm water pollution prevention and treatment, using an approach analogous to that used in the NPDES wastewater process” (phased numeric limits based on best currently available technology). The panel suggested “action levels” could be used to trigger BMP evaluation where data is inadequate for setting numeric limits.

For construction sites, the panel determined that numeric limits were feasible if active treatment technologies (e.g., flocculating chemical agents) were implemented, but otherwise, action levels may be feasible.

Report in hand, agency staff returned to the business of permit development and released a preliminary draft construction general permit in early 2007.



Draft Construction General Permit**BIG CHANGES AT HAND****Stormwater
Regulation****Requirements
Tightened****Objectives****CGP
Overhaul****Risk
Categories****Risk Worksheet
Limitations****Construction
Phases**

Facing increasing public pressure to demonstrate improvements in water quality, and with a greater understanding of technical issues, California state regulators are actively moving to expand and tighten requirements as they adopt revised permits. This is apparent in the draft construction general permit (CGP) presently under consideration in California.

Proposed Changes

Nearly every aspect of the CGP was revised in the draft permit released in March of this year. Proposed new and expanded requirements swell the draft permit to upwards of 130 pages and dramatically increase the complexity and cost of permit implementation and compliance. The State Water Board's stated objectives are to improve compliance, increase accountability, streamline enforcement and, as specifically highlighted by permit drafters, control sediment discharges during construction and reduce post-construction impacts.

SIGNIFICANT CGP CHANGES INCLUDE:

- Shift to a risk-based approach
- Expanded monitoring, including sampling, analysis and bioassessment of receiving waters and photographic documentation
- New requirement for a Rain Event Action Plan
- Addition of Numeric Standards, including Effluent Limits and Action Levels for pH and turbidity
- Specifications for Active Treatment Systems (e.g., use of flocculants to remove sediment)
- More prescriptive BMPS
- New post-construction controls (hydromodification restrictions) applicable to new development and redevelopment
- Expanded "Permit Registration Documents," including new requirements for "Legally Responsible Person" to electronically file documents, including (for the first time) a Storm Water Pollution Prevention Plan (SWPPP) and site map, along with NOI and fee
- New Qualified SWPPP Developer and Qualified SWPPP Practitioner requirements, including minimum qualifications and training

In sum, the permit has been thoroughly overhauled.

Risk-Based Approach

The draft permit is restructured to implement a new risk-based approach that prescribes specific requirements based on the risk that construction will impact water quality. Project proponents must assess a project's sediment and receiving water risks to categorize the project into one of four risk level categories. The risk calculation worksheet incorporates such factors as soil erodability, proximity of receiving waters, and use of Active Treatment Systems (ATS), among other things. Permit requirements are generally less rigorous for lower risk projects (Risk Level 1) than for higher risk projects (Risk Level 3). Highest Risk Level 4 projects are not eligible to enroll under the general permit and must obtain an individual permit — a costly and time consuming process under the best of circumstances. With agency resources as limited as they are, this Level 4 requirement will surely affect project development.

Overall, the risk-based approach has been generally well received because it focuses efforts where they are most likely to be needed and beneficial. Many are disappointed, however, that the State Water Board did not take full advantage of the opportunity provided by the risk calculation to actually encourage a reduction of risk. The risk factor worksheet is heavily weighted toward factors that are outside of the control of the discharger, such as soil types, slope, distance from sensitive receiving water, etc. For example, limiting soil disturbance to the dry season undoubtedly benefits water quality, but it provides no credit toward reducing a site's calculated risk. In addition, the risk factor is the same for all projects in a watershed discharging to sediment-impaired waters, regardless of how far they are from receiving waters and what lies in between. Moreover, the permit affords no opportunity to recalculate the risk factor at different phases, stages or portions of construction.

Permit requirements also vary with the phase of construction (e.g., mass grading or vertical build) — another element that affects risk. For example, erosion and sediment controls are stressed when projects are at the mass grading phase, whereas the permit emphasizes control of the various types of pollutants and pollutant-generating activities during the vertical build stage.

Stormwater Regulation

Active Treatment Systems

The use of active treatment systems (ATS) is already becoming commonplace on larger construction sites. Active treatment typically involves applying flocculants to detained storm water to accelerate sedimentation. The draft permit contains design and performance standards and operational requirements for ATS, but does not require its use. ATS can be used to lower the risk level of a site. However, ATS is difficult and expensive to implement on smaller sites.

The draft permit contains new and expanded monitoring requirements, including a Rain Event Action Plan (REAP) for every storm event. Sampling is not a new requirement, but the draft permit increases the amount of sampling to include analysis and bioassessment of receiving waters and photographic documentation in accordance with a Construction Site Monitoring Program.

Effluent Limits (NELs)

Action Levels (NALs)

Numeric Standards

For the first time in California, the State Water Resources Control Board (SWRCB) proposes to include numeric standards in a general storm water permit. Numeric Effluent Limits (NELs) and site-specific Numeric Action Levels (NALs) are proposed for pH and turbidity. The proposed NELs are 1000 nephelometric turbidity units (NTU) for turbidity and the range of 6.0 and 9.0 for pH. NELs would be enforceable; exceedance would be a permit violation, four or more of which in six months would trigger a mandatory penalty of \$3,000 under California's minimum mandatory penalty law. Establishment of the proposed turbidity standard of 1000 NTU was somewhat arbitrary. Agency staff explained that exceeding 1000 NTU reflects failure to do the minimum necessary to keep sediment out of storm runoff. They warn that discharges measuring less than 1000 NTU, even substantially so, are not necessarily permissible; they may be subject to enforcement for causing or contributing to an exceedance of water quality standards. As such, it sounds more like a water quality based effluent limit than a technology based effluent limit, as is appropriate for industrial and construction discharges. The pH NEL only applies to site effluent where and when there are activities that could result in harmful pH discharges. In contrast, site-specific NALs, derived from the Modified Universal Soil Loss Equation (MUSLE) are intended to provide performance feedback so dischargers can see what is and is not working. NAL's are not directly enforceable, though an exceedance could prompt enforcement based on failure to implement appropriate measures.

NEL Drawbacks

Storm Design Missing

The value of NALs in storm water management is that they provide a clear trigger for site evaluation and BMP scrutiny. NELs, however, are more problematic. This is particularly true for smaller sites, where the Blue Ribbon Panel recognized that an Active Treatment System (ATS) may not be suitable. Given the inherent variability in the water quality of runoff from traditional BMPs, an NEL exceedance on sites using traditional BMPs rather than ATS does not necessarily indicate an inadequate effort, but it will be enforceable nonetheless. Since the draft permit fails to establish an applicable "design storm event" (e.g. inches of precipitation per 24 hours or return frequency of once in so many years) for NELs, an exceedance (and violation) may occur during more unusual or extreme storms, regardless of the measures employed. Additionally, since multiple samples are required at sites in Risk categories 2 and 3, many sites are likely to be subject to mandatory minimum penalties for nearly every storm. Finally, exceedance of an NEL at Level 3 sites triggers continuous monitoring. The permit does not explain how to assess compliance for continuous monitoring.

BMP Requirements

More Prescriptive BMPs

The draft permit is much more prescriptive in its BMP requirements, containing a number of specific BMPs. This is a direct result of the *EDC v. EPA* case cited above. The State Water Board reasoned that if permit compliance could be measured against the permit without need to consult the permittee's Storm Water Pollution Prevention Plan (SWPPP), no court would be justified in directing the agency to review and approve individual SWPPPs — an impossible task for a state with 20,000 construction permits in effect.

Post-Construction Controls

The draft permit also contains new post-construction control requirements intended to prevent new development and redevelopment from changing a site's hydrology — that is, to prevent increases in the volume and rate of storm runoff resulting from development or redevelopment (hydromodification). Since hydromodification relates to the amount of impervious surface, it is really more of a design than a construction issue. Hydromodification is already addressed during the project approval process at regulated MS4s. Despite protests that planning requirements are beyond the purview of a permit that takes effect only after planning is complete, agency staff are committed to the requirement because it is their only way to impose such requirements in areas not under MS4 permits. The draft permit exempts projects subject to such requirements under existing MS4 programs.

Enrollment

Permit enrollment will also change dramatically. The current simple process of enrollment (submitting an NOI and fee payment) will be replaced by electronic submission of "permit registration documents" by a

**Stormwater
Regulation****Public Review****Compliance
Oversight****Training
Requirements****Agency
Approval****Evolving
Policy****Water Quality
Objectives****Funding Issues**

“legally responsible person.” For the first time, construction permittees will have to submit both a SWPPP and site map, which will be posted for public review. At this time, no particular procedure has been devised to address the inevitable comments. The legally responsible person may, with certain limitations, delegate certain responsibilities to a duly authorized representative. Once the electronic process is in place, designated individuals will be able to readily update documentation and submit data and various reports. Since the information will be readily available for public review on the agency website, many fear this will prompt a landslide of citizen enforcement actions.

Finally, taking the training requirement to a new level, the draft permit requires most compliance activities to be performed by a Qualified SWPPP Developer (QS Developer) or a Qualified SWPPP Practitioner (QS Practitioner) and establishes minimum credentials for these positions, including certifications and training. SWPPPs must be prepared, amended and certified by a QS Developer. Individuals responsible for inspections, sampling and analysis, REAP preparation, and general compliance must be either a QS Practitioner or QS Developer. A shortage of qualified individuals will likely exist after permit adoption, as no provision is made for experienced individuals to serve in those positions without professional certification. Since civil engineers, geologists, hydrologists, and landscape architects may, with “appropriate experience” be QS Developers, individuals with such training but less storm water experience will likely replace the more experienced, but now “unqualified” individuals. Two years after permit adoption, both QS Developers and QS Practitioners must have attended a State Water Board approved training course to continue in those positions.

The draft permit also contains new reporting and agency approval requirements. The regulated community is troubled by the expectation that agency response will not be timely since agency resources are spread so thin. Only approximately 100 staff members statewide are dedicated to the storm water program, yet a recent analysis concluded that approximately 400 staff are needed for the program to function effectively (SWRCB 2008).

The draft permit prompted nearly 200 written comments. If adopted substantially as proposed, the construction storm water permit will raise the stakes for an already stressed construction industry. The cost of storm water compliance will undoubtedly increase as will the risk of enforcement. At the same time, it is not altogether clear that the new measures will result in measurable improvements in water quality.

Constraints on Regulators**DODGING JUDICIAL BULLETS**

In addition to suffering for lack of personnel, state and federal agencies face their own form of enforcement, as courts continue to issue decisions that shape evolving policy. In addition to requiring sampling at construction sites and agency approval of individual MS4 storm water programs described above, the courts have made other rulings that affect storm water regulation.

Just recently a court ordered a Regional Board to “cease, desist and suspend all activities relating to the implementation, application and/or enforcement of the Standards in the LA Basin Plan, as applied to Stormwater.” *Cities of Arcadia, et al. v. SWRCB, Super. Ct. Orange County*, No. 06CCO2974 (July 2, 2008). In a ruling that is expected to have far-reaching affects, the court found that the Los Angeles Regional Board had failed to fully evaluate the reasonableness of water quality objectives as required by state law. California’s Water Code requires that the establishment of water quality objectives to protect beneficial uses must include consideration of several factors, including economics, the need for housing, and probable future beneficial uses, among other things. The court ordered the agency to suspend implementation and enforcement of water quality objectives as applied to storm water until full consideration of those factors is accomplished, and to eliminate “potential beneficial uses” and the water quality objectives established to achieve them. In response, the Los Angeles Regional Water Board refused to enroll any new industrial or construction dischargers and cancelled a workshop to solicit input on the draft MS4 permit for Ventura County. A month later, with the court’s blessing, permit enrollment resumed.

The State may also face some responsibility for funding local MS4 programs under the state Constitution. Program funding is a serious problem for many municipalities, particularly the smaller communities without the benefit of economies of scale. City councils nationwide are creating storm water utilities and adopting new fees to support them, though such moves are often unpopular with a significant portion of the community. Municipalities in California face an additional hurdle — a Constitutional provision known as Proposition 218 prohibits any new or increased property-related fees without approval of the electorate. While Los Angeles did succeed in 2004 to gain the support of 76% of its voters in passing a storm water fee (projected to generate \$500 million in the first five years), few communities have attempted a similar feat. Legislative attempts to amend the Constitution have failed, and last year,

**Stormwater
Regulation****Litigation
Impact****Municipal
Dischargers**

a California court considered a claim that storm water program costs are reimbursable under another Constitutional provision adopted by the voters that requires the State to reimburse local government costs whenever the State mandates a new program or higher level of service. The court remanded the issue back to the Commission on State Mandates, which has yet to make a determination.

Litigation continues to shape storm water policy at the US Environmental Protection Agency (EPA). In July, EPA reissued, without modification, the existing construction general permit (applicable in states not authorized to administer the CWA) for a two year term, pending development of effluent limitation guidelines (ELGs). Under a 2006 court decision, EPA has a non-discretionary duty to promulgate ELGs and New Source Performance Standards for identified sources of toxic or nonconventional pollutants under CWA §1314(m). *NRDC v. U.S. EPA*, 437 F.Supp 2d 1137, June 27, 2006. Also in July, environmental organizations sued EPA in federal district court in Florida, for failing to set standards for farm and urban runoff hoping to force establishment of numeric effluent limits for storm runoff nationwide (*Florida Wildlife Federation, et al. v. EPA*; complaint available at Earthjustice's website: www.earthjustice.org/our_work/cases/).

Conclusion

Storm water regulation will continue to evolve in significant ways for the foreseeable future shaped by the forces of citizens, the courts, the regulated community, and technical advances. These new changes will challenge the regulated community, particularly municipal dischargers who face complex program requirements and uncertain outcomes for their efforts and expenditures.

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Stormwater Marketplace

Green Economy



PORTLAND'S STORMWATER MARKETPLACE



by Dan Vizzini, City of Portland Bureau of Environmental Services

INTRODUCTION

The City of Portland, Oregon (City) is perceived, nationally and internationally, as a leader in “green” or sustainable stormwater management practices. The City comes by its leadership position honestly, having invested decades of effort and tens of millions of dollars of utility ratepayer dollars in search of effective, multi-purpose and integrated technologies to collect, treat, and safely reintroduce urban drainage into local watersheds. The City’s pioneering approach to sustainable stormwater management has both benefited from and contributed to the concurrent evolution of science, technology, regulation, and economics. In Portland, traditional solutions — largely dependent on governmental command and control — are increasingly being supplemented with broader public and business community actions and informed personal choices. These actions are promoted and supported by social recognition, public incentives, and an emerging green economy of private stormwater entrepreneurs.

Currently, a local “stormwater marketplace” is emerging from the informed community values that have been shaped by more than 15 years of public education and outreach and intensive technical assistance.

OVERVIEW

The City recognizes that more than 150 years of urban development have damaged our watersheds and compromised the health of our ecosystems. Moreover, the City has “run the numbers” and established that — generally speaking — the ecological services provided by healthy, functioning ecosystems are clearly supplied in a much more cost effective and efficient manner than technological solutions (generally aimed at blunting the consequences of environmental degradation after the fact) can ever hope to achieve.

Getting back to sustainable watershed health requires a “restoration” level of effort if the enormously more cost effective services supplied by a functioning ecosystem are to be recovered. Investments and behaviors that fail to exceed “no net loss” will merely lock in the status quo.

Traditional public actions (regulation, utility investments) are neither sufficient nor sustainable at levels required to reverse the accumulated degradation. Despite significant popular support for clean rivers and healthy watersheds, ratepayers resist the imposition of new utility charges and the subsequent rate increases required to finance even the most basic restoration and mitigation efforts.

Public-private partnerships help leverage limited utility investments, but cannot be implemented in sufficient numbers to achieve sustainable watershed health. Partnerships are very useful, particularly during the early stages of social and economic transitions, but cannot produce enough change over enough time to reverse the effects of industrialization and urbanization.

Portland realizes that something more is required to achieve sustainable watershed health. Real and sustained change is possible when informed personal values find expression in beneficial behaviors and progressive investment decisions. Self-perpetuating change can be achieved once progressive behaviors are reinforced and multiplied by community recognition and strategic activities that enable private markets.

Years of analysis and experience has led the City to the conclusion that the most effective and sustainable stormwater management: occurs at the source; mimics natural functions; is integrated into the built environment; and achieves multiple environmental benefits. In other words, effective stormwater management is predominately *local*, *private* and *green*.

Between 2011 and 2040, Portland’s combined sewer basins will redevelop at ever-increasing urban densities, increasing the impervious land cover of buildings and pavement as well as increasing the annual volume of stormwater runoff into public sewers. This increased stormwater volume will overburden an aging sewer system and threaten a recurrence of sewer back-ups and combined sewer overflows. The capital and operating costs of managing a billion gallons of additional annual stormwater runoff is expected to total more than \$375 million over the next 30 years. Can the City achieve the desired levels of stormwater management at reduced public and private costs, and provide higher levels of ecosystem and community benefits as well?

Portland set out to answer this question in the summer of 2005 with the help of a grant from the Science to Achieve Results (STAR) Program of US Environmental Protection Agency’s (EPA’s) National Center for Environmental Research. The \$288,000 grant made it possible for the City to investigate the feasibility of using market forces to animate and greatly expand private investments in sustainable stormwater management practices. [See EPA Grant #X3832207: *Using Market Forces to Implement Sustainable Stormwater Management*] This article provides a preliminary look at the findings and conclusions of the feasibility study.

Cost Effective

Restoration Necessary

Watershed Sustainability

Combined Sewer Overflows

Market Feasibility Study

Stormwater Marketplace

Soil Conditions

Facility Management

Evolving Approaches

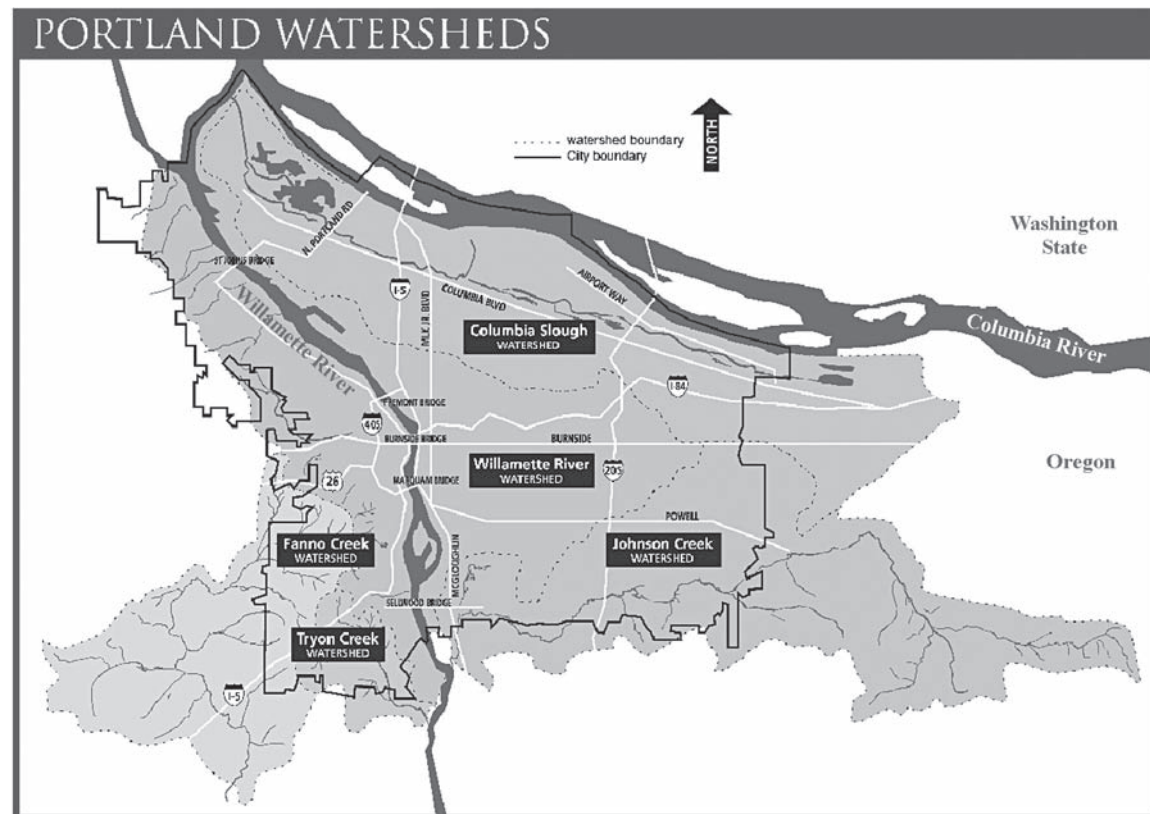
BACKGROUND

PORTLAND - THE 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 568,000 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 which currently generates 17 billion gallons of annual urban runoff.

Portland's urban landscape is varied. Neighborhoods east of Interstate 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. Formed in 1977, 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 in excess of \$60 million in user fees in the current fiscal year to finance capital projects, operations, regulatory activities, and incentive programs.

PORTLAND LEADERSHIP

EXPERIENCE & EXPERIMENTATION

The City's stormwater programs began in fits and starts and were initially more reactive than strategic. Early stormwater management experiments in the 1980s produced local and regional facilities that provided limited benefits, were expensive to maintain, and were not well-integrated into the urban landscape. Increasing levels of regulation drove Portland to develop more effective technologies that reflect an evolution and integration of stormwater science, engineering and systems modeling.

The synergy of regulation, science, engineering, and modeling produced improvements in planning and design that, in turn, produced new and "sustainable" approaches to stormwater management. Sustainable stormwater management embraced a powerful set of governing principles to guide public investments in stormwater infrastructure and the regulation of runoff from private developments.

Stormwater Marketplace

Program Principles

PORTLAND'S STORMWATER MANAGEMENT PRINCIPLES INCLUDE:

- 1) Managing runoff as close as possible to its source
- 2) Mimicking simple and natural hydrologic functions
- 3) Integrating runoff into the built environment
- 4) Designing for multiple and sustainable benefits
- 5) Acting early to avoid costly mitigation and restoration



Plans & Strategy

Portland's Clean River Plan (2000) and Integrated Watershed Management Plan (2005) signaled a significant shift in the City's stormwater management program. The program went from being reactive and single-purpose, to promoting strategies that produce multiple benefits to advance comprehensive, integrated and measurable watershed goals. The City's watershed management program introduced an integrated approach to planning and decision-making.

PORTLAND'S INTEGRATED APPROACH INCLUDES:

- **DEVELOPING A SCIENTIFIC FRAMEWORK:** Using accepted scientific methods to define the ecological characteristics of healthy watersheds. Using this framework to develop detailed characterizations of each Portland watershed.
- **SETTING MEASURABLE GOALS AND OBJECTIVES:** Establishing goals, objectives and measurable indicators of watershed health.
- **INTEGRATING RESPONSES TO REGULATORY REQUIREMENTS:** Basing watershed goals and objectives on an integrated response to regional, state and federal environmental laws. Avoiding narrowly-focused, single-purpose implementation strategies.
- **COORDINATING PROGRAM IMPLEMENTATION:** Using the framework, characterizations, goals and objectives to guide the identification, analysis, selection, implementation and monitoring of actions to improve watershed health. Ensuring that City activities not directly related to improving environmental conditions are consistent with the City's watershed health goals.

GOING GREEN

Integrated watershed planning and sustainable stormwater management principles have produced a fundamental shift in stormwater management. Traditional "grey" technologies that dispose of urban drainage are giving way to "green" strategies and technologies that integrate stormwater into the built environment. Green or sustainable stormwater technologies treat runoff as an asset to be employed for the health of watersheds, rather than a liability to be removed as quickly as possible from our urban landscape.

Managing stormwater runoff at its source invariably leads to a shift in focus from public utility investments on utility-owned properties and in public rights-of-way to private investments on private property. The shift from grey to green necessitates a fundamental change in the relationship between public utilities and property owners. The evolution in regulations, science, and engineering is now causing an evolution in the traditional relationship of the City to property owners. Public-private partnerships are evolving to recognize the critical role of private action and embrace new engagement strategies that fully utilize information technologies, social networks, and market forces to achieve environmental goals.

Going Green places significant demands on public agencies and communities, trained by decades of public regulation and traditional public-private partnerships.

Integrated Approach

"Grey" to "Green"

Private Property Focus

Stormwater Marketplace

Grey Infrastructure

Grey Infrastructure... pipes, pumps, paving... the very foundation of an urban landscape. Grey infrastructure consists of streets, sidewalks, inlets and drainage systems that make modern cities accessible and mobile. Grey infrastructure consists of the pipes, pumps, reservoirs and treatment plants that bring clean, potable water to urban communities, and remove, treat and dispose of wastewater produced by those communities. Grey infrastructure is the pipes, tunnels, pumps, culverts, outfalls, hardened channels and revetments that collect, convey and dispose of stormwater runoff and prevent urban flooding. Grey infrastructure is highly designed and engineered with specific purposes and uses in mind. The structures and facilities are impervious, acting as intermediaries, interposed between the urban landscape and the underlying and surrounding natural world of watersheds and airsheds. They are essential to the life of modern cities, but do little to enhance or strengthen urban ecosystems.



Strategy Components

PORTLAND'S SUSTAINABLE STORMWATER MANAGEMENT RESTS ON FOUR CORNERSTONES:

- **INVESTED LEADERS** describe a unifying vision based on community values, identify measurable goals based on good science, and authorize and support sustained actions based on long-range planning and prioritization. Leadership comes from City Hall, public agencies, community organizations, local businesses, academia, and inspired citizens.
- **EFFECTIVE COMMUNICATIONS**, sustained over time, produce high levels of public understanding and support for stormwater initiatives. Effective messages describe community goals and assist audiences to find their place in the "big picture." Particular attention is given to activities and events that engage citizens, build social networks, link communities of interest, and encourage private actions to complement public investments.
- **TECHNICAL COMPETENCY** begins with a commitment to evidence-based decision-making. Limited resources and urgent regulatory deadlines impose a premium on making multi-purpose investment decisions. Sustainable solutions require a multi-disciplinary approach to designs that are simple, elegant, efficient, and inspiring.
- **INTEGRATED MARKETS** provide the energy and capital to multiply private stormwater investments. Portland is now taking substantial steps to tap the power, creativity, and resourcefulness of a local green economy consisting of local vendors, service providers, and suppliers.

Property-Based Stormwater Incentives: Early Examples

Portland's interest in private stormwater investments dates back more than a decade. Several City programs have blazed a trail for development of a marketplace for stormwater goods and services.

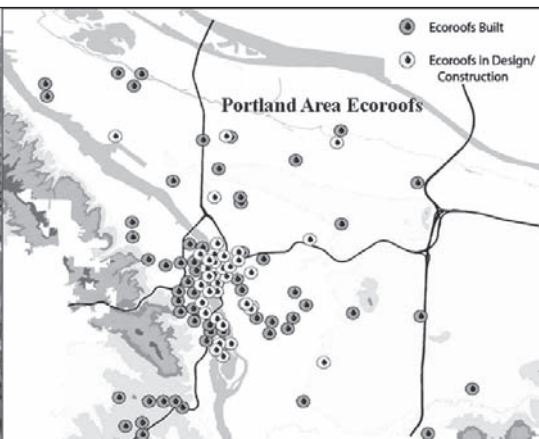
Development Density Bonuses

Focused on new developments in the central city, the development density bonus rewards developers for installing ecoroofs and roof gardens. Developments receive one square foot of floor area bonus for each

square foot of roof garden. The ecoroof bonus ranges from 1:1 to 3:1 depending on the extent of the roof coverage. Developers must record covenants to permanently retain and maintain the green roof. The bonus has produced an estimated \$225 million in additional private development at 11 participating sites. And the program has spurred ecoroof developments outside of the target area. Portland has more than 120 ecoroofs in place and more are on the way.

Density Incentives

Portland Building Ecoroof



Downspout Disconnection Program

- Targeted to homes and small businesses in combined sewer areas on the east side of the Willamette River
- Great opportunity for public education about stormwater and CSOs
- Property owners and community volunteers do the work after the City surveys each site and approves each disconnection
- Property owners receive \$53 per disconnected downspout... Community groups earn \$13 per disconnected downspout
- Since 1994, the program has reached 56,000 properties, 1.2 billion gallons of stormwater per year from the combined sewer system



City of Portland, Oregon - Bureau of Environmental Services - June 25, 2008
Stormwater Marketplace Feasibility Study (#X3-83220701-0)

Downspout Disconnection Program

The Downspout Disconnection Program was established in 1994 to remove residential roof runoff from combined sewers on the east side of the Willamette River. The program has been expanded to include small commercial and multi-family properties. The program sends canvassers 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. Since 1994, the program has reached 56,000 properties, and disconnected 1.2 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.

Discounted Utility Charges

- Itemizes the stormwater bill into on-site and off-site stormwater management services
- Offers up to 100% discount of the on-site portion ... 35% of the total stormwater bill
- First discount comes with a retroactive credit worth as much as 12 months of the stormwater discount
- Discounts are calculated based on the extent and effectiveness of private facilities to control flow rate, pollution and disposal
- Since October 2006, the City has processed more than 33,000 registrations
- Full participation may reach 110,000 of the 176,000 stormwater ratepayers



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Stormwater Marketplace Feasibility Study (#X3-83220701-0)

Discounted Utility Charges

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 – provides an opportunity for a ratepayer to eliminate the on-site portion of the stormwater bill, about 35% of the total user fee. The City granted an additional one year of retroactive credits to ratepayers who registered prior to June 20, 2007. Discounts for single family residences are based on the on-site management of roof runoff. All other 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.

Leveraged Local Improvement Projects

- Couple watershed enhancement and stormwater management improvements with local street improvements.
- Partner with local property owners to design green facilities and a wetland into the streetscape.
- Use stormwater utility investments to leverage property owner support for an equal amount of special assessments to pay for local street improvement.
- Increase safety on a local residential street, improve access to individual properties, create a neighborhood amenity (wetlands), and eliminate a major source of particulates and pollutants at the headwaters of a local stream.



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Leveraged Local Improvement Projects

Portland has partnered with property owners to use local special assessment districts to leverage additional investments in watershed enhancement and stormwater management improvements. These partnerships make it possible for property owners to improve substandard local streets, reduce the discharge of polluted sediments into local streams, prevent hillside erosion, manage local street flooding, and obtain City subsidies for street drainage and stormwater improvements. The property owners gain a local green street with improved street access, sidewalks and street lighting, as well as local green amenities. One recent local improvement project, SW Texas Street, eliminated a major source of sediment and untreated runoff at the headwaters of a local stream and added a wetland park to serve as a local gathering area for the abutting neighborhood.

Watershed Stewardship Grants

- Grants up to \$5,000 to community groups
- Focused on community-initiated projects to improve watershed health
- Fosters community partnerships and provides technical assistance, financial support and training to volunteers
- Projects have included ecoroofs, parking lot swales, habitat restoration and downspout disconnections
- Between 1995 and 2005, the program awarded 108 grants, engaging more than 27,000 citizens who donated nearly 140,000 volunteer hours
- Nearly \$450,000 in City grants have attracted more than \$1.9 in matching funds



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Watershed Stewardship Grants

Portland's Watershed Stewardship Grant Program offers up to \$5,000 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. Between 1995 and 2005, the program awarded 108 grants, engaging more than 27,000 citizens who donated nearly 140,000 volunteer hours. Nearly \$450,000 in City grants have attracted more than \$1.9 in matching funds.

Stormwater Marketplace**Crucial Involvement****Market Needs****Participant Categories****Unifying Strategy****PORTLAND'S STORMWATER MARKETPLACE**

These early and ongoing community-based initiatives noted above have prepared the ground for more aggressive strategies to engage and animate a marketplace of local stormwater planners, designers, engineers, manufacturers, suppliers, installers, and financiers. Portland's stormwater marketplace initiative is based on the recognition that the beneficial practices of property owners and developers are crucial to reestablishing watershed health. It is also predicated on the awareness that property owners and developers will be more willing and able to invest in stormwater improvements if the obstacles and costs of action are reduced or eliminated.

To enable and promote the expansion of private sector efforts to restore watershed health, the City identified ways to provide incentives for the regulated business and development community as well as the property owning public in general.

ENABLING AND PROMOTING PRIVATE SOLUTIONS INCREASES THE NEED FOR:

- Effective performance-based regulatory guidance
- Streamlined and efficient design review and permitting
- Clear, complete and useful public information
- Technical and financial assistance
- Flexibility and choice with regard to on-site solutions
- Local private sources of stormwater technologies, products and services
- Information infrastructure to connect property owners to regulators and the green economy

Concerning stormwater marketplace participation, preliminary market research suggests that property owners fall into four general categories. Successful engagement strategies pay attention to this market segmentation, and tailor outreach and messaging to specific audiences. Additional research is underway to confirm these preliminary findings and further identify the demographic, social, economic, and location-specific characteristics of each market segment.

PRIVATE PARTICIPANT CATEGORIES INCLUDE:

- Ready – early adopters or those ready to act with or without City assistance.
- Willing – ready to act, convinced of the need to participate, but in need of additional information or technical assistance.
- Unsure – not very knowledgeable about stormwater issues, interested in joining a community movement, but concerned about impacts on their property or other real or perceived risks.
- Not Engaged – reclusive and not engaged in their neighborhood or community, and/or not accessible to traditional communications channels, including direct personal contacts.

Understanding the segmentation of the market outlined above is informing plans to how best to employ or develop the resources and strategies needed to facilitate the journey. Moving from education to actions can be very simple or nearly impossible depending on the readiness and receptivity of the property owner. For those who are ready to take action, the City's strategy may be as simple as staying out of the way and recognizing their leadership once the action is taken. For those who are willing, but stuck on a technical question or on-site challenge, the strategy might include a class or workshop or some technical assistance. For those who are unaware or unsure, the strategies might need to include a full range of outreach and marketing activities, learning opportunities, encouragement from social networks, assistance

Stormwater Marketplace

Participation Determinants

with design and permitting, and perhaps some financial assistance or incentives as well. For those who are not yet engaged, the City will seek to create opportunities for involvement, explore alternative – even non-traditional – channels of communication and look for an opening or teaching moment to come along.

Preliminary market research suggests that the degree of public engagement and assistance increases as the City focuses attention from one market segment to another. With each successive segment the need to reduce obstacles to action increases. Early successes with those who are most ready and willing can be used to ensure positive experiences for those who are less willing to take private actions to manage stormwater. Effective messaging and outreach will be informed by a deeper understanding of the demographic, social and economic characteristics of each market segment.

Preliminary research also suggests that age, income, and level of education play a role in the willingness of residential property owners to invest in private stormwater management facilities. Also, time constraints and competing financial demands are significant determinants according to interviews with City education, outreach, and technical assistance staff. The City's Bureau of Environmental Services is conducting market research to test and expand on these preliminary findings.

Creating a truly sustainable stormwater management program will require the City to move beyond public-private partnerships and demonstration grants. The City will need to animate social and economic forces to convert the community's deeply rooted environmental values into tangible actions and investments.

THE STEPS INCLUDE INFORMING THE PUBLIC AND BUSINESS COMMUNITY ABOUT:

Information & Outreach

- **STORMWATER ISSUES AND OPPORTUNITIES** through outreach, marketing, word-of-mouth, the actions of key influencers, and reliance on existing social and business networks
- **HOW TO BE A PART OF SUSTAINABLE SOLUTIONS** through workshops, classes, demonstrations, events, site assessments and technical assistance
- **HOW TO TAKE ACTION WITH THE ASSISTANCE OF A GREEN ECONOMY** composed of designers, installers, suppliers, financiers, investors, and stewards
- **SHARING AND CELEBRATING THE EXPERIENCE AND BENEFITS** of personal and community action through the use of recognition events, certificates of participation, signage, media coverage and the activation of social networks

Further Research

The City is conducting additional market research to confirm and refine our preliminary findings. By November 2008, Portland will complete focused property owner interviews and a broad-based market survey to measure the propensity of property owners to invest in private stormwater facilities. The research will also identify the motivations and obstacles that are most influential to stormwater investment decisions. The findings will guide future development of City programs, tools and incentives to animate private stormwater investments.

Early Action

Brooklyn Creek Basin – An Early Test of the Stormwater Marketplace

Portland's Brooklyn Creek Basin provides an immediate opportunity to test out Portland's stormwater marketplace. Brooklyn Creek, located on the east side of the Willamette River, is home to 20,000 Portlanders. Stretching from the slopes of Mt. Tabor on the east to the river on the west, the basin covers 1400 acres. Homes, businesses, schools, churches, community institutions, and the public streets shed stormwater runoff to an aging and inadequate system of combined sewers. Many areas within the basin experience basement and street flooding during storm events.

The City plans to employ an integrated mix of grey and green infrastructure to eliminate or significantly reduce sewer back-ups, replace fully depreciated sewer lines, and reduce combined sewer overflows (CSOs) into the Willamette River. The project implementation plan calls for significant private stormwater retrofits throughout the basin, with particular attention given to properties located at choke points in the combined sewer system. In addition to the private stormwater retrofits, the project will install 4,000 street trees, construct 500 green street facilities, improve community connections to the Willamette River, and remove invasive plants and restore native habitat in environmentally sensitive areas. The "greening" of the Brooklyn Creek Basin project is estimated to cost 40% less than a traditional grey approach, a "savings" for the utility and its ratepayers of more than \$58 million.

Project Components

Looking beyond Brooklyn Creek, preliminary findings of the Stormwater Marketplace Feasibility Study suggest that Portland can reduce the public and private costs of additional stormwater management in combined sewer basins by at least 8% over the next 30 years. The savings can be achieved by shifting a portion of the public improvements to green infrastructure and significantly increasing the amount of stormwater runoff managed on private property. The green stormwater facilities provide an added benefit of improved water quality, increased habitat, and a variety of additional ecosystem benefits.

Green Savings

Stormwater Marketplace

Online Tools

"ProjectDX"

ProjectDX Contact

Thomas Puttman,
971/ 409-9056
tom@projectdx.com

ProjectDX — Connecting Property Owners to the Marketplace:

INTERNET-BASED SERVICE TO LINKS PROPERTY OWNERS TO CITY

Portland is developing effective ways to increase private stormwater investments without the need for increased regulations. One promising approach is to use information technologies, the Internet, social marketing strategies, and incentives to animate private action to control stormwater runoff. Information technologies and the Internet have obviously already proven their usefulness in creating new markets in other areas and efficiently connecting consumers to desired goods and services.

Portland is working with Transformative Sustainable Solutions, Inc. (TSSI) to employ these technologies in the service of the stormwater marketplace. The goal is to develop and deploy an Internet-based service to link property owners to City stormwater goals, techniques and standards, as well as a local green marketplace. "ProjectDX" is an online infrastructure decision support tool that is being designed to catalyze social action for environmental good. ProjectDX will provide powerful tools for setting goals, driving behavioral changes, evaluating progress, and lowering city infrastructure costs. ProjectDX will promote measurable change by showing users their current impact on the environment and allowing them to explore options for minimizing their impact while saving money and helping their community.

Portland will soon be demonstrating an Internet site — ProjectDX.com — by launching marketing, outreach and incentive campaigns linked to City watershed health and stormwater management goals and projects. [Editor's Note: this "work in progress" is currently viewable online at: www.projectdx.com/]

City of Portland

You are here: [Portland Home](#) > 97221 - Stormwater Management

Map views:



Please click on the water drops to see the list of stormwater solutions implemented on a property.

System:

Stormwater Management

Join your neighbors, local businesses and the City of Portland to restore and protect the health of local rivers, streams and watersheds.

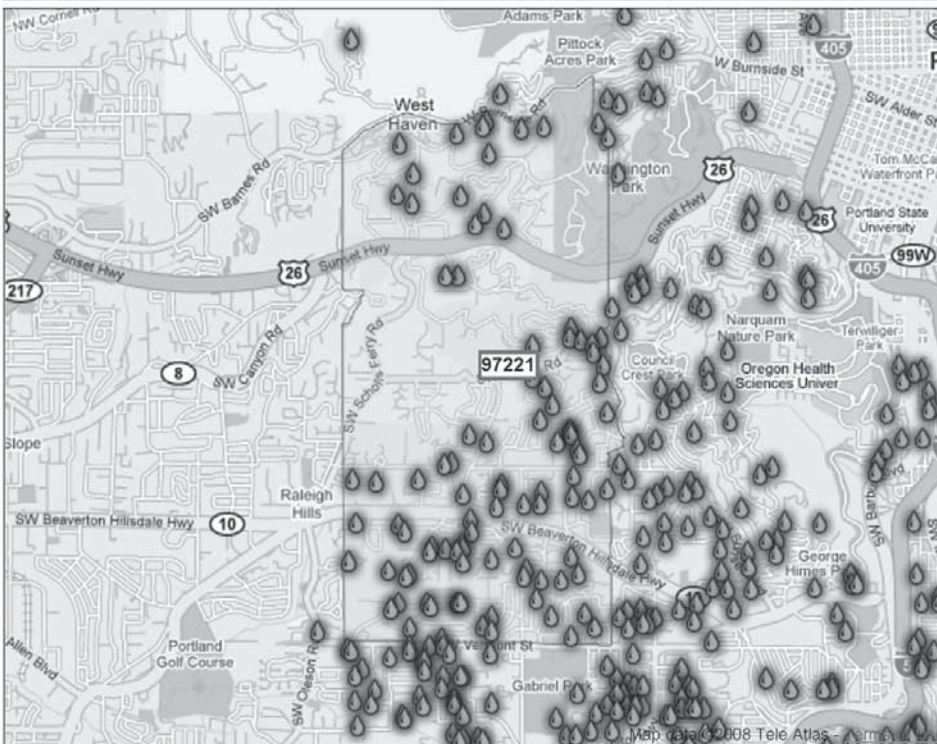
Become a stormwater pioneer by making simple changes to your property to manage stormwater runoff from your buildings and paved surfaces.

Your actions will complement major investments by the City of Portland to improve water and air quality, reduce global warming, increase habitat for endangered fish and wildlife, clean-up local rivers and streams, bring nature into your neighborhood, and enhance your quality of life.

And any investments you make can earn you Clean River Rewards that reduce your monthly stormwater utility charge.

City Goals

Quick Links



Check out your property!

Street:

Zip:



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Stormwater Marketplace

ProjectDX Components

Transformed Approach

Motivating Private Investment

Manifest Benefits

THE PROJECTDX PARTNERSHIP WILL FOCUS ON THE FOLLOWING CORE FUNCTIONS:

ProjectDX will expand and enhance existing online access to information about City goals, local public projects, stormwater management techniques and regulations, City incentives and assistance programs. The City will use ProjectDX to track property responses to outreach and marketing campaigns, and identify messages and marketing techniques that are most receptive to the various segments of the stormwater marketplace.

ProjectDX will provide online access to information about the supply side of Portland's marketplace, local stormwater vendors, suppliers and service providers. The City will use ProjectDX to: monitor the size of the marketplace; identify gaps between supply and demand; and plan recruitment, training and certification programs to increase the responsiveness and quality of business in the local green economy. Armed with detailed marketing information, the City can develop and fine-tune strategies to increase popular interest and investment in sustainable stormwater facilities. Particular attention will be given to the obstacles that limit private investments, and the mix of information, services and incentives that will dramatically increase stormwater retrofits on private property.

ProjectDX intends to transform the traditional approach of delivering municipal services and programs to the community. The boundaries of public and private action may begin to blur as shared facilities, partnerships, and private action complement and multiply direct municipal investments in stormwater facilities and services.

CONCLUSIONS

More than 30 years after the passage of the Clean Water Act, local communities are confronting clean water regulations to clean up and protect critical water resources, and manage the impacts of stormwater runoff. Stormwater management techniques have evolved in response to increasingly complex regulations and advancements in environmental sciences, engineering and technologies, and economics and systems planning. This evolution has produced 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, or close at hand in adjacent public rights-of-way.

Sustainable stormwater management principles shift the focus of municipal action from large, public systems on public lands to smaller natural systems on private property. Animating private stormwater investments requires much more than a reliance on local regulations, building standards, and the occasional public-private partnership. Municipalities must develop new skills in the use of information technologies, the Internet, market research, social marketing, and incentives.

Comprehensive stormwater management initiatives paint a big picture that links the behaviors and investments of individual property owners to the integrated health and wellbeing of watersheds. Information technologies connect individuals to community values, watershed goals, stormwater management technologies, and local markets of stormwater entrepreneurs. The resulting stormwater marketplace, animated by an alignment of social values and self interest, produces a self-perpetuating private system of change to complement public utility investments and regulation.

Portland's approach to stormwater management has evolved during the past 30 years, from grey to green and from public to private. While investments in traditional stormwater systems will continue to dominate utility capital budgets for decades to come, the conversion to green technologies and private initiatives is well underway. In the next five years, Portland will increase investments in green infrastructure by nearly four-fold. During the same period, Portland will multiply private stormwater investments through the integrated use of market forces, social networks and public incentives. The benefits will be manifest, in healthy rivers and streams, vibrant natural habitats, the return of endangered and threatened wildlife, reduced impacts on global warming, improved air quality, and an urban landscape that seamlessly integrates the built and natural environments.

FOR ADDITIONAL INFORMATION, CONTACT: DAN VIZZINI, City of Portland Bureau of Environmental Services, 503/ 823-4038 or email: danv@bes.ci.portland.or.us

Acknowledgement

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TRIBES & EFFLUENT SNOWMAKING CASE

RELIGIOUS CLAIMS REJECTED: "SUBSTANTIAL BURDEN" KEY REQUIREMENT

by David Moon, Editor

Tribal Claims

Tribal Setback

On August 8th, a full panel of the Ninth Circuit Court of Appeals (Court) ruled that the federal government's approved use of artificial snow made from recycled wastewater on government-owned park land does not violate the Religious Freedom Restoration Act (RFRA), the National Environmental Policy Act (NEPA), or the National Historic Preservation Act (NHPA). *Navajo Nation, et al. v. USFS, et al.* (Ninth Circuit, Case No. 06-15371), August 8, 2008. The decision, based largely on specific statutory language in RFRA and factual findings of the federal district court, is clearly a setback for Indian tribes asserting claims or trying to prevent government actions that impact tribal religious practices.

Background

The Snowbowl ski area (Snowbowl) is located on federally owned public land and operates under a special use permit issued by the US Forest Service (Forest Service). Snowbowl is located within the Coconino National Forest in Northern Arizona and is situated on Humphrey's Peak, the highest of the San Francisco Peaks (the Peaks). The Peaks cover about 74,000 acres, while Snowbowl sits on 777 acres. As noted by the Court, "[T]he Peaks have long-standing religious and cultural significance to Indian tribes. The tribes believe the Peaks are a living entity" and they "conduct religious ceremonies, such as the Navajo Blessingway Ceremony, on the Peaks." In addition, "the tribes also collect plants, water, and other materials from the Peaks for medicinal bundles and tribal healing ceremonies" and according to the tribes "the presence of the Snowbowl desecrates for them the spirituality of the Peaks." *Slip Op.* at 10043-44. Discussing the facts involved in the case, the Court noted that the "recycled wastewater to be used for snowmaking is classified as 'A+' by the Arizona Department of Environmental Quality ("ADEQ")... A+ recycled wastewater is the highest quality of recycled wastewater recognized by Arizona law and may be safely and beneficially used for many purposes, including irrigating school ground landscapes and food crops. See Ariz. Admin. Code R18-11-309 tbl. A. Further, the ADEQ has specifically approved the use of recycled wastewater for snowmaking." *Id.* at 10045.

Religious & Cultural Significance

Recycled Wastewater

Snowmaking

Under the Snowbowl proposal, up to 1.5 million gallons per day of treated sewage effluent would be sprayed on Humphrey's Peak from November through February. Over the course of a ski season, depending on weather conditions, more than 100 million gallons of effluent could be utilized to provide a more reliable and consistent operating season for Snowbowl.

Previous Rulings

Following an 11-day bench trial, the federal district court held that the proposed upgrades to Snowbowl, including the use of recycled wastewater to make artificial snow on the Peaks, did not violate RFRA. That ruling was based on the finding that the Plaintiffs failed to demonstrate that the Snowbowl upgrade "coerces them into violating their religious beliefs or penalizes their religious activity," as required to establish a "substantial burden" on the exercise of their religion under RFRA. In 2007, a three-judge panel of the Ninth Circuit reversed the district court in part, holding that the use of recycled wastewater on Snowbowl violates RFRA, and in one respect, that the Forest Service failed to comply with NEPA. See *Navajo Nation v. U.S. Forest Service*, 479 F.3d 1024, 1029 (Ninth Circuit 2007).

Ninth Circuit's Decision

Sacred Peaks

The August 8th decision by the Ninth Circuit did not turn on the validity of the tribes' assertion of their religious beliefs. As noted by the Court, "Plaintiff Indian tribes and their members consider the San Francisco Peaks in Northern Arizona to be sacred in their religion. They contend that the use of recycled wastewater to make artificial snow for skiing on the Snowbowl, a ski area that covers approximately one percent of the San Francisco Peaks, will spiritually contaminate the entire mountain and devalue their religious exercises. The district court found the Plaintiffs' beliefs to be sincere; there is no basis to challenge that finding." *Id.* at 10041. Despite that finding, the Ninth Circuit chose to scrutinize the tribes' "subjective spiritual experience" in light of factual findings concerning the physical impact of the planned use of the sewage effluent.

District Court Fact Findings

In its summary of the case at the beginning of the opinion, the Court pointed out that the "heart of their claim is the planned use of recycled wastewater, which contains 0.0001% human waste, to make artificial snow." *Id.* at 10040. In the first paragraph of the opinion itself, the Court stated that, "[T]he district court also found, however, that there are no plants, springs, natural resources, shrines with religious significance, or religious ceremonies that would be physically affected by the use of such artificial snow. No plants would be destroyed or stunted; no springs polluted; no places of worship made inaccessible,

**Tribal
Claims****“Spiritual
Experience”****“Substantial
Burden”****Property
Ownership****RFRA
Requirements****Definition
Precedent****No Coercion
or Penalty****Statutory
Term of Art**

or liturgy modified. The Plaintiffs continue to have virtually unlimited access to the mountain, including the ski area, for religious and cultural purposes. On the mountain, they continue to pray, conduct their religious ceremonies, and collect plants for religious use. Thus, the sole effect of the artificial snow is on the Plaintiffs’ subjective spiritual experience. That is, the presence of the artificial snow on the Peaks is offensive to the Plaintiffs’ feelings about their religion and will decrease the spiritual fulfillment Plaintiffs get from practicing their religion on the mountain.” *Id.* at 10041.

The Court decided that the impact on the plaintiffs’ “subjective spiritual experience” is not sufficient to constitute a violation of RFRA, given the specific language used by the US Congress in the Religious Freedom Restoration Act of 1993, 42 U.S.C. §§ 2000bb et seq. RFRA requires that there be a “substantial burden” on the free exercise of religion before the tribes would have a valid claim under RFRA. “Where, as here, there is no showing the government has coerced the Plaintiffs to act contrary to their religious beliefs under the threat of sanctions, or conditioned a governmental benefit upon conduct that would violate the Plaintiffs’ religious beliefs, there is no ‘substantial burden’ on the exercise of their religion.” *Id.* at 10042. The Court stated that it could not allow actions by the federal government to “be subject to the personalized oversight of millions of citizens” where every “citizen would hold an individual veto to prohibit the government action solely because it offends his religious beliefs, sensibilities, or tastes, or fails to satisfy his religious desires.” The fact that the action at issue was to take place on property owned by the Forest Service was also deemed important: “Further, giving one religious sect a veto over the use of public park land would deprive others of the right to use what is, by definition, land that belongs to everyone.”

The Court set out the requirement and exceptions for a RFRA claim (*Id.* at 10050): “To establish a prima facie RFRA claim, a plaintiff must present evidence sufficient to allow a trier of fact rationally to find the existence of two elements. First, the activities the plaintiff claims are burdened by the government action must be an ‘exercise of religion.’ See *Id.* § 2000bb-1(a). Second, the government action must ‘substantially burden’ the plaintiff’s exercise of religion. See *Id.* If the plaintiff cannot prove either element, his RFRA claim fails. Conversely, should the plaintiff establish a substantial burden on his exercise of religion, the burden of persuasion shifts to the government to prove that the challenged government action is in furtherance of a ‘compelling governmental interest’ and is implemented by ‘the least restrictive means.’ See *Id.* § 2000bb-1(b). If the government cannot so prove, the court must find a RFRA violation.”

Crux of the Case - “Substantial Burden”

The Court pointed out that the “crux of this case, then, is whether the use of recycled wastewater on the Snowbowl imposes a ‘substantial burden’ on the exercise of the Plaintiffs’ religion.” Since RFRA does not specifically define “substantial burden,” the Court turned to “the express language of RFRA and decades of Supreme Court precedent.” *Id.* at 10051. The Court focused on two Supreme Court cases, *Sherbert v. Verner*, 374 U.S. 398 (1963) and *Wisconsin v. Yoder*, 406 U.S. 205 (1972): “The Supreme Court’s decisions in *Sherbert* and *Yoder*, relied upon and incorporated by Congress into RFRA, lead to the following conclusion: Under RFRA, a ‘substantial burden’ is imposed only when individuals are forced to choose between following the tenets of their religion and receiving a governmental benefit (*Sherbert*) or coerced to act contrary to their religious beliefs by the threat of civil or criminal sanctions (*Yoder*). Any burden imposed on the exercise of religion short of that described by *Sherbert* and *Yoder* is not a ‘substantial burden’ within the meaning of RFRA, and does not require the application of the compelling interest test set forth in those two cases.” *Id.* at 10053.

Applying those precedents to the facts at issue, the Court found that “there is no ‘substantial burden’ on the Plaintiffs’ exercise of religion in this case. The use of recycled wastewater on a ski area that covers one percent of the Peaks does not force the Plaintiffs to choose between following the tenets of their religion and receiving a governmental benefit, as in *Sherbert*. The use of recycled wastewater to make artificial snow also does not coerce the Plaintiffs to act contrary to their religion under the threat of civil or criminal sanctions, as in *Yoder*. The Plaintiffs are not fined or penalized in any way for practicing their religion on the Peaks or on the Snowbowl. Quite the contrary: the Forest Service ‘has guaranteed that religious practitioners would still have access to the Snowbowl’ and the rest of the Peaks for religious purposes. *Navajo Nation*, 408 F. Supp. 2d at 905.” *Id.* at 10053-54.

The Court summed up its decision by explaining, again, its reliance on the statutory standard of “substantial burden” and Supreme Court precedent. “The only effect of the proposed upgrades is on the Plaintiffs’ subjective, emotional religious experience. That is, the presence of recycled wastewater on the Peaks is offensive to the Plaintiffs’ religious sensibilities. To plaintiffs, it will spiritually desecrate a sacred mountain and will decrease the spiritual fulfillment they get from practicing their religion on the mountain. Nevertheless, under Supreme Court precedent, the diminishment of spiritual fulfillment — serious though it may be — is not a ‘substantial burden’ on the free exercise of religion.” *Id.* at 10054.

**Tribal
Claims****Interpretation
of
Standard**

One of the arguments raised by the dissent was that because Congress did not define the term “substantial burden” in RFRA, the Court should look to its ordinary meaning for a definition. The majority opinion rejected that assertion, however, based on the fact that “Congress expressly referred to and restored a body of Supreme Court case law that defines what constitutes a substantial burden on the exercise of religion (i.e., *Sherbert*, *Yoder*, and other pre-*Smith* cases). See 42 U.S.C. §§ 2000bb(a)(4)-(5); 2000bb(b)(1). Thus, we must look to those cases in interpreting the meaning of ‘substantial burden.’ Further, the dissent’s approach overlooks a well-established canon of statutory interpretation. Where a statute does not expressly define a term of settled meaning, ‘courts interpreting the statute must infer, unless the statute otherwise dictates, that Congress means to incorporate the established meaning of th[at] ter[m].’ See *NLRB v. Town & Country Elec., Inc.*, 516 U.S. 85, 94 (1995)...” *Id.* at 10061-62.

NEPA Claim**Failure to
Raise Claim**

The Court also rejected a NEPA claim that one of the Plaintiffs, the Navajo Nation, attempted to raise. They asserted that the Final Environmental Impact Statement (FEIS) failed to adequately consider the risks poised by human ingestion of artificial snow. The decision turned on a procedural issue — the failure to include the claim, or the factual allegations upon which the claim rests, in the Navajo Plaintiffs’ Complaint. “Because the Navajo Plaintiffs failed sufficiently to present this NEPA claim to the district court and also failed to appeal the district court’s denial of their motion to amend the complaint to add this NEPA claim, the claim is waived on appeal. See *O’Guinn v. Lovelock Corr. Ctr.*, 502 F.3d 1056, 1063 n.3 (9th Cir. 2007).” *Id.* at 10071-72.

Dissenting Opinion**Dissent**

A lengthy and strenuous dissenting opinion was filed in the case by three justices (6-3 decision), which included a significant discussion regarding the various tribes’ religious beliefs (Hopi, Navajo, Hualapai, and Havasupai). The dissent stated that its holding would be that the Plaintiffs had proved violations of both RFRA and NEPA.

**Forest Service
Actions**

Since the majority of the Court held that there was no “substantial burden” on the free exercise of religion, it decided there was no need to examine the issue of whether or not the challenged government action is in furtherance of a “compelling governmental interest” and is implemented by “the least restrictive means” (see above). The dissent, however, discussed this issue in detail due to their belief that a “substantial burden” under RFRA was established. The dissent focused on the Forest Service’s interest in managing the forest for multiple uses and concluded that “[R]efusing to allow a commercial ski resort in a national forest to spray treated sewage effluent on Indians’ most sacred mountain is an accommodation that falls far short of the sort of advancement of religion that gives rise to an Establishment Clause violation.” *Id.* at 10126.

**Ownership
History**

The dissent argued forcefully against the majority opinion and noted its conclusion that the decision would be devastating for the tribes’ religious beliefs and practices. “The San Francisco Peaks have been at the center of religious beliefs and practices of Indian tribes of the Southwest since time out of mind. Humphrey’s Peak, the holiest of the San Francisco Peaks, will from this time forward be desecrated and spiritually impure. In part, the majority justifies its holding on the ground that what it calls ‘public park land’ is land that ‘belongs to everyone.’ Maj. op. at 10042. There is a tragic irony in this justification. The United States government took this land from the Indians by force. The majority now uses that forcible deprivation as a justification for spraying treated sewage effluent on the holiest of the Indians’ holy mountains, and for refusing to recognize that this action constitutes a substantial burden on the Indians’ exercise of their religion. RFRA was passed to protect the exercise of all religions, including the religions of American Indians. If Indians’ land-based exercise of religion is not protected by RFRA in this case, I cannot imagine a case in which it will be. I am truly sorry that the majority has effectively read American Indians out of RFRA.” *Id.* at 10137.

Conclusion

The case may not be over yet. A press release from the Save the Peaks Coalition quoted representatives from some of the plaintiffs stating that they will appeal the decision.

FOR ADDITIONAL INFORMATION: JENEDA BENALLY, Save the Peaks Coalition, email: coalition@savethepeaks.org or website: www.savethepeaks.org; Copy of the decision is available on the website

David Moon practiced water law in Eugene, Oregon with the Moon Firm until recently. He previously practiced in Bozeman, Montana with Moore, Refling, O’Connell & Moon. He is currently an editor of The Water Report and the Oregon Insider. Mr. Moon received his undergraduate degree at Colorado College and his JD at the University of Idaho Law School. He is a member of the Oregon, Idaho and Montana Bars. Mr. Moon practiced water law for over 28 years in Montana and Oregon.

WATER BRIEFS

TRIBAL SETTLEMENT BILL CA
GROUNDWATER BASIN RECHARGE

On July 31, President Bush signed the Soboba Band of Luiseno Indians Settlement Act of 2007 (Public Law 110-297) into law. The bill resolves 75 years of litigation over various water disputes and brings a long-awaited solution for the Soboba Band of Luiseno Indians (Soboba), the City of Hemet, the City of San Jacinto, Metropolitan Water District of Southern California (MWD), Lake Hemet Water District and Eastern Municipal Water District. The law strengthens regional efforts to achieve sustainable water management and habitat restoration in the over-drafted San Jacinto River Basin.

MWD constructed the San Jacinto Tunnel in 1932 to deliver water from the Colorado River to parts of Southern California. The Soboba maintained that leakage into the Tunnel drained groundwater from the wells on the tribe's reservation.

Under the settlement, MWD will deliver 7,500 acre-feet (AF) of water a year for the next 30 years to the Eastern Water District and Lake Hemet Water District. This will enable those water agencies to recharge the San Jacinto groundwater basin to help fulfill the Soboba's water rights and terminate chronic groundwater overdrafts. The plan is designed to eventually put pumping from the basin on a safe-yield basis, where no more water is taken out of the aquifer than is restored through natural and artificial recharge. The settlement provisions for recharge and restoration of the San Jacinto Basin aquifer also restore local groundwater for the non-Indian community and enable the development of several communities and thousands of acres of residential and commercial land.

Under the Act, the Soboba will receive water for an adequate and secure future water supply (9,000 AF per year) for the 6,000-acre reservation; \$18 million from the water districts for economic development; \$11 million from the federal government for water development; and 128 acres of land near Diamond Valley Lake for commercial development. The Soboba's neighbors, including the water districts, will receive

final resolution of the tribe's water rights and damage claims by terminating a pending lawsuit; 7,500 AF of new imported water until at least 2035; \$10 million in federal funds to help recharge the aquifer with the imported water; up to 100 acres of Soboba reservation land for endangered species habitat; and up to 4,900 AF of Soboba water for 50 years for basin restoration.

At the signing ceremony on August 15, Secretary of the Interior Kempthorne said that a "tipping point" in this settlement was the Soboba's decision to forbear use of some of its water rights for 50 years. "By agreeing to gradually phase in increased water use over the next half century, the Soboba have provided the Eastern Municipal Water District and the Lake Hemet Municipal Water District the time to develop and implement a groundwater management plan to cure the current overdraft in the San Jacinto Basin." The Soboba's forbearance has a monetary value of more than \$58 million, which helped to make the value of the non-federal contribution to this settlement more than \$80 million, Kempthorne pointed out. "That's about four times the federal cost share of \$21 million. This contribution, combined with the federal financial support, was key to convincing the three water districts to agree to their significant contributions."

For info: Robert Laidlaw, Interior, 916/978-4643; Congresswoman Bono Mack's website: bono.house.gov

TRUCKEE AGREEMENT CA/NV
OPERATING AGREEMENT SIGNED

On September 6, Secretary of the Interior Dirk Kempthorne joined US Senator and Majority Leader Harry Reid; Chairman Mervin Wright, Jr. of the Pyramid Lake Paiute Tribe of Indians; Allen Biaggi of the Nevada Department of Conservation and Natural Resources; and Chairman Mike Carrigan of the Truckee Meadows Water Authority, among other federal, state and local dignitaries at a signing ceremony for the Truckee River Operating Agreement (TROA). The agreement is the fulfillment of the

requirements of the 1990 Settlement Act for the Pyramid Lake Paiute Tribe, sponsored by Senator Reid, which directed the Secretary of the Interior to negotiate an operating agreement for the major federal and private reservoirs on the Truckee River upstream of Reno.

The Truckee River is the primary source of water for the Pyramid Lake Indian Reservation and for the growing communities of Reno and Sparks, Nevada. TROA is vitally important for the Truckee River watershed, which affects northern Nevada and California, and is the result of collaboration among five main parties: the US, the State of California, the State of Nevada, the Pyramid Lake Paiute Tribe, and the local water purveyor, Truckee Meadows Water Authority (TMWA). The TROA removes no water rights and benefits all users by ensuring efficient coordination of the operation of the reservoirs for the purposes of storage, release, and exchange of water. All unappropriated water goes to the tribe — hundreds of thousands of acre feet per year, depending on snow pack. The agreement also provides storage space in the reservoirs to increase municipal drought supplies for Reno and Sparks, benefits instream flows for fishery and water quality purposes in California and Nevada, and enhances reservoir levels for recreation use.

TROA divides the waters between Nevada and California and also prevents future litigation regarding allocations; enhances conditions for threatened and endangered fish throughout the Truckee River basin; and increases drought protection for TMWA.

For info: Shane Wolfe, Interior, 202/208-6416 or TROA website: www.usbr.gov/mp/troa/

STORMWATER DECREE NV
\$1 MILLION CIVIL FINE FOR LANDFILL

Republic Services of Southern Nevada (RSSN), the current operator of the Sunrise Mountain Landfill located in Clark County, Nevada, has agreed to construct and operate a comprehensive remedy for the site and to pay a \$1 million civil fine in order

WATER BRIEFS

to resolve alleged violations of the Clean Water Act, the US Department of Justice (DOJ) and US EPA announced on August 7. The consent decree, filed in US District Court in Las Vegas, requires RSSN to implement extensive stormwater controls, an armored engineered cover, methane gas collection, groundwater monitoring, and long-term operation and maintenance.

Sunrise Landfill, a 440-acre closed municipal solid waste landfill, is located three miles outside of Las Vegas city limits. The landfill cover failed during a series of storms in September 1998, sending waste into the Las Vegas Wash. The landfill is located two miles above the Las Vegas Wash, which discharges directly into Lake Mead — a primary drinking water resource for southern Nevada, including the Las Vegas metro area, as well as the lower Colorado River, the Phoenix metro area and southern California. The landfill was operated on behalf of the County by entities related to RSSN from the 1950's through 1993. Following the landfill cover failure in 1998, EPA ordered Republic Dumpco, a company related to RSSN, and the Clark County Public Works Department to correct violations of the federal clean water laws and to immediately stabilize the site. Sunrise Mountain Landfill is unlined and contains more than 49-million cubic yards of waste including: municipal solid waste; medical waste; sewage sludge; hydrocarbon-contaminated soils; asbestos; and construction waste.

EPA's press release stated that the remedy, which is expected to take roughly two years to build, will be designed to withstand a 200-year storm and is expected to cost over \$36 million. Upon completion, the remedy is estimated to prevent the release of over 14 million pounds of contaminants annually, including stormwater pollutants, methane gas and landfill leachate. The proposed consent decree is subject to a 30-day public comment period and approval by the federal court. The consent decree is available on the website listed below.

For info: EPA, 415/ 203-2011; DOJ, 202/ 514-2007; DOJ website: www.usdoj.gov/enrd/open.html

WHEEL WEIGHTS & WATER CA

CA LEAD WEIGHTS PHASE-OUT

In August, Chrysler and three lead wheel weight makers agreed to a phase-out of these products in California in a settlement of a suit brought by the Oakland-based Center for Environmental Health (CEH), which argued that the car parts threaten drinking water. The California lawsuit was filed under California's Proposition 65 (the Safe Drinking Water and Toxic Enforcement Act).

The legal agreement with Chrysler and the three largest producers of automobile wheel balancing weights requires the companies to end the use of leaded wheel weights in California by the end of 2009. CEH states that settlement will end the annual release of 500,000 pounds of lead into the environment in California, which occurs when wheel weights break off of automobile wheels.

CEH launched its legal action against Chrysler, Perfect Equipment, Inc., Hennessey Industries, and Plombco Inc., due to the threat to the state's drinking water from wheel weights that fall from cars and trucks. While the companies maintain that wheel weights do not pose an environmental threat, they have agreed to phase-out their use of lead and are all now producing lead-free products as an environmentally safe alternative.

According to the US Geological Survey (USGS), about 65,000 tons of lead wheel weights are in use on cars and trucks in the US, and it is estimated that at least 3% of wheel weights fall off of cars and trucks. USGS states that the discarded wheel weights "drop to the road surface where they become abraded by vehicle traffic, eventually becoming dissipated into the environment by wind and storm water." A peer-reviewed USGS study in 2000 found that lead pollution from wheel weights "is continuous, significant, and widespread, and is potentially a major source of human lead exposure."

In 2005, the Michigan-based group "The Ecology Center" petitioned EPA under the federal Toxic Substance Control Act (TSCA), calling for a federal ban on lead wheel weights (see

website: www.leadfreewheels.org). EPA refused to enact a ban, instead relying on voluntary industry action. Lead wheel weights have been banned in the European Union since July 2005, and Japan and Korea are phasing them out.

Washington, Maine and Massachusetts have considered legislation banning the weights, but the CEH settlement creates the first binding statewide ban on shipments from the major wheel weight suppliers. Some municipalities have eliminated lead wheel weights on their local fleets, and the US Air Force and Postal Service have taken action to eliminate lead wheel weights from their fleets.

Under today's agreement, Plombco will end shipments of leaded wheel weights into California by the end of this year; Hennessey and Perfect Equipment agreed to end shipments by the end of 2009. Chrysler is now quickly phasing out the use of lead wheel weights nation-wide, due in part to CEH's action. Also under the agreement, Chrysler is required to eliminate its use of leaded wheel weights on 55% of its automobiles by the end of July 2008, and the company says it has already exceeded that goal. The settlement requires Chrysler to fully eliminate lead in wheel weights on cars intended for sale in California by July 31, 2009.

For info: Center for Environmental Health website: www.cehca.org/

MINING PERMITS AZ

WATER QUALITY PROTECTION

In early September, Arizona Department of Environmental Quality (ADEQ) Director Steve Owens announced three draft permits for mining operations in Gila County which are intended to protect community underground water supply if issued.

The permits, known as Aquifer Protection Permits (APPs), are proposed for: the Freeport-McMoRan Miami, Inc. open-pit, porphyry-copper mining and smelting operation; the BHP Copper Miami Unit, a 700-acre site that produces refined copper from leaching operations; and the BHP Copper Cities Unit, which consists of two pits, two main leach dumps, waste rock piles, and a variety of impoundments and

WATER BRIEFS

structures used to transport and or impound mining-process water and stormwater.

The three APPs require operational monitoring at each site to ensure the facilities are inspected and maintained to meet Best Available Demonstrated Control Technology standards. Groundwater monitoring is required to ensure that aquifer water quality standards are met.

“These are strong water quality permits that will protect groundwater in the area, and will bring these historic mining operations into compliance with current regulations,” ADEQ Director Owens said. “Issuance of these permits will protect much-needed jobs in Gila County while also safeguarding precious water resources.”

Owens noted that ADEQ issued a similarly strong permit for BHP Copper’s Pinto Valley Mine in Miami last year.

The operations are located within the Pinal Creek Water Quality Assurance Revolving Fund (WQARF) site but the facilities are not part of WQARF cleanup operations. Cleanup activities for the affected areas will continue under the WQARF program. Close of Comment: October 9

For info: ADEQ Communications, 602/ 771-2215 or email: communications@azdeq.gov

NPDES FEES

US

EPA INCENTIVES PROGRAM

EPA is issuing a new rule that will provide financial incentives for states to use fees when administering a clean water permit program. EPA can give up to a total of \$5.1 million to states that have adequate permit fees for their National Pollutant Discharge Elimination System (NPDES) programs. As authorized by the federal Clean Water Act, the NPDES permit program controls water pollution by regulating municipal, industrial and related sources that discharge pollutants into waters of the United States

EPA’s new rule is designed to encourage states to voluntarily

implement adequate fee programs and shift part of the financial burden to those who benefit from the permits. It will also allow states to move funds to other critical water quality program activities. The increased cost of administering water permit programs has already prompted some states to implement permit fee programs to cover some costs. A number of states, however, still operate with little or no reliance on permit fees.

The permit fee incentive will only be made available if federal funding for state water pollution control programs is more than the fiscal year 2008 level. Therefore, state grants will not decrease as a result of this rulemaking. The rule will be in effect for the fiscal year 2009 grant cycle and beyond.

For info: Enesta Jones, EPA, 202/ 564-4355 or email: jones.enesta@epa.gov
EPA website: www.epa.gov/owm/cwfinance/npdes-permit-fee.htm

SHOSHONE BANNOCKS

ID

CWA TAS APPROVAL

In early September, EPA announced the approval of Shoshone Bannock Tribes (Tribes) application for “Treatment-as-a-State” (TAS) status for the purpose of administering water quality standards under the federal Clean Water Act (CWA). The approval gives the Tribes greater authority and responsibility for protecting water quality on the Fort Hall Reservation in Idaho. The TAS approval covers all of the water bodies within the exterior boundaries of the Fort Hall Indian Reservation.

EPA’s action means that the Tribes can now develop their own water quality standards under the Clean Water Act. They also can issue water quality certifications for CWA National Pollutant Discharge Elimination System (NPDES) wastewater discharge permits and any other federal permit or license where there is a discharge to Reservation waters.

The Tribes have been working with EPA and the Idaho Department of Environmental Quality as the Tribes

develop their water quality standards. The standards will set goals for how clean the Reservation waters within the Fort Hall Indian Reservation should be.

The Tribes, IDEQ and EPA are also signing a Memorandum of Understanding (MOU) that establishes a process for the three governments to work together for any future revisions to the water quality standards.

For info: Rich McAllister, EPA Region 10, 206/ 553-8203 or email: mccallister.rich@epa.gov

ESA OFFSETS

US

USFWS CREDIT SYSTEM

The US Fish and Wildlife Service (USFWS) has developed the final guidance for an innovative new tool designed to help federal agencies conserve imperiled species on non-federal lands. The “Recovery Crediting System” is designed to give federal agencies greater flexibility to offset impacts to threatened and endangered species caused by their actions by undertaking conservation efforts on non-federal lands, with the requirement that there is a net benefit to recovery of the species impacted.

Under Section 7 of the federal Endangered Species Act (ESA), federal agencies are required to use their existing authorities to conserve threatened and endangered species and, in consultation with USFWS, ensure that their actions do not jeopardize listed species or destroy or adversely modify critical habitat. Section 7 applies to the management of federal lands as well as other federal actions that may affect listed species, such as federal approval of private activities through the issuance of permits and licenses.

Federal agencies will be able to use the Recovery Crediting System to create a “bank” of credits accrued through beneficial conservation actions undertaken on non-federal lands. A federal agency can develop and store these conservation credits for use at a later time to offset the impacts of its actions. Credits must be used to benefit the same species for which they were accrued. USFWS will review each

WATER BRIEFS

recovery crediting system to ensure the net benefits to recovery outweigh any potential impacts that could occur during project implementation. Each proposal will be evaluated on its own merit, and some activities related to particular listed species may not be appropriate for the new credit system.

The program is modeled on a pilot program developed at Fort Hood in Texas involving USFWS, the US Department of Defense, the Texas State Department of Agriculture and other agencies. Using the pilot recovery crediting system, the US Army has been able to fund habitat conservation and restoration projects with willing local landowners on more than seven thousand acres of private land surrounding the military base to benefit the endangered golden-cheeked warbler. The Fort Hood area is home to the largest known population of golden-cheeked warblers in its breeding range. The credits accrued through these conservation efforts undertaken off the base ensure that the Army can conduct mission-critical field training at Fort Hood while continuing to benefit the warbler in its home range. Fort Hood has also been able to build important partnerships through this pilot program that will continue to benefit the golden-cheeked warbler and other imperiled species.

A notice of the availability of the guidance was published in the Federal Register on July 31, 2008.

For info: Chris Tollefson, USFWS, 703/358 2222 or email: Chris_Tollefson@fws.gov
USFWS WEBSITE: www.fws.gov/endangered/policy/june.2008.html

WATER USE REPORT NM

A statewide report on water use in the State of New Mexico (NM) is now available from the Office of the State Engineer's Water Use and Conservation Bureau. The report — entitled "*New Mexico Water Use by Categories*" — is the latest water use inventory. The first inventory was prepared for water use in 1975 and additional inventories have been completed every five years since.

Data from this report will be used for regional water planning and to track changes in water use in various sectors over time.

REPORT HIGHLIGHTS INCLUDE:

- NM is one of the fastest growing western states
- Growth is expected to increase along with demand for water, especially in the Rio Grande Basin
- Water use in the commercial, industrial, and livestock categories has increased since 2000
- Water use in the mining, public supply, irrigated agriculture, and reservoir categories has decreased since 2000
- Water use in domestic and power categories are essentially unchanged

NM'S WATER USE BY CATEGORY INCLUDES:

- 77% irrigated agriculture
- 10% public supplies and domestic use
- 7% evaporation
- 6% livestock, commercial, industrial, mining, and power

For info: NM Water Use and Conservation Bureau, 505/ 827-4272

REPORT WEBSITE: www.ose.state.nm.us/PDF/Publications/Library/TechnicalReports/TechReport-052.pdf

STATE WQ STANDARDS KS**EPA APPROVAL**

In August, EPA approved the revised State of Kansas water quality standards which had been adopted by the state last May. The new standards designate more than 2,097 miles of Kansas waters for recreational and aquatic life uses.

Kansas submitted the water quality standards to EPA for review and approval on June 19, 2008. The new standards are part of the state's ongoing effort to assign appropriate designated uses to classified streams, lakes, and wetlands.

States are required to conduct a review of their water quality standards no less frequently than every three years and submit new or revised standards to EPA. These newly-adopted standards

will protect waters for their appropriate aquatic life and recreational uses.

The approved standards are now effective for implementation under the federal Clean Water Act.

For info: Kris Lancaster, EPA, 913/ 551-7557 or email: lancaster.kris@epa.gov

SELF DISCLOSURE POLICY US EPA "eDISCLOSURE" PILOT

EPA recently announced a pilot project that allows regulated facilities nationwide to self-disclose environmental violations in a secure environment on EPA's website under the agency's audit policy.

This electronic self-disclosure system — "eDisclosure" — should reduce transaction costs for companies by ensuring that each disclosure contains complete information.

Under the pilot, regulated facilities nationwide will be able to use eDisclosure to disclose violations of the Emergency Planning and Community Right-to-Know Act (for example, failure to submit toxic chemical release forms to EPA's Toxic Release Inventory). Regulated facilities located in Arkansas, Louisiana, New Mexico, Oklahoma and Texas will be able to disclose violations of all environmental laws. Based on the results of the pilot, EPA will consider expanding eDisclosure to other states in the near future.

EPA's audit policy provides incentives to companies that voluntarily discover, promptly disclose, and correct and prevent future environmental violations. EPA may reduce or waive penalties for violations if the facility meets the conditions of the policy. EPA will not waive or reduce penalties for repeat violations, or violations that resulted in serious actual harm.

Since 1995, more than 3,500 companies have disclosed and resolved violations at nearly 10,000 facilities under the audit policy.

For info: Dave Ryan, EPA, 202/ 564-4355 or email: Ryan.dave@epa.gov
EPA eDisclosure website: www.epa.gov/compliance/incentives/auditing/edisclosure.html

WATER BRIEFS

CAFO VIOLATIONS

TX

EPA ENFORCEMENT ACTIONS

EPA recently issued cease and desist administrative orders to two Concentrated Animal Feeding Operation (CAFO) in Texas for violations of the federal Clean Water Act. A non-permitted cattle feeding operation in Vernon and a non-permitted dairy operation in Archer County were both cited.

Vernon Feeders, the cattle feeding operation, is a non-permitted CAFO located in Vernon. The facility has been ordered to immediately stop all discharges of pollutants in stormwater runoff from its animal confinement areas to Paradise Creek. The cattle feeding operation has been given 45 days to provide to EPA documentation that it has adequate capacity to contain all waste and process-generated wastewater plus stormwater generated during a 25-year, 24-hour storm event. The facility has also been given 45 days to develop and implement a pollution prevention plan that includes procedures specifically designed to minimize the discharge of pollutants from its animal confinement areas.

In June 2008, EPA conducted an unannounced inspection of the facility. The inspection revealed that this facility is not properly designed, constructed, and operated to contain all waste and process-generated wastewater plus stormwater runoff. The inspection also revealed an unauthorized discharge to Paradise Creek, a tributary of the Pease River. Paradise Creek flows about half-a-mile before it discharges to Pease River, which eventually discharges to the Red River.

Based on these findings, the owner and operator of the cattle feeding operation has been ordered to immediately take action to bring the facility into compliance with the Clean Water Act.

The dairy operation, a non-permitted CAFO located west of Windthorst in Archer County, has also been ordered to immediately stop all discharges of pollutants from its lagoon to waters of the United States. The dairy has been given 45 days to provide to EPA documentation that the

facility has adequate lagoon capacity to contain all waste and process-generated wastewater plus stormwater runoff during a 25-year, 24-hour storm event. The facility has also been given 45 days to develop and implement a pollution prevention plan that will include procedures for the proper utilization of nutrients generated by the dairy, proper disposal of dead animals and the proper maintenance of records, especially records documenting wastewater levels in the lagoon to minimize lagoon overflows.

In April 2008, EPA inspected the facility and determined that it did not have CAFO permit coverage. The inspection also revealed an unauthorized discharge from the dairy that entered an unnamed creek that traveled about one mile before entering Little Onion Creek. Little Onion Creek flows about three miles before it enters Onion Creek, which discharges into the Little Wichita River. The Little Wichita River flows about seven-and-one-half miles before discharging into Lake Arrowhead.

Based on these findings, the owner and operator of the dairy has been ordered to immediately take action to bring the facility into compliance with the Clean Water Act.

For info: EPA Region 6 website: www.epa.gov/region6

FISH PASSAGE

OR

DESCHUTES RIVER DAM

The 250 mile Deschutes River basin drains much of Central Oregon east of the Cascades. The watershed was once home to sizable runs of spring and fall chinook, sockeye (now extinct), and steelhead. Runs of wild spring chinook, fall chinook, and steelhead still access portions of the Deschutes River and its tributaries. However, the completion of the Pelton Round Butte Hydroelectric Project in 1968 cut off the upper reaches of the Deschutes River and two major tributaries — the Metolius River and the Crooked River — to migrating salmon.

Fish passage was originally installed on the three-dam Pelton Round

Butte complex. However, outmigrating smolts were never able to locate the fish passage because of the way the three rivers met at Round Butte Dam. Colder water from the Metolius River from the east sunk below the water from the Deschutes and Crooked Rivers, which caused a reverse flow back up the Metolius that juvenile fish instinctively followed. Consequently the upstream and downstream fish passage facilities were scrapped and salmon mitigation for the obstructed rivers was moved to hatcheries below the first dam.

The Pelton Round Butte Hydroelectric Project is co-owned by the Confederated Tribes of Warm Springs (Tribes) and Portland General Electric (PGE). The Tribes currently own one third of the facility, with the option to buy up to 50.01% from PGE as early as 2029. The project consists of the Round Butte Dam, the furthest upstream dam and largest at 440 feet high, which can power 96,500 homes, followed by the Pelton Dam at 204 feet which can power 45,000 homes, and then a smaller Reregulating Dam.

The Tribes and PGE will be installing fish passage around the Pelton Round Butte Project as part of a recent relicensing agreement. PGE and the Tribes are about halfway through implementing the project to restore salmonid spawning habitat through a combination of a state-of-the-art \$108 million underwater tower that collects outmigrating smolts by altering currents, and a trap and haul program for fish collected at the underwater tower and for returning adults. The fish collector portion of the underwater tower will be able to draw in up to 6,000 cubic feet of water per second off the surface of the reservoir and through two V-shaped fish screens, presumably enough to attract outmigrating smolts. Significantly, the underwater tower will enable PGE and the Tribes to continue hydroelectric operations. When the project is complete, PGE plans to submit a request to the Oregon Public Utility Commission to recover project costs though a rate adjustment of 1 percent at most.

For info: PGE website: www.deschutespassage.com

September 16 OR

Climate Change: Water Resource Planning & Management Impacts & Responses, Portland. CH2M Hill Center, 2020 SW 4th Avenue. Sponsored by PNWS-AWWA Water Resources Committee. For info: Kimberly Swan, Clackamas River Water Providers, 503/ 723-3510 or email: kims@clackamasproviders.org

September 16-18 CA

Water: The New Gold Rush Conference, Santa Monica. RE: Rainwater Harvesting. For info: American Rainwater Catchment Systems Assn website: ARCSA.org

September 17

Wrangling Over Water Rights Seminar, Teleconference. For info: American Bar Association website: www.abanet.org/cle/calendar.html

September 17-20 AZ

16th Section Fall Meeting - ABA Section of Environment, Energy & Resources, Phoenix. For info: ABA Section on Environment, Energy & Resources, 312/988-5724 or website: www.abanet.org/environ/

September 17-20 OR

Managing Water in a Climate Changing World: Implications for Irrigation, Drainage & Flood Control, Portland. USCID Water Management Conference. For info: Larry Stephens, USCID, 303/ 628-5430, email: stephens@uscid.org or website: www.uscid.org/08gcc.html

September 18 WA

Hydrological Variability, Reservoir Storage & Water Supply Reliability - AWWA-WA Fall Dinner Meeting, Seattle. Pyramid Ale House. For info: AWWA-WA website: www.wa-awwa.org

September 18-19 CA

Conservation Easements Seminar, San Francisco. Grand Hyatt. For info: CLE International, 800/ 873-7130 or website: www.cle.com

September 18-19 TX

Texas Water Law Seminar, Austin. Omni Downtown. For info: CLE International, 800/ 873-7130 or website: www.cle.com

September 19 CA

California Environmental Quality Act Seminar, Santa Monica. DoubleTree Guest Suites. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

September 20-24 AZ

Changing Waterscapes & Water Ethics for the 21st Century: 2008 Annual Symposium, Flagstaff. High Country Conference Center (NAU). Sponsored by the American Institute of Professional Geologists & Arizona Hydrological Society. For info: AIPG website: www.aipg.org

September 21-22 MT

Public Land Law Conference, Missoula. University of Montana. Sponsored by Public Land & Resources Law Review & the Public Policy Research Institute. For info: PLRLR, 406/ 243-6568, email: plrlr@umontana.edu or website: www.umd.edu/publicland

September 21-24 Canada

GeoEdmonton '08 Conference, Edmonton. Westin Hotel. Joint Geotechnical & Groundwater Conference. For info: Conference website: www.geoedmonton08.ca

September 21-24 OH

Ground Water Protection Council Annual Forum, Cincinnati. Millennium Hotel. For info: GWPC website: www.gwpc.org

September 22 OR

2008 Northwest Stormwater Conference, Portland. World Trade Center. For info: Holly Duncan, Environmental Law Education Center, 503/ 282-5220, email: hduncan@elecenter.com or website: www.elecenter.com

September 22-23 FL

Aquifer Storage Recovery VIII, Orlando. Holiday Inn Select-Airport. For info: American Ground Water Trust website: www.agwt.org

September 22-23 CA

Energy in California Seminar, San Francisco. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

September 22-24 CA

Collaboration & Innovation to Achieve Water Quality Goals: 2008 CASQA 4th Annual Conference, Oakland. Marriott Center. California Stormwater Quality Assn. For info: CASQA, 650/ 366-1042, email: info@casqa.org or website: casqa.org

September 22-26 WA

Technology and Applications for Erosion Control and Fish Habitat Training, La Push. Quileute Ocean-Side Resort. RE: Tool for Restoring Fluvial Ecosystems & Solving Traditional River Management Problems. For info: Renata Sobol, NW Environmental Training Center, 206/ 762-1976 or website: www.nwetc.org or website: casqa.org

September 23 OR

Role of Biofuel Renewables in Combating Global Climate Change, Portland. Port of Portland Commission Room. For info: David Ashton, Port of Portland, 503/ 944-7090 or email: david.ashton@portofportland.com

September 23-24 ID

Groundwater Connection: Merging Policy, Issues & Science, Boise. DoubleTree Riverside. Sponsored by the Idaho Water Resources Research Institute. For info: Julie Scanlin, IWRRI, 208/ 332-4414, email: jscanlin@uidaho.edu or website: www.iwrri.uidaho.edu/default.aspx?pid=33437

September 24-26 CA

Climate Change Workshop, Irvine. Hilton Irvin/Orange Co. Airport Irvine. Sponsored by Western Governor's Assn, Western States Water Council & California Dept. of Water Resources. For info: Western Governor's website: www.westgov.org/

September 24-26 OR

Western Stewardship Summit, Sun River. For info: Sustainable Northwest website: www.sustainablenorthwest.org/wss

September 25 OR

Future of Oregon's Water Resources: Statewide Water Roundtable, Bend. OSU Cascades Campus. For info: Michael Campana, IWW, 541/ 737-2413, email: aquadoc@oregonstate.edu or website: http://water.oregonstate.edu/roundtables/

September 25-26 CO

9th Annual Sustainable Communities Symposium, Crested Butte. Focus on Sustainable Agriculture. For info: Chris Menges, HCCA, 970/ 349-7104, email: chris@hcconline.org or website: hcconline.org

September 25-26 FL

Florida Water Law Conference, Tampa. Marriott Westshore. For info: CLE International, 800/ 873-7130 or website: www.cle.com

September 25-26 CA

Groundwater: Challenges to Meeting Our Future Needs, Costa Mesa. Hilton Orange County. Sponsored by the Groundwater Resources Assn of California. For info: GRAC, 916/ 446-3626 or website: www.grac.org

September 25-26 MT

4th Annual Montana Agriculture Conference, Billings. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

September 26 CA

California Environmental Quality Act & National Environmental Policy Act Seminar, Santa Monica. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

September 30 OR

Future of Oregon's Water Resources: Statewide Water Roundtable, Newport. For info: Michael Campana, IWW, 541/ 737-2413, email: aquadoc@oregonstate.edu or website: http://water.oregonstate.edu/roundtables/

October 1 OR

GoGreen '08 Educational Conference, Portland. For info: Conference website: www.gogreenpdx.com

October 2-3 OR

Pacific Salmonid Spawning Habitat Restoration Course, Portland. Audubon Society of Portland. Sponsored by Northwest Environmental Training Center. For info: NWETC website: www.nwetc.org

October 2-3 CO

Remediation of Abandoned Mine Lands: National Groundwater Assn Conference, Denver. Co-Sponsored by US EPA. For info: NGWA, 800/ 551-7379, email: customerservice@ngwa.org or website: ngwa.org/development/conferences.aspx

October 3 WA

Shoreline Permitting Seminar, Seattle. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

October 3-5 OR

Salmon in the City: Spawning Solutions Through Creative Ideas, Portland. Mt. Hood Community College. RE: 2008 Salmon & Trout Enhancement Program Conference. For info: Tom Friesen, ODFW, 503/ 947-6232 or website: dfw.state.or.us

October 5-9 TX

2008 Joint Annual Meeting: Celebrating the International Year of Planet Earth, Houston. George R. Brown Convention Center. Sponsored by Geological Society of America & Others. For info: Conference website: www.acsmeetings.org/

October 7 OR

Future of Oregon's Water Resources: Statewide Water Roundtable, Ontario. For info: Michael Campana, IWW, 541/ 737-2413, email: aquadoc@oregonstate.edu or website: http://water.oregonstate.edu/roundtables/

October 7 ID

Palouse Basin Water Summit, Moscow. Sponsored by the Idaho Water Resources Research Institute. For info: Julie Scanlin, IWRRI, 208/ 332-4414, email: jscanlin@uidaho.edu or website: www.iwrri.uidaho.edu/default.aspx?pid=33437

October 7 WA

Hanford State of the Site Meeting, Tri-Cities. Hosted by Tri-Party Agreement (TPA) Agencies. For info: Madeleine C. Brown, Washington Ecology, 509/ 732-7936 or email: mabr461@ecy.wa.gov

October 7-9 TX

Interdisciplinary Solutions to Instream Flow Problems Seminar, San Antonio. El Tropicano Riverwalk Hotel. For info: Kathleen Williams, Instream Flow Council, 406/ 586-6879 or website: www.instreamflowcouncil.org

October 8-10 NV

WaterSmart Innovations Conference & Expo, Las Vegas. South Point Hotel & Casino. Sponsored by Southern Nevada Water Authority and US EPA's WaterSense Program. For info: WSI, 702/ 731-3580 or website: www.watersmartinnovations.com/

October 8-11 CO

Governor's Conference on Managing Drought & Climate Risk, Denver. Grand Hyatt. For info: Conference website: http://cwcb.state.co.us/

October 9 WA

Hanford State of the Site Meeting, Seattle. Hosted by Tri-Party Agreement (TPA) Agencies. For info: Madeleine C. Brown, Washington Ecology, 509/ 732-7936 or email: mabr461@ecy.wa.gov

October 9-10 MT

8th Annual Montana Water Law Conference, Helena. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

(continued from previous page)

October 10 **OR**
Energy Law & Policy for a New Era Symposium, Eugene. U of Oregon, Sponsored by the Journal of Environmental Law & Litigation. For info: Kelly Fahl, JELL, email: kfahl@uoregon.edu or website: www.law.uoregon.edu/org/jell/

October 13-14 **OR**
International Conference on Nonrenewable Ground Water Resources Sociotechnological Aspects, Portland. Sponsored by National Ground Water Assn, Institute for Water & Watersheds, The World Bank & UNESCO. For info: NGWA, 800/ 551-7379, email: customerservice@ngwa.org, or website: www.ngwa.org

October 13-14 **OR**
Assessing the Response of Streams to Contemporary Forest Practices: Conference on Paired Watershed Studies, Corvallis. CH2M Hill Center, OSU. Sponsored by the Watersheds Research Cooperative. For info: OSU Conferences, 800/ 678-6311 or website: oregonstate.edu/conferences

October 14 **OR**
Future of Oregon's Water Resources: Statewide Water Roundtable, Medford. For info: Michael Campana, IWW, 541/ 737-2413, email: aquadoc@oregonstate.edu or website: http://water.oregonstate.edu/roundtables/

October 14-16 **GA**
Southeast Stormwater Institute, Savannah. Coastal Georgia Center. For info: Anne Kitchell, Center for Watershed Protection, 843/ 379-1177, email: ack@cwpp.org or website: cwpp.org

October 14-16 **Italy**
"The Role of Hydrology in Water Resources Management" Symposium, Island of Capri (near Naples). For info: Sabina Perfido, email: sabina.perfido@iamc.cnr.it or Symposium website: www.cig.ensmp.fr/~iahs/

October 14-17 **WA**
American Public Works Assn (APWA) Washington Chapter Fall Conference, Walla Walla. Whitman Hotel Conference Center. RE: Practical Innovation in the Field of Public Works. For info: Mike Terrell, 206/ 684-3078 or email: michael.terrell@seattle.gov

October 15-17 **OK**
158th Council Meeting - Western States Water Council, Oklahoma City. Skirvin Hilton. For info: Cheryl Redding, WSWC, 801/ 561-5300, email: credding@wsWC.state.ut.us or website: www.westgov.org/wswc/

October 15-17 **CA**
2008 Water Quality & Regulatory Conference, Ontario. DoubleTree Hotel. For info: Jo McAndrews, McAndrews & Boyd, 951/ 787-9287, email: sayhijo@empirenet.com or website: www.eastvalley.org

October 16-17 **UT**
Utah Water Law SuperConference, Salt Lake City. Marriott Hotel. For info: CLE International, 800/ 873-7130 or website: www.cle.com

October 17 **OR**
Sediment Remediation Seminar, Portland. For info: Holly Duncan, Environmental Law Education Center, 503/ 282-5220, email: hduncan@elecenter.com or website: www.elecenter.com

October 19-22 **TX**
American Institute of Hydrology Annual Meeting & International Conference, Houston. RE: Hydrologic Extremes & Global Climate Change. For info: AIH, 770/ 384-1634, email: aihydro@aol.com, or website: www.aihydro.org

October 20-21 **WS**
Construction Dewatering & Groundwater Design & Modeling Course, Milwaukee. For info: NGWA, 800/ 551-7379, email: customerservice@ngwa.org, or website: www.ngwa.org

October 20-22 **NM**
Surface Water Opportunities in New Mexico, Albuquerque. Embassy Suites. Sponsored by the Water Resources Research Institute (NMSU). For info: WRRRI website: http://wrrri.nmsu.edu/

October 20-24 **AZ**
"Creating A Bright Future:" Interstate Technology & Regulatory Council Event, Phoenix. For info: ITRC website: www.itrcweb.org/2008FallMeeting

October 21 **OR**
Future of Oregon's Water Resources: Statewide Water Roundtable, Salem. For info: Michael Campana, IWW, 541/ 737-2413, email: aquadoc@oregonstate.edu or website: http://water.oregonstate.edu/roundtables/

October 21 **OR**
Hanford State of the Site Meeting, Hood River. Hosted by Tri-Party Agreement (TPA) Agencies. RE: Groundwater Shoreline Cleanup, Waste Treatment Plan for Underground Tank Waste & Other Cleanup Issues. For info: Madeleine C. Brown, Washington Ecology, 509/ 732-7936 or email: mabr461@ecy.wa.gov

October 21-22 **WA**
Brownfields & Land Revitalization Conference 2008, Tacoma. Great Tacoma Convention & Trade Center. Presented by Washington Dept. of Ecology, Northwest Environmental Business Council & National Brownfield Assn. For info: Sue Moir, NEBC, sue@nebc.org or website: www.nebc.org

October 22 **OR**
Hanford State of the Site Meeting, Portland. Hosted by Tri-Party Agreement (TPA) Agencies. For info: Madeleine C. Brown, Washington Ecology, 509/ 732-7936 or email: mabr461@ecy.wa.gov

October 22-24 **CA**
Region 9 Annual Tribal Conference, San Francisco. Sponsored by the Pyramid Lake Paiute Tribe. For info: Greg Phillips, EPA, 775/ 885-6085 or email: Phillips.greg@epa.gov

October 22-24 **CA**
2008 CALFED Science Conference, Sacramento. RE: Restoration, Levees, Water Quality & Supply. For info: Mary Tappel, SWRCB, 916/ 341-5491, email: mtappel@waterboards.ca.gov or Conference website: www.science.calwater.ca.gov/conferences/

October 23 **WA**
Changes Affecting Hydropower Projects Seminar, Seattle. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

October 23 **WA**
Present & Future of Water Storage in Washington (2008 State Conf. of AWRA-WA), Seattle. For info: Jamie Morin, Mentor Law, 206/ 838-7654, email: morin@mentorlaw.com or AWRA website: www.wa-awra.org

October 25 **OR**
WaterWatch of Oregon's 2008 Dinner & Auction, Portland. Ambridge Event Center. For info: WaterWatch website: www.waterwatch.org

October 27 **WA**
Wetlands Seminar, Seattle. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

October 27-28 **GA**
Southeast Water Law Conference, Atlanta. For info: CLE International, 800/ 873-7130 or website: www.cle.com

October 28-30 **CA**
Interstate Council on Water Policy Annual Meeting, Sacramento. Embassy Suites Riverfront Promenade. RE: Quality/ Quantity in Water Planning, Climate Change, Infrastructure Needs & Sustainable Decisions. For info: ICWP website: www.icwp.org/cms/



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