



The Water Report™

Water Rights, Water Quality & Water Solutions in the West

In This Issue:

California Water Bond	1
Stormwater Innovations	10
Montana Adjudication	17
Tribal Groundwater Rights Decision	24
Water Briefs	26
Calendar	30

Upcoming Stories:

**Yakima Basin
Water Plan**

**California
Groundwater Law**

& More!

THE MAKING OF CALIFORNIA'S WATER BOND

by Assemblymember Anthony Rendon and Alf W. Brandt (Sacramento, CA)

INTRODUCTION

The author of California's 2014 Water Bond, Assemblymember Anthony Rendon, and his staff attorney, Alf W. Brandt, share what they experienced and learned from the most transparent water bond development process in the history of California. The article examines the many competing needs for water infrastructure funding, and the underlying policy debates about managing California's most valuable shared natural resource — water.

HISTORIC TRANSPARENCY

In 2014, California voters approved — with a 2/3 majority — a \$7.5 billion general obligation bond to finance water infrastructure. That overwhelming approval surprised some, in light of public polling earlier in the year showing weak support for a water bond. Some attribute the broad support to California's enduring drought, now in its fourth year. Others point to the unified, bi-partisan support of the Legislature and the Governor. Still others suggest that, without any funded opposition, no other result was possible. The 2014 water bond's success could be attributed to all these factors, but one critical factor should not be missed — the transparent statewide debate that led to the Legislature's approval and the Governor's signature, to place the water bond on the ballot.

The transparent legislative process to develop and pass the water bond demonstrated a new way for the Legislature to gain the trust of the voters. The Legislature had never before engaged in such a transparent process to develop a water bond. It held 18 public hearings, with the Assembly Water, Parks, and Wildlife Committee holding nine field hearings, from Indio to Eureka. Each house had two floor debates, one on a water bond that ultimately failed and one on the bond that passed. Legislative committees completed more than 20 bill analyses, 13 background papers, and several summaries of countless stakeholder comments on the water bond. Legislators discussed water bonds in numerous town halls and conferences. The Legislature did much of this work before the June 2014 deadline to place a new water bond on the November ballot, which passed without a new water bond. While the final \$7.5 billion water bond came out of private negotiations between the Governor and legislative leaders, and passed with near unanimity with only brief floor debate, its success could not have been achieved without all the public process leading up to its passage.

BACKROOM WATER BONDS

California has a long history of relying on general obligation bond debt to finance water infrastructure. Governor Pat Brown convinced voters, in 1960, to approve a \$1.75 billion water bond to build the State Water Project (SWP), which takes Northern California water to the San Francisco Bay Area cities, Central Valley farms, and Southern California communities, all the way to the Mexican border. The 1960 voter decision involved a

California Water Bond

“Pork”



The Water Report

(ISSN 1946-116X)

is published monthly by
Envirotech Publications, Inc.
260 North Polk Street,
Eugene, OR 97402

Editors: David Light
David Moon

Phone: 541/ 343-8504

Cellular: 541/ 517-5608

Fax: 541/ 683-8279

email:

thewaterreport@yahoo.com

website:

www.TheWaterReport.com

Subscription Rates:

\$299 per year

Multiple subscription rates
available.

Postmaster: Please send
address corrections to
The Water Report,
260 North Polk Street,
Eugene, OR 97402

Copyright© 2015 Envirotech
Publications, Incorporated

General Obligation (GO) bond, albeit subject to repayment by the water users who received SWP water. (A GO bond is backed by the credit and “taxing power” of the issuing jurisdiction rather than the revenue from a given project.) Between 1996 and 2006, voters approved five GO bonds connected to water, totaling \$15.88 billion in water and related natural resource investments. In 2009, the Legislature placed a water bond for \$11.14 billion on the 2010 ballot, but the election was postponed twice based on concerns of weak voter support. If the Legislature had not approved the new \$7.5 billion bond, that larger 2009 water bond would have appeared on the November ballot, with opposition from the Governor and others.

By 2013, when the water bond development process started, the 2009 water bond had received substantial criticism, for its size and its “pork.” At \$11.14 billion, it would have authorized more than double the debt authorized by the largest previous water bond. (Proposition 84 of 2006 authorized \$5.388 billion in debt.) The criticism noted the specific allocations, or earmarks, for projects such as “watershed information centers,” and open-ended allocations to “conservancies” for whatever environmental projects they chose. California has established state agencies called “conservancies” to implement projects that protect or restore the environment in their respective jurisdictions. The Coastal Conservancy and the Sierra Nevada Conservancy are two examples.

While the Schwarzenegger Administration had advocated for a bond for water supply infrastructure since 2006, the 2009 water bond developed over a period of weeks during the 7th Extraordinary Session of the Legislature, which the Governor called to address water issues. In October 2009, Schwarzenegger had threatened to veto every bill unless the Legislature agreed to approve a multi-billion water bond to help build dams. The “Big 5” (governor and legislative leaders) convened and developed an outline of a comprehensive water policy bill package that included a water bond with money for dams. Over the next few weeks, legislators negotiated the water bond with stakeholders in private. The Republican Senator who had long advocated for a bond introduced SB 2 X7 on October 27. It was amended four times — twice in the last 24 hours including around midnight. The amendments increased the bond by \$1.73 billion, from \$9.4 to \$11.14 billion. The Legislature approved the bond in the middle of the night on November 4 and Schwarzenegger signed it later that morning.

Stinging criticism arrived in the weeks that followed. Public support, in light of the economic downturn and the criticism, did not develop. Slated for the November 2010 ballot, the Legislature removed some of the most criticized earmarks and postponed the vote to 2012. Neither the economy nor voter support improved, so the Legislature again postponed the water bond to 2014. With a required 2/3 majority, Republicans voted for a postponement because the bond included \$3 billion for water storage, which they did not want to lose — and they believed a Democratic legislature would not approve in any future water bond.

The 2009 water bond was not the first to be developed behind closed doors. Previous water bonds also had been developed with little or no transparency. In 1996, then-Assemblyman Jim Costa shepherded the \$995 million water bond through stakeholder meetings in his office and the required public hearings. Proposition 13 in March 2000 authorized \$1.97 billion for a wide range of specific projects throughout the state, so that every region got some money. Proposition 50 (2002) was an initiative developed by its proponents, led by conservation lobbyist Joe Caves. It authorized \$3.44 billion in spending for water projects. There is no public record of how the structure of that funding developed. Finally, the 2006 ballot included two water bonds — one set by the Legislature for \$4.09 billion for flood protection and another initiative water bond (written again by Joe Caves) for \$5.388 billion. None of these bonds developed through the kind of transparent process that led to the development of the 2014 water bond.

GROWING NEED FOR WATER BOND FUNDING

By 2013, the need for a new water bond had become more urgent. When the new water bond development process commenced, six years since the last bond had elapsed. State agencies had expended much of the previous water bond funding. California’s state, regional, and local water infrastructure, which had developed mostly since World War II, continued aging and needed improvements. The state was in the middle of its second year of drought. California’s water conflicts and challenges, which called for additional water infrastructure investment, had continued to grow — and change.

Conflicts in the Sacramento-San Joaquin Delta, between needs for instream flow and water exports, became more intense as a second dry year progressed. The Governor’s proposal for twin tunnels to take Sacramento River water south through the Delta to water export pumps continued to develop, and drew more intense opposition. The Delta and its ecosystem continued to decline, calling for greater investment in ecosystem restoration. The Delta Stewardship Council, created by the 2009 Delta-Water Legislation, had

California Water Bond

Groundwater Contamination

Stormwater Pollution

Storage Funding

Drinking Water Quality

developed the new “Delta Plan,” which went final in May 2013 and called for increased Delta investments.

Understanding of the extent of groundwater contamination and the need for cleanup money also had grown since the governor had signed the 2009 water bond. The State Water Resources Control Board and the University of California (Davis) issued reports on nitrate contamination from decades of seepage of nitrate fertilizer, particularly in the Central Valley and the Salinas Valley. Some small communities that relied solely on groundwater had only contaminated drinking water for their source. Southern California communities that drew their drinking water from groundwater aquifers also saw the contamination expand in those years. The San Fernando Valley had invested millions of dollars in groundwater cleanup infrastructure, and the City of Los Angeles had closed numerous of its San Fernando Valley wells due to contamination. Neither the small communities nor the big cities could resolve their groundwater contamination without the State’s assistance.

Stormwater pollution also gained increased public attention, indicating the need for greater public investment. Plans to reduce urban stormwater pollution, especially in Southern California, developed to the point that local governments recognized the potential need for billions of dollars of investment. The US Supreme Court ruled that Los Angeles County could not be held liable for discharges by the mere fact of stormwater pollution in the Los Angeles River. *See Rich, TWR #120.* But its ruling left open the possibility that each city may be held liable for stormwater runoff. That liability could be substantial, too much for local governments to resolve with only their local funding resources.

Finally, as the Association of California Water Agencies noted regularly, more than 50 years had passed since voters had approved the financing and construction of the State Water Project, when California’s population was less than 16 million. Today, California has 38 million. Federal and state laws now require the federal and state water projects to take care of the environment as well as deliver water supply. The water world had changed and some suggested that a water bond would finance the water infrastructure for a state on its way to 50 million people. Some of these advocates, Republicans in particular, advocated at least \$3 billion in bond funding for water storage projects. The 2009 water bond included that storage funding. At the start of this conversation, these advocates insisted that any water bond had to include no less than \$3 billion for water storage, and the money had to be “continuously appropriated,” so there would be no way for the Legislature to interfere in the funding of water storage projects. These conditions provided the context in which the Legislature began the effort to rewrite the water bond in 2013.

THE HISTORIC TRANSPARENT PROCESS – A RENDON PERSPECTIVE

My first term as a member of the California State Assembly began with water. One key issue in my first campaign was the notoriously poor-quality drinking water in the small city of Maywood, in the 63rd Assembly District in southeast Los Angeles County. This city of 27,000 people is served by three small, private “mutual water companies” that are controlled by the landowners in a city with 2/3 of its

people renting their homes. Unlike neighboring public water agencies, the mutual water companies had no duty to be transparent to those who drink their water. Only landowners had rights to know anything about company operations and decisions. My district also suffers from more than its share of corruption behind closed doors. Five of the nine cities I represent have former councilmembers or city officials in jail. Those conditions provided the context for my planning to write a new water bond when Speaker John Pérez appointed me chair of the Assembly Water, Parks, and Wildlife (WPW) Committee in the spring of 2013.

Increasing transparency in developing a new water bond was a “given” when I started. I considered transparency as a way to prevent backroom deals and regain the public’s confidence, in contrast to what I had heard about the 2009 water bond’s development. Working with Speaker Pérez, I created a “Water Bond Working Group” with eight other members, many of them freshman who could serve another 12 years under the new term-limit law. Many of my freshman colleagues arrived with a commitment to greater legislative oversight, including expenditure of any water bond funding. They had heard the criticism of the 2009 water bond and sought to develop the next water bond in a fundamentally different way, more openly. We decided to start over and develop a completely new water bond.

The Water Bond Working Group started its work by engaging their colleagues in learning more about regional water issues and discussing what the next water bond might include. Members in each region gathered to discuss the state of their region’s water infrastructure. Some invited “experts” to present information, while others invited their water agencies and other stakeholders to talk to them. The members discussed the most urgent needs for water funding, in their region and statewide.

California’s Water System Moves Water, Mainly From North to South Through Delta



Source: “Effectively Implementing the 2014 Water Bond”
California Legislative Analyst, February 2015

California Water Bond

Prohibiting Earmarks

Framework

Informational Hearings

Regional Interests

Bond Proposals

Conservancy Allocations

Alternative Bills

The members brought these regional discussions back to the Working Group, and decided to establish “principles” for developing the next water bond. These *Proposed Principles for Developing a Water Bond (Principles)* (July 2, 2013) concentrated on two key goals — ensuring accountability and setting priorities for water bond allocations. Perhaps the most discussed principle was that we planned to “Prohibit earmarks for specific water projects, and establish competitive processes for awarding water bond funding.” This marked a fundamental departure from how the previous Legislature had constructed the 2009 water bond and its predecessors. As the Legislature took its summer break, members took these *Principles* back to their districts for discussion with their constituents, and the WPW Committee accepted stakeholder comments on the *Principles*.

When the Legislature reconvened in August, the Working Group developed a “framework” for the water bond, consistent with the *Principles*. This *Framework* provided a more detailed outline of what the water bond might include. The WPW Committee and the Working Group convened in the Assembly’s largest hearing room to hear public comments. Relying on the *Framework* and these public discussions, my office drafted a water bond, which we amended into AB 1331 on August 26. I amended the bill again on September 11, just before the Legislature adjourned for the year, allocating a total of \$6.5 billion for five categories of water infrastructure spending identified in the *Principles* and *Framework*.

Later that month, the Senate Natural Resources and Water Committee convened an informational hearing on AB 1331 and SB 42, the alternative water bond authored by Senator Lois Wolk, whose district includes the Sacramento-San Joaquin Delta. That began a series of informational hearings across California beginning that fall and lasting into the following spring. I set WPW hearings in regions where interest was highest and the Assemblymember requested to have a hearing. Instead of setting hearings where I chose, I relied on my colleagues to identify where their constituents were most interested in the water bond. We traveled from Indio (near Palm Springs) to Eureka (on the far North Coast) to hear what Californians had to say about the needs for state funding for water infrastructure.

The different regions reflected very different interests in water bond funding. In Indio, we heard about the Colorado River and the Salton Sea. In Eureka, we heard about the water needs of salmon and instream flow. In the San Gabriel Valley, we heard about contaminated groundwater and the Los Angeles River. The most memorable hearing remains the one in Hanford, in the heart of the San Joaquin Valley where farms had suffered from the loss of water due to drought. Hundreds of people showed up to testify, mostly about the importance of storage. We started at 5 p.m., so people could come after work. We stayed into the night to hear testimony, from farmers and farmworkers, local businesspeople, and just regular folks who came to tell us how the drought was destroying their community. I was struck by the witnesses who arrived after spending the day in a food bank line, and then told us that the loss of water meant their family’s breadwinners had no job. They urged us to find the funding to support projects that might bring more water to the San Joaquin Valley. So many people came, that many had to go to another room to watch the hearing on a big screen. The audience that night made California’s water problems very real.

In early 2014, many legislators introduced water bond proposals of varying forms. There were as many as ten water bond bills at one point, but few proceeded to hearing. Assemblymembers Perea (D-Fresno) and Bigelow (R-O’Neals) proceeded to hearing in the WPW Committee, while Senator Hueso had his water bond heard in the Senate Natural Resources & Water (NR&W) Committee. The Assembly bills passed WPW but stopped in the Appropriations Committee. Senator Hueso did not ask for a committee vote and joined the Senate’s water bond working group. Attention shifted to the leading members in each house discussing how to proceed with the water bond.

The Senate NR&W Committee heard AB 1331 on March 25, passing the water bond with amendments. The Committee made some amendments despite my objections, awarding specific amounts to each of the conservancies that had received allocations in the 2009 water bond. The Los Angeles Times had focused its criticism of the 2009 water bond on these conservancy allocations, which could pay for such projects as a water taxi at Lake Tahoe. While I had proposed regional allocations of watershed restoration funding, the Senate members and staff were committed to guaranteeing each conservancy a substantial allocation, some more than others. The Senate Committee’s chair sits on the board of the Santa Monica Mountains Conservancy, which received one of the largest allocations in the Committee’s amendments.

Both Senator Wolk and I continued pushing our alternative water bond bills forward, toward the June 26 deadline for putting a water bond on the November ballot. Mine went to two more Senate committees, including Senator Wolk’s Governance and Finance Committee, which removed AB 1331 from its hearing calendar. Shortly thereafter, I amended the \$8.2 billion water bond bill to address funding for the Delta. In response, the Senate Rules Committee took the bill back from the policy committee on June 18, and it was not heard again. Senator Wolk took up her \$10.5 billion water bond bill on June 23, but it did not receive the required 2/3-vote. The next day, Governor Brown announced he would support a water bond totaling only \$6 billion.

In the final weeks of June, I worked with Assembly Speaker Toni Atkins (D-San Diego) and my colleagues on negotiating a water bond that authorized an amount closer to the Governor’s \$6 billion

California Water Bond

Ballot Logistics

proposal and could get the 2/3 majority in both houses, which would include Republicans. Just before we took our summer break, we discussed a \$7.25 billion water bond but the Republicans refused to accept that proposal because it had less than the \$3 billion for water storage in the 2009 water bond that was still on the ballot. Both the Governor and I had committed to oppose the \$11.14 billion water bond, as fiscally irresponsible. Some suggested that Republicans did not believe that Democrats could ever oppose a water bond in the middle of the drought.

Over the summer break, discussions between the Governor and legislative leaders continued. While the Legislature could amend the law to allow a late addition to the ballot, logistics required the Secretary of State to send a ballot pamphlet to the printer at some point in August. That pamphlet would include the \$11.14 billion water bond, so I saw no benefit in putting a new, alternative water bond on the ballot after the pamphlet went to print. The voters would be confused, and confusion usually leads to a “no” vote. The Secretary of State gave the Legislature an August 13 deadline to replace and delete the 2009 water bond from the voter pamphlet.

Accountability

In the final days, the Governor and legislative leaders hammered out a \$7.545 billion water bond, AB 1471 (Rendon). It included \$400 million in redirection of previous water bond authorizations. As I reviewed the final product — which passed 77-2 on the Assembly Floor — I realized that the Governor had adopted as concepts much of the language from my AB 1331, such as accountability and the funding priorities. (AB 1471 became Proposition 1 on the November ballot.) The final product, for example, included no earmarks for specific projects and prohibited the Legislature from appropriating funding to specific projects. For the most part, the allocations addressed the priorities identified in the *Principles* and confirmed through 11 months of water bond hearings.

Proposition 1

The Governor made Proposition 1 a centerpiece of his re-election campaign and broadcast multiple commercials touting the need for water infrastructure funding as well as the fiscal responsibility reflected in the smaller water bond. (A companion ballot measure, Proposition 2, established a “rainy day” fund in the state budget.) Ultimately, Proposition 1 passed with 67% of the vote, a substantial improvement from public polling earlier in the year showing support for a water bond teetering around 50%. That supermajority can be attributed to many factors, including the unified, bi-partisan support from every region in the state. But I attribute that success to the fact that the Legislature held an open and transparent debate about accountability and spending priorities, which led to a “clean” water bond without any of the backroom earmarks that had destined the 2009 water bond to failure.

“Clean” Water Bond

Management

CALIFORNIA WATER ISSUES

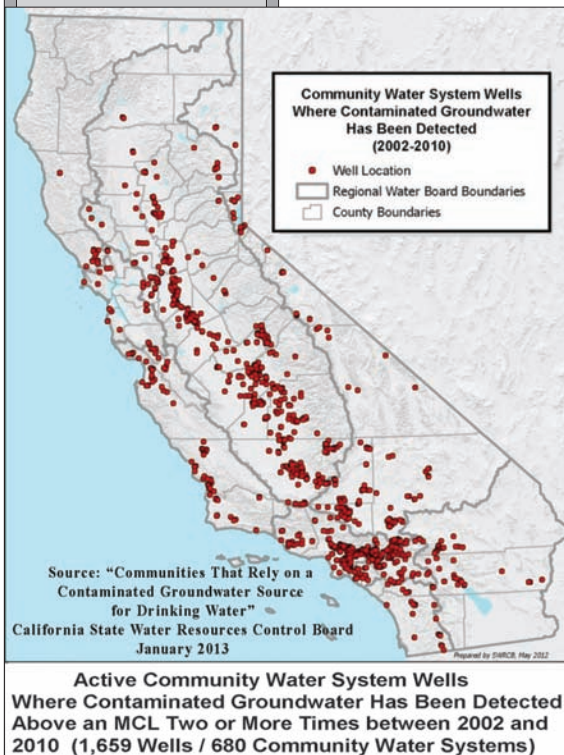
HOW SHOULD CALIFORNIA MANAGE ITS WATER?

The transparent and robust public debate about the 2014 water bond reflected the underlying issues about how California manages its water. In the 20th Century, California created the most sophisticated

water storage and conveyance system in the world, storing and moving water hundreds of miles. The system addressed California’s fundamental water challenge : 2/3 of California’s water falls in the northern third and 2/3 of the demand comes in the southern third. Much of the water falls in the Sierra Nevada, while the people live on the coast. In the water bond debate, some issues generated consensus and commitment. No one questioned the need for funding for safe drinking water, recycled water and groundwater cleanup. On other issues, however, the debate was intense and passionate, on both sides. The transparency of the water bond development process allowed Californians across the spectrum to learn, consider, and discuss how best to manage California’s precious and limited water supply, especially in the middle of one of the state’s worst droughts in history.

Consensus Issue: Safe Drinking Water

The Assembly had considered the issue of contaminated drinking water, especially in the Central Valley, since 2007. In 2008, the Legislature appropriated money to the State Water Resources Control Board (SWRCB) to study and develop pilot projects to reduce nitrate contamination in the Central Valley and the Salinas Valley. By 2013, UC Davis had completed its investigation and submitted recommendations to SWRCB to address nitrate contamination. The investigation focused attention on the many small communities in these regions that relied on groundwater that had been contaminated. The Assembly passed a series of bills to address these problems in 2013. The 2014-15 State Budget moved the safe drinking water program from the Department of Public Health to SWRCB, where the State could better coordinate water quality programs to help these small communities.



California Water Bond

Drinking Water

Groundwater Contamination

Storage Capacity

The priority for safe drinking water funding arose from the beginning, in the Assembly's *Principles*. (The 2009 water bond had only limited funding for safe drinking water.) Working closely with environmental justice advocates, both Assemblymember Rendon and Senator Wolk wrote their bills to provide funding to ensure all Californians had access to safe drinking water. Their bills' language was nearly identical. Governor Brown supported this objective from the beginning, including when he signed the Assembly's safe drinking water bills in 2013. This water bond language for safe drinking water remained in the bills to the end. The final leadership negotiation adjusted the language but retained the priority for safe drinking water.

Consensus Issue: Groundwater Cleanup

Historically, attention to groundwater contamination focused on the Federal Government, pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund. Efforts to clean up groundwater often arose out of CERCLA litigation settlements. In 2006, however, Proposition 84 authorized \$60 million in water bond funding to help prevent or reduce groundwater contamination for drinking water purposes. Since then, groundwater contamination continued growing, some regions built water treatment projects, and groundwater advocates argued that cleaning aquifers would expand availability of water storage capacity. The 2009 water bond allocated \$1 billion for groundwater cleanup projects, which was added in the final days before it passed in 2009.

The 2014 water bond included groundwater cleanup funding from the beginning, although the structure of that funding differed among the alternative bonds. AB 1331 addressed groundwater cleanup as part of its funding for water storage, adopting the argument that groundwater cleanup would expand the state's water storage capacity. Other bills allocated funding specifically to groundwater cleanup, similar to the 2009 water bond. Ultimately, the Governor allocated funding to "groundwater sustainability and cleanup," including money for groundwater sustainability plans that arise out of the historic 2014 groundwater management legislation, the other part of the historic 2014 California water legislation.

Consensus Issue: Recycled Water

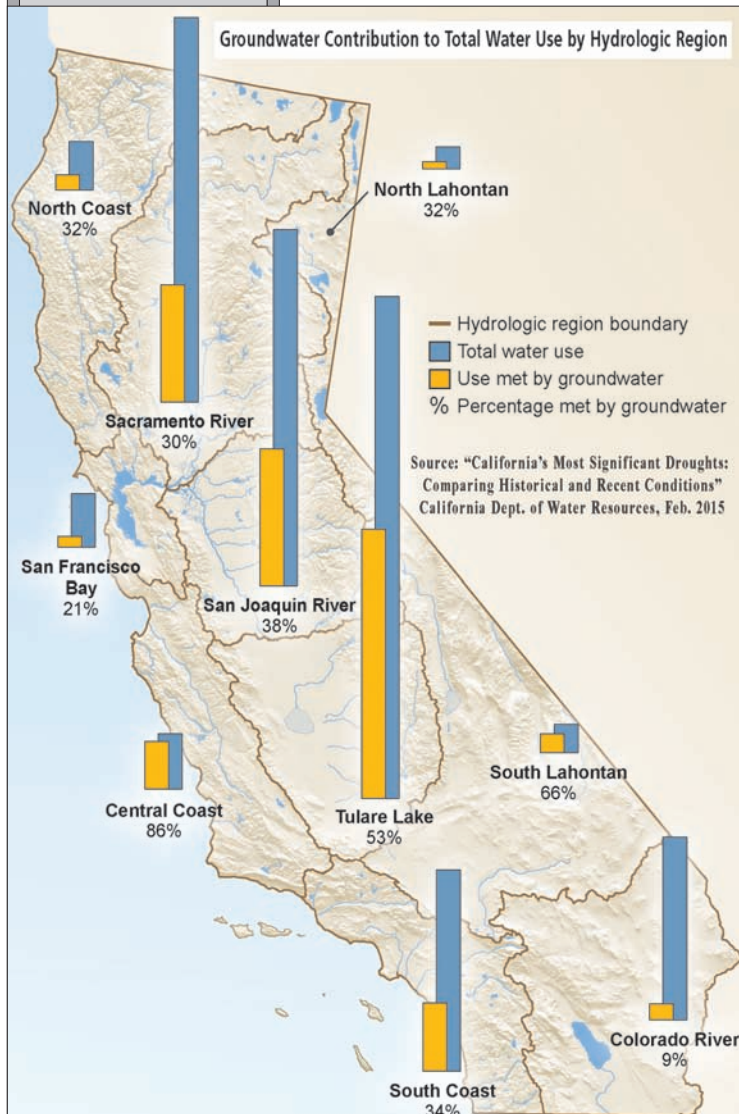
California has long set ambitious goals for using more recycled water. Its success in achieving those goals has been mixed. The SWRCB and legislation have reformed the regulation of recycled water and new projects continue coming on line. In recent years, some advocates have discussed the possibility of direct potable re-use, which is not yet a reality. In any case, recycling enjoys broad public support and, in a drought, it offers an alternative water supply that can come on line relatively quickly.

The 2009 water bond included \$1 billion for water recycling and almost all subsequent water bond proposals have included recycled water funding. Because the 2009 water bond included equal amounts for recycling and groundwater cleanup, recycled water advocates insisted on equal funding in new proposals. In 2014, the use of this funding expanded to include desalination projects, which also used advanced "water purification" technology. Ultimately, Proposition 1 included \$725 million for water recycling, which was less than the money for groundwater cleanup, but the groundwater cleanup category included funding for safe drinking water projects related to groundwater.

Challenging Issue: The Delta

The enduring controversy over managing the Sacramento-San Joaquin Delta kept the Delta at the forefront of the water bond debate. The opposition to the 2009 water bond arose from Delta advocates opposed to the "Bay-Delta Conservation Plan" (BDCP), which called for tunnels to take Sacramento River water under the Delta to water export pumps in the South Delta. The 2009 water bond authorized funding for the BDCP, among other projects in the Delta. On the other side, BDCP advocates insisted on bond funding for Delta ecosystem restoration projects connected to BDCP. As the BDCP proceeded through environmental review, the BDCP controversy spilled into the water bond debate.

For decades, no one has questioned that the Delta needs State funding for ecosystem restoration, but the structure of



California Water Bond

Delta Debate

"BDCP-Neutral"

Storage Strategies

Storage Funding

Bond Breakdown

the water bond funding drew dispute. AB 1331 took out any reference to BDCP and endeavored to remain neutral on the controversial project. Senator Wolk's bond proposals allocated all Delta ecosystem funding to the relatively new Delta Conservancy, which the 2009 Delta/Water Legislation created. The Delta Conservancy's board includes five (of 11) representatives from the Delta Counties, which oppose BDCP. Delta advocates considered the Delta Conservancy as a safe place that would never fund any ecosystem projects connected to BDCP. They rejected proposals that would allocate Delta funding to the Department of Fish and Wildlife or would not have allocated Delta funding to any specific agency. In June, AB 1331 amendments divided \$1.2 billion in Delta funding equally between levee improvements (sought by Delta advocates) and Delta ecosystem restoration tied to consultation with local Delta agencies. Neither side was satisfied with this proposal. The Delta debate continued into the summer.

The surprise occurred when the Governor announced, in June, that he would support a water bond that was "BDCP-neutral," which disappointed his allies in the BDCP controversy who wanted to build what had become known as "the Governor's tunnels" in the Delta. The final water bond substantially reduced Delta-specific ecosystem restoration funding, to \$87.5 million and levee improvement funding to \$295 million. Delta legislators asserted the bond had no money for BDCP and voted for it. Decisions as to how the State should manage — and pay for — the Delta will proceed into the future.

Challenging Issue: Water Storage

Building new dams and surface water storage reservoirs has drawn controversy in California for decades. The dispute over building the last federal Central Valley Project dam on the Stanislaus River went all the way to the United States Supreme Court, in *California v. United States* (1978). In 2000, the State and the Federal Government proposed further study and development of five surface water reservoirs and improved groundwater storage management, in the CALFED Bay-Delta Program Record of Decision. Governor Schwarzenegger took these five dam alternatives and insisted that a new water bond include funding for those reservoirs. In 2009, he threatened to veto all bills unless the Legislature approved a water bond with funding for those reservoirs. He signed the 2009 water bond that included \$3 billion for "public benefits" of new reservoirs, such as more water for instream flows or better flood protection.

The debate on water storage funding focused on the underlying debates about storage strategies. Few questioned the need for more storage, especially in light of the projected climate change impact of reduced snowpack — California's largest water reservoir. The question becomes how to store water — surface water reservoirs or groundwater aquifers, onstream or offstream, Central Valley or statewide? The question of the storage's purpose — scope of public benefits or private water supply — also arose. In addition, who should pay for the reservoirs — the State, local water agencies that get the water, or private entities?

For some Central Valley legislators, funding for the CALFED dams or groundwater — exactly as the 2009 water bond structured such funding — formed their bottom line for supporting a water bond. They resisted efforts to amend the storage language, to remove the preference for Central Valley dams or encourage more groundwater storage or allow the Legislature to appropriate the funding for dams. The Senate Natural Resources and Water Committee required bonds approved by the committee to allow the Legislature to appropriate storage funding, removing any kind of "continuous appropriation." In the end, however, the Senate needed Republican votes to garner a 2/3 majority to approve the water bond. The final negotiations, recognizing that need for Republican support, reproduced the 2009 water bond language and, with some redirection of previous water bond authorizations, capped the storage funding at \$2.7 billion. With the storage issue resolved, the final vote tallies were 37-0 in the Senate and 77-2 in the Assembly.

THE FINAL RESULT: \$7.545 BILLION WATER BOND

The final result of several years of water bond discussions and debate was Proposition 1 on the November 2014 statewide ballot. It included a mix of funding allocations, consistent with the Assembly's *Principles* and priorities from July 2013. The categories and amounts of funding authorized for general obligation bonds include:

Chapter 5: Clean, Safe, and Reliable Drinking Water (\$520 Million)

- \$260 Million — Small community wastewater treatment
- \$260 Million — Safe & affordable drinking water, including \$25 million for technical assistance program and \$2.5 million for disadvantaged community matching funds

Chapter 6: Protecting Rivers, Lakes, Coastal Waters, and Watersheds (\$1.495 Billion)

- \$327.5 Million — Multi-benefit watershed projects
- \$200 Million — Projects to enhance stream flows
- \$100 Million — Urban creek restoration, including the Los Angeles River
- \$20 Million — Multi-benefit watershed projects
- \$475 Million — State obligations in water-related settlements
- \$285 Million — Statewide watershed restoration projects
- \$87.5 Million — Delta water quality & ecosystem restoration

California Water Bond

Accountable Spending

Assemblymember

Anthony Rendon is serving in his second term representing the 63rd Assembly District, which includes nine cities in southeast Los Angeles County. Rendon authored Proposition 1, California's 2014 state water bond. Prior to serving in the legislature, Rendon ran several early childhood education and environmental nonprofit organizations. He received a Ph.D. in political science from UC Riverside.

Alf W. Brandt has served the California State Assembly for more than a decade on water and environmental law issues, and now serves as Assemblymember Rendon's Legislative Director. Before joining the Assembly staff, Brandt served as a water lawyer at the Department of the Interior and as leader of the City of Los Angeles delegation to the Board of Directors for the Metropolitan Water District of Southern California. He received his JD from UC Berkeley.

Chapter 7: Regional Water Security, Climate, and Drought Preparedness (\$810 Million)

- \$510 Million — By California Water Plan hydrologic regions
- \$100 Million — Urban and agricultural water conservation
- \$200 Million — Stormwater management

Chapter 8: Statewide Water Storage (\$2.7 Billion)

- Continuous Appropriation to California Water Commission

Chapter 9: Water Recycling (\$725 Million)

Chapter 10: Groundwater Sustainability & Cleanup (\$900 Million)

- \$100 Million — Groundwater sustainability planning & projects
- \$800 Million — Groundwater cleanup for drinking water sources

Chapter 11: Statewide Flood Management (\$395 Million)

- \$295 Million — Delta levee maintenance and improvements
- \$100 Million — Multi-benefit projects to achieve public safety and enhance fish/wildlife

Minimizing Pork

Just as the Assembly Working Group had advocated for prohibiting earmarks, Proposition 1 has none. Instead, it authorizes bond funding to implement programs, support regions/watersheds, and address some of California's most challenging water problems. Consistent with the emphasis on fiscal responsibility and accountability, the final version of Proposition 1 weaves this intent to minimize "pork" and provide accountability into its many chapters.

- **Chapter 2 (Findings)** makes declarations by "the people of California" that Proposition 1 is "fiscally responsible."
- **Chapter 4 (General Provisions)** requires funding agencies to establish competitive processes to decide which projects receive funding, prohibits legislative earmarks or appropriations to specific projects, states the people's intent that funding go to "the most critical statewide needs and priorities," requires the best available science and expert review of proposed projects, and mandates audits.
- **Chapter 5 (Safe Drinking Water)** requires technical assistance for disadvantaged communities, so that they may compete with more powerful, well-funded communities.
- **Chapter 6 (Protecting Rivers)** allocates funding to state conservancies but with narrow water-related project authorizations to prevent their using the bond funding for any purpose they choose, as the conservancies originally proposed. The Los Angeles Times had criticized previous water bonds' open-ended allocations to the state conservancies as "pork."
- **Other Chapters** authorized bond funding without any earmarks or allocations to projects.

What's Different?

Proposition 1 took a different path and ended in a different place than the 2009 water bond. California has a long history of passing water bonds, but this one addresses new issues and responds to the emerging challenges for California's water system.

Unlike previous water bonds, Proposition 1:

- Recognizes and invests substantially in cleaning up water pollution, to ensure safe drinking water, whether in groundwater, sewage water, or the Delta (Chapters 5 and 9)
- Focuses funding on the needs of disadvantaged communities with unsafe drinking water, including funding and programs for technical assistance (Chapter 5)
- Promotes the next generation of water infrastructure, such as stormwater management, recycling, and desalination (*See* §79707(e))
- Commits \$2.7 billion for water storage projects, relying on the California Water Commission to make the technical call of which projects get top statewide priority for bond funding (Chapter 8)
- Invests in groundwater sustainability planning, consistent with last year's other most significant water legislation, the Sustainable Groundwater Management Act (§79775)
- Sets a priority for leveraging bond funding with funding from federal, local, and private funding, to maximize California's water investments (§79707)

In 2012-13, some water bond discussion proposed merely shaving off the total amount authorized for bond funding, possibly reducing all categories. Instead, the Assembly Water Bond Working Group started over, and the final result completely redirected how California would spend its water bond funding.

CONCLUSION

THE WATER BOND THAT NO ONE EXPECTED

After 18 months of work on the most transparent water bond development process in history, the ultimate outcome surprised many. In 2013, critics of the Assembly Water Bond Working Group — including some legislators — said the Legislature could never pass a bond without earmarks to get those final votes and achieve the 2/3 supermajority required by the California Constitution. Some called a water

California Water Bond

Bond Hearings

Public's Concerns

Stakeholders Heard

Transparency

bond without pork “pure fantasy.” They suggested that, in the end, only a few key legislators would go to the Governor’s Office and work out what they wanted in the water bond.

Some criticized the plan for water bond hearings all over the state as “a waste of time.” Californians would not care or pay attention until the final weeks before the water bond election, when they were bombarded with commercials, possibly on both sides of the debate. They did not expect that regular Californians would show up for a hearing in some community center hundreds of miles from Sacramento. Poor people from disadvantaged and disenfranchised communities would never have the time to come to a water bond hearing. Only the water agencies that wanted money for their projects would show up, hoping that their legislators would get them a slice of the pie.

The transparent water bond development process proved those naysayers wrong. Crowds showed up at hearings, even in relatively isolated communities. They spoke from their heart, about the importance of water to their daily lives. They made California’s water problems real, to legislators, to reporters, and to those who saw only snippets on local TV news reports. When competing water bonds developed during the spring of 2014, the authors of the multiple water bond bills listened and did their best to address the public’s concerns.

And pork was not popular. By the time the legislative leadership went to the Governor’s Office that summer, neither the Governor nor the public would accept earmarks. Those negotiators, who had many side meetings with stakeholders, listened to what Californians told them about what they needed to see in a water bond. They listened to stakeholders, more than just the high-priced lobbyists for powerful interests. They were farmers and farmworkers, residents from the Coast and from the Central Valley, from cities and rural hamlets. The advocates for disadvantaged communities, which are too often disenfranchised and suffer some of the most dangerous drinking water, sat at the water bond negotiating table like never before.

The 2014 California water bond succeeded because the Legislature dared to set a new path for how to develop a water bond. Transparency succeeded. Californians lined up to support this new water bond, with more than 2/3 voting yes. Now the challenge will be ensuring that the voices of Californians continue to be heard, in the appropriations of water bond funding, the implementation of water programs, and the construction of the water infrastructure that voters approved. Transparency has only just begun.

FOR ADDITIONAL INFORMATION:

ALF BRANDT, Offices of Assemblymember Anthony Rendon, 916/ 319-2519 or alf.brandt@asm.ca.gov

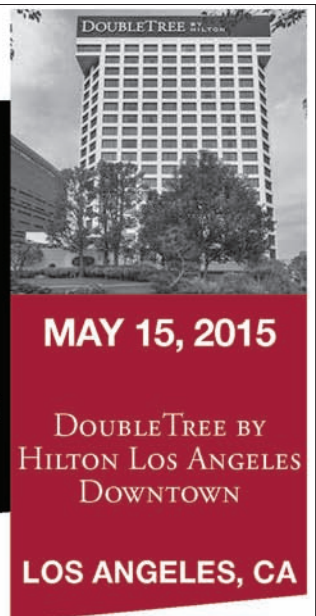
The Water Report is a media sponsor for the “Hot Topics in California’s Water” conference
TWR readers are welcome to a \$25 discount
(enter promotion code when registering: SPP25)

LEGAL AND PROFESSIONAL EDUCATION
THE SEMINAR GROUP

Hot Topics *in* California’s Water:

Drought, Finding Water, The Water Bond, and
Interpreting New Groundwater Regulation

For Information: www.TheSeminarGroup.net



Stormwater Management

Stringent Permit

“AKART”

Guidance Manual

Marine Terminal Focus

Creative Solutions

Floating Treatment

STORMWATER MANAGEMENT INNOVATIONS

WASHINGTON PORT FACILITIES CREATIVELY RESPOND TO STRINGENT STORMWATER REGULATIONS

by Deonne Knill, Project Manager, Kennedy Jenks Consultants (Portland, Oregon)

INTRODUCTION

In the State of Washington, the Department of Ecology’s (Ecology’s) Industrial Stormwater General Permit (ISGP) is one of the most stringent stormwater discharge permits in the United States. Port-related facilities in particular have had a difficult time achieving pollutant benchmark values for metals and turbidity as regulated in the permit. Washington State law requires permit holders to implement All Known, Available, and Reasonable methods of prevention, control, and Treatment (AKART). AKART is similar to “Best Available Technology Economically Achievable (BAT)” which is required under federal law. AKART has been difficult to define for stormwater discharges at industrial facilities.

WASHINGTON ISGP PARAMETER BENCHMARKS

Table 1: Washington ISGP Parameter Benchmarks

Parameter	Units	Benchmark Value
Turbidity	NTUs	25
pH	Standard Units	Between 5.0 and 9.0
Oil sheen	NA	No visible oil sheen
Copper, Total	µg/L	14
Zinc, Total	µg/L	117

Notes: NTUs = nephelometric turbidity units; NA = not applicable; µg/L = micrograms per liter

Stormwater runoff contains sediments and toxic pollutants that affect plants and animals in downstream waters. Ecology’s ISGP is complex, covers many types of industrial activities, and is intended to help facilities properly manage their stormwater before it flows into rivers, lakes, and streams. Recently, the Washington Public Ports Association (WPPA) worked with Ecology, industry, and environmental groups to develop a manual to help marine terminal operators comply with the many requirements of the ISGP. Kennedy/Jenks Consultants, in partnership with WPPA, kpff Consulting Engineers, Herrera, and Anne K. Farr Environmental Consulting Services, developed the *Washington State Marine Terminal AKART and ISGP Corrective Action Guidance Manual* (WPPA Manual), which was finalized in early 2015, and provides marine terminal facilities with a pathway to follow to achieve ISGP compliance. In particular, the WPPA Manual defines AKART for marine terminal operations, specifying approved treatment technologies when corrective action is required due to pollutant levels above benchmarks in the ISGP. The information in the WPPA Manual is relevant to many other types of industrial operations and could be useful to other facilities in identifying opportunities to improve their operations, including meeting AKART requirements (although the WPPA Manual only directly applies to marine terminal facilities). [The WPPA Manual is available from Ecology’s website: www.ecy.wa.gov/programs/wq/Stormwater/industrial/WPPAAAKART-ISGPCorrActnGuid.pdf].

Due to the nature of Port operations, open space for ponds, swales and other conventional stormwater treatment measures is limited and treatment performance data is scarce where these measures have been implemented. While permittees are encouraged to “think outside the box,” the majority of the data provided in guidance manuals is for proprietary stormwater treatment systems based on Ecology Use Level Designation in their Stormwater Management Manuals. Even with this limited guidance and a challenging regulatory environment, Ports across the Pacific Northwest have implemented creative solutions to meet stormwater permit conditions and improve stormwater quality at their facilities. The following case studies describe creative solutions that have been implemented at Ports in the Pacific Northwest — solutions that could be applicable to many other industrial facilities.

PORT OF VANCOUVER STORMWATER TREATMENT SYSTEMS

Floating Treatment Wetlands

Floating Treatment Wetlands (FTW) have been in use in New Zealand for some time, but are not yet a common treatment option at facilities in the US. Moreover, while the concept of an FTW is simple enough — wetland plants are floated on a buoyant material where they live, absorbing pollutants as they grow — there is limited field data for FTW effectiveness in industrial settings.

Stormwater Management



Metals Reduction

However, the Port of Vancouver and their team, including Kennedy/Jenks, determined that FTWs could be a key component to metals reduction in an existing stormwater retention pond at the Port's Terminal 4. After considering various options, the Port selected FTWs because they could be constructed quickly, using the Port's own staff. In addition, if FTWs were determined to be effective, they could conveniently add additional treatment cells to the system, increasing the overall metals removal efficiency.

FTWs are constructed so that plant's greens grow above the buoyant material, and the roots grow into the water. The roots attract and adsorb suspended particles and metals that are in the water. Plant root growth in the water column forces heavier particles to slow down and sink. FTWs, due to the nature of floating plants, can tolerate fluctuations in pond water levels. A 2013 New Zealand study indicated that, using FTWs, copper could be reduced by up to 55 percent.

Port Staff Design

Port staff investigated and found that an FTW of the size needed could cost upwards of \$550,000 if built by a private contractor. According to the Port, they were "determined to find a more cost-effective solution, they put their heads together, developed their own blueprints, and researched materials and costs." [See www.portvanusa.com/environment/unique-floating-wetlands-treat-stormwater/]. In the end, Port staff constructed their own FTW from locally-sourced materials, and used native wetland plants (*Juncus effusus*). The first phase of the FTW, consisting of 26 cells with 10 plantings per cell, was launched into the Terminal 4 stormwater pond in late September 2014.

Cost Effective

It will take a couple of years for the plants to establish and take hold in their new environment before the Port can test the FTW effectiveness in metals removal. If tests show successful results, the Port has plans to expand the FTW to cover upwards of 20 percent of the existing pond surface area. According to the Port, by doing the design and construction themselves they were able to install the FTW for less than \$30,000 — saving more than \$520,000 and getting the same product faster than hiring a vendor.

Roof & Downspout Runoff

Grattix: A Rain Garden in a Box

After investigating zinc and copper in stormwater throughout ISGP areas of their facility, the Port of Vancouver took some innovative steps of their own to address the problem. Stormwater runoff directly from roofs and downspouts appeared to contribute zinc and copper well above ISGP benchmarks (117 and 14 micrograms per liter, respectively). Matt Graves and Mary Mattix, environmental staff at the Port, designed their own "rain garden in a box" — nicknamed the "Grattix" — which they placed to directly filter runoff from roofs and downspouts. They used readily available materials, including a 275 gallon food grade plastic tote, drain rock, underdrain piping, sand, and amended soil consisting of sand and compost. They planted the top of the tote with rushes and sedges and added bark mulch for a finishing touch. The selected plantings are hardy and native to the region. The plants can safely dry out in the summer months and tolerate ponding water in the wet season.

Stormwater Management

The Grattix was piloted from 2008 to 2011 and the Port collected upstream and downstream samples. The maintenance required during this time was limited to mulch replacement. A summary of results in relation to the regulatory benchmarks (BMs) for Total Zinc and Total Copper are included in Table 2. Values for dissolved zinc and copper have been included, as well.

Table 2: Performance Results for Grattix

THE GRATTIX		Total Zinc	Dissolved Zinc	Total Copper	Dissolved Copper
		µg/L	µg/L	µg/L	µg/L
		BM 117	BM n/a	BM 14	BM n/a
11/20/2008	Pre-Treat	295	290	140	63.6
	Post-Grattix	21.3	ND<5.00	18	ND<2.00
	% Reduction	93%	98%	87%	97%
11/25/2008	Pre-Treat	947	1020	110	78.8
	Post-Grattix	14.7	ND<5.00	7.65	2.71
	% Reduction	98%	100%	93%	97%
12/12/2008	Pre-Treat	278	275	73.9	28.4
	Post-Grattix	ND<5.00	ND<5.00	2.65	ND<2.00
	% Reduction	98%	98%	96%	93%
12/29/2008	Pre-Treat	213	178	61.6	ND<10.0
	Post-Grattix	ND<20.0	ND<20.0	ND<10.0	ND<10.0
	% Reduction	91%	89%	84%	0%
2/10/2009	Pre-Treat	155	141	35.1	12.2
	Post-Grattix	11.8	9.67	3.79	ND<2.00
	% Reduction	92%	93%	89%	84%
5/4/2009	Pre-Treat	148	154	23.8	16.6
	Post-Grattix	5.27	ND<5.00	ND<2.00	ND<2.00
	% Reduction	96%	97%	92%	88%
9/7/2010	Pre-Treat	202	151	56.2	4.26
	Post-Grattix	13.3	12.3	13.3	3.91
	% Reduction	93%	92%	76%	8%
10/25/2010	Pre-Treat	264	308	10.8	7.75
	Post-Grattix	3.14	ND<3.08	ND<2.00	ND<2.00
	% Reduction	99%	99%	81%	74%
2/16/2011	Pre-Treat	94.1	85.3	21.4	6.7
	Post-Grattix	ND<3.08	ND<3.08	ND<2.00	ND<2.00
	% Reduction	97%	96%	91%	70%
1/19/2012	Pre-Treat	55.6	56.1	14.5	7.43
	Post-Grattix	ND<4.00	ND<4.00	ND<4.00	ND<4.00
	% Reduction	93%	93%	72%	46%

As of spring 2015, the Port has a total of eight Grattix boxes on-line, with more on the way and a goal to install up to a total of 18. The Port's current design treats approximately 1500 square feet of roof without overloading and bypassing the treatment system even during a 2-year, 24-hour storm event (i.e., the regulatory design storm) of 2.4 inches of rain. The design can be altered for site-specific needs by changing the thickness of layers and the compost to sand ratio used. After a few years of troubleshooting, they have a few suggestions to pass along:

- Make sure to get a food grade tote if buying used. Craigslist has been a great place to find them.
- Find out the source of the compost. Compost derived from yard debris may contain metals, as well as other pollutants due to the use of fertilizers, pesticides and herbicides. Be sure to find compost from a single source that you can trust.
- Avoid buying Intermediate Bulk Container (IBC) totes with the galvanized pallets and cages. Or be sure to paint or coat them somehow, to contain the galvanizing, if it's the only option. There are IBC totes with aluminum cages and black plastic pallets on the market.
- Drill small holes near the top of the tote on the back-side for overflow purposes. Make the holes small enough to keep the floating mulch from flowing out and making a mess on the ground.
- It is good to cover the sides of the tote with wood or other materials to protect the tote from the sun's ultraviolet rays.

The demonstrated success of the Grattix units has generated much interest. The Washington Stormwater Center worked with the Port and created a video for their Stormwater Channel: www.wastormwatercenter.org/stormwater-channel.

Notes and Resources

Special thanks to the Port of Vancouver for sharing their Grattix pilot test data.

Floating Treatment Wetland photo provided by Port of Vancouver.

Floating Treatment Wetland study: *Floating Treatment Wetlands –An Innovative Solution to Enhance Removal of Fine Particulates, Copper and Zinc*. By Chris C. Tanner and Tom Headley, National Institute of Water & Atmospheric Research, Hamilton, New Zealand. The NZWWA Journal, July 2008. See www.floatingislandinternational.com/wp-content/plugins/fii/research/10.pdf.

PORT OF TACOMA STORMWATER TREATMENT SYSTEMS

The Port of Tacoma is responsible for maintenance of stormwater systems at the 56-acre Olympic Container Terminal, 12-acre North Intermodal Yard, and the 22-acre South Intermodal Yard — all located in Tacoma, Washington. All three facilities are completely paved and subject to extremely heavy operational loads, including the loading, unloading, storage, and transfer of shipping containers to and from ship, rail, and trucks. Stormwater discharges from all three facilities are covered under the ISGP and each facility was faced with the need to install stormwater runoff treatment by the end of 2014, due primarily to zinc concentrations above permit benchmarks. In addition to meeting treatment performance requirements, the Olympic Container Terminal and the South Intermodal Yard have very little available space, so subgrade treatment systems — designed to operate under gravity flow, with a minimal footprint, and capable of withstanding wheel loads of 125,000 pounds — were required.



<div data-bbox="115 180 345 264">Stormwater Management</div> <div data-bbox="167 338 293 401">Preferred Options</div> <div data-bbox="134 512 326 575">Gravity-Based Systems</div> <div data-bbox="167 827 293 890">Particle Filtration</div> <div data-bbox="167 1104 293 1167">Small Footprint</div> <div data-bbox="147 1493 313 1556">Site-Specific Options</div> <div data-bbox="147 1734 313 1766">Media Packs</div> <div data-bbox="147 1877 313 1940">Manhole Installation</div>	<p>Based on AKART evaluations at each facility, a different proprietary, gravity-based treatment solution was recommended at each facility to meet each location's unique stormwater characteristics and operational needs.</p> <p>SELECTED TECHNOLOGIES INCLUDE:</p> <p>South Intermodal Yard — Contech Jellyfish Filter www.conteches.com/products/stormwater-management/treatment/jellyfish-filter.aspx</p> <p>Olympic Container Terminal — Hydro International Up-Flo www.hydro-int.com/us/products/up-flo-filter</p> <p>North Intermodal Yard — Modular Wetlands MWS-Linear 2.0 www.modularwetlands.com/stormwater-products/mws-linear/</p> <p>The AKART evaluation for each facility was critical in selecting the best technology based on site-specific consideration. The use of gravity-based systems was of primary importance to keep implementation costs low. The Port also underwent AKART evaluation for a waterfront log yard, which resulted in the installation of a biofiltration system. Each treatment solution is described in more detail below.</p> <p style="text-align: center;">Contech Jellyfish Filter</p> <p>The Jellyfish Filter (Jellyfish), manufactured by Contech, provides pretreatment and filtration to remove pollutants from stormwater runoff. This system was installed at the South Intermodal Yard, where runoff is routed to a precast concrete manhole where large debris settles and floatables are retained. The system includes an up-flow configuration providing particle filtration reportedly down to two micrometers (µm) through cylindrical pleated membrane filters resembling tentacles, giving the Jellyfish its name. The process also incorporates passive backwash and removal of sediment that may be attached to the membrane filtration tentacles.</p> <p>The Jellyfish filters can be removed, washed, and reused — which reduces the frequency by which the filters need to be replaced. Backwash through the filters also provides continual cleaning during use, which also offers potential reduction in maintenance efforts. Periodically, a vacuum truck is required to remove settled material from the sump, as well as the floating debris.</p> <p>The Jellyfish was selected because it required a relatively small footprint and a minimum of 18 inches of operating head. The Jellyfish currently holds a “Conditional Use Level Designation” for “Basic Treatment” with Ecology and can be designed to withstand wheel loads equal to or greater than 125,000 pounds. Confined space entry is required to replace the membrane filters.</p> <p style="text-align: center;">Hydro-International Up-Flow Filter</p> <p>The Up-Flo Filter (Up-Flo) by Hydro-International, is a high-rate, multi-stage stormwater treatment system, which utilizes both sedimentation and fluidized media filtration bed technology. This system was installed at the Olympic Container Terminal, where stormwater enters an initial chamber equipped with a sump, and initial pretreatment occurs as sediment settles to the bottom, while oil and floatables rise to the surface and are retained. As water rises in the sump, flow is conveyed through screens and fluidized media filtration beds, and then discharged to a discharge pipe. The fluidized media filtration bed consists of mesh bags containing filtration and adsorptive media. Hydro-International offers various engineered media mixes that can be selected based on site-specific pollutant concerns; at this site a mix of carbon char, peat, and zeolite (CPZ) was initially specified to address zinc and turbidity. As with other manufactured systems, the Up-Flo is intended to be installed downstream of a flow splitting device, though an internal weir is included to bypass flows while retaining captured floatables and solids.</p> <p>After a storm event has subsided, the Up-Flo system's drain down feature drains the water in the filter chamber down to the sump level, reportedly increasing the longevity of the filters by creating a backwashing effect, removing grit, oil, and debris, and by keeping the filter media dry between storms. Typical maintenance of the Up-Flo includes use of a vacuum truck to remove accumulated sump solids, as well as periodically replacing the media packs within the filter system. The engineered media mixes are provided in filter bags for ease of removal and replacement during maintenance, and the media packs reportedly weigh approximately 50 pounds each when they need to be replaced.</p> <p>The Up-Flo requires 30 inches of operating head for treatment and can be sized for various flow conditions with the standard system designed to be installed in a traditional manhole, four feet in diameter and seven and a half feet in depth. The Up-Flo currently holds a “Pilot Use Level Designation” with Ecology for “Basic Treatment” and can be designed to withstand wheel loads equal to or greater than 125,000 pounds.</p>
--	--

Stormwater Management

Three-Stage Treatment

Wetland Plants

Wood Products

Treatments Considered

Activities' Range

Modular Wetlands MWS-Linear 2.0

The MWS-Linear 2.0 by Modular Wetlands (MWS 2.0), is a multi-stage linear treatment device, and was installed at the North Intermodal Yard. Initial treatment is provided in an inlet chamber where trash is captured and larger suspended solids settle out. A second stage of treatment is provided by pre-filter cartridges located in the settling chamber, which assist in removal of finer solids, dissolved metals, nutrients, and bacteria. The third stage of treatment includes a wetland chamber where flows are evenly distributed through treatment media and vegetation and is collected using a network of perforated pipes. The MWS 2.0 was installed flush with the ground surface and is equipped with an internal bypass chamber to allow excess flows during peak storm scenarios to bypass the system and proceed directly to the outfall. Periodically, a vacuum truck removes the settled material from the inlet chamber. Regular replacement of the pre-filter cartridges is required.

The MWS 2.0 currently holds an Ecology “General Use Level Designation” for “Basic Treatment” (TSS) and “Enhanced Treatment” (metals reduction). The MWS 2.0, installed with wetland plants, is intended to be installed at the surface, and can not accommodate heavy traffic. The MWS was placed just upstream of an existing outfall on a narrow strip of unpaved shoreline. The long, narrow, footprint of the MWS provided a great opportunity for an at-grade, aesthetically pleasing, treatment system.

This is the first industrial installation of the Up-Flo filter and MWS 2.0 in the Pacific Northwest. Other installations are going in right now, so it certainly won't be the last.



West Hylebos Pier Log Yard Biofiltration System Design

The Port of Tacoma has constructed a stormwater treatment system for runoff from its 25-acre waterfront log sort yard adjacent to the Hylebos Waterway. Stormwater runoff at the site is also covered under the ISGP. Like most wood products facilities in the Pacific Northwest, the log yard was having difficulty meeting the ISGP-listed benchmarks for: total suspended solids (TSS); turbidity; chemical oxygen demand (COD); zinc; and copper.

An AKART evaluation was completed and it identified appropriate stormwater treatment systems while carefully considering the site's unique combination of economic, geographic, and contaminant constraints.

The AKART study spanned the range of available treatment technologies and included:

- transfer of runoff to the City of Tacoma's sanitary sewer system
- engineered stormwater treatment wetlands
- biofiltration
- advanced treatment utilizing coagulation, flocculation, settling, oxidation, and adsorptive media filtration

Also evaluated were concept-level designs and order-of-magnitude cost estimates and 30-year life cycle costs. Using the AKART evaluation, a three-stage media filtration system was selected for design.

Port facilities need to be nimble. Having the ability to adapt to handling a wide range of different commodities is crucial. The biofiltration approach was selected for its ability to meet the overarching goal of providing a stormwater treatment system for a range of possible activities at the West Hylebos Pier — not only for log handling, but also any other commodity that may be handled in the future. The West Hylebos Pier Log Yard biofiltration system was the first application of biofiltration for treatment of runoff

Stormwater Management Innovations

Pilot Study

from log yards and Kennedy/Jenks worked with the Port to pilot the biofiltration concept in the field under real-world conditions. Results of the pilot study helped define the hydraulic and treatment requirements for use in final design. Construction on the system was completed and was brought online December 2013. After start-up, the system quickly met benchmarks for five out of six of the applicable ISGP parameters and met all benchmarks for three consecutive quarters from July 2014 through March 2015.

The Port of Tacoma and their stormwater manager, Anita Fichthorn, are used to blazing a trail for others to follow. The biofiltration system won the American Association of Port Authorities 2014 Environmental Excellence award for Comprehensive Environmental Management.

Port of Tacoma Biofiltration



STORMWATER TREATMENT SYSTEM AT PORT OF SEATTLE

Chitosan-Enhanced Sand Filtration System

Northland Services Inc. operates a 70-acre marine cargo handling facility at Port of Seattle's Terminal 115 adjacent to the Lower Duwamish Waterway. The facility is the largest dry cargo barge facility on the West Coast. The facility is focused on domestic import and export and storage of shipping containers and break bulk materials (i.e., materials that don't fit in standard shipping containers). Like the other Port facilities above, stormwater runoff from this site is regulated under the ISGP. Approximately 44 acres of drainage area required treatment. Paved and unpaved runoffs from the facility are not only high in metals and some solids, but also include very fine particulates that are extremely difficult to prevent entering the storm drains. Due to these runoff characteristics and the various operations performed at the site, there are significant challenges with implementing appropriate stormwater treatment **best management practices** (BMPs) designed to meet the ISGP benchmarks.

To determine an appropriate stormwater management approach, four different treatment alternatives were evaluated, including: biofiltration; enhanced media filtration; electrocoagulation; and chitosan-enhanced sand filtration (CESF). Ultimately, Northland selected and implemented a CESF treatment system because of positive bench scale test results, as well as its competitive cost and footprint. Both temporary (interim) and permanent full-scale treatment systems were implemented with the goal of treating stormwater runoff to the degree necessary for meeting ISGP benchmarks.

The interim treatment system was installed to treat a 10-acre unpaved area, designed to treat 400 gallons per minute (GPM). All the components were designed to be reused in the full-scale system. In addition, the interim stormwater collection and conveyance piping were designed and constructed so no permanent modifications to existing infrastructure were necessary to bring the interim system online. The full-scale treatment approach includes two treatment systems (Basin 3 and Basin 4) to capture the entire 44-acre drainage area. Basin 3 treatment system is designed for 1,200 GPM. Basin 4 treatment system is designed for 725 GPM and reuses the interim treatment system components. It should be noted that significant conveyance revisions were necessary to convey stormwater runoff to the systems for treatment. These revisions include, but are not limited to: flow splitter structures; pumps and associated valves; and influent and effluent piping. In many cases, the costs of conveyance system improvements that are necessary to implement a treatment system can be greater than the cost of the treatment system itself. It is critical for site owners/operators to consider conveyance and other site improvements that may be necessary as part of the selection process for any treatment system. A snapshot of the interim and full-scale treatment performance, specific to turbidity, is illustrated in the following graphs (next page).

Runoff Characteristics

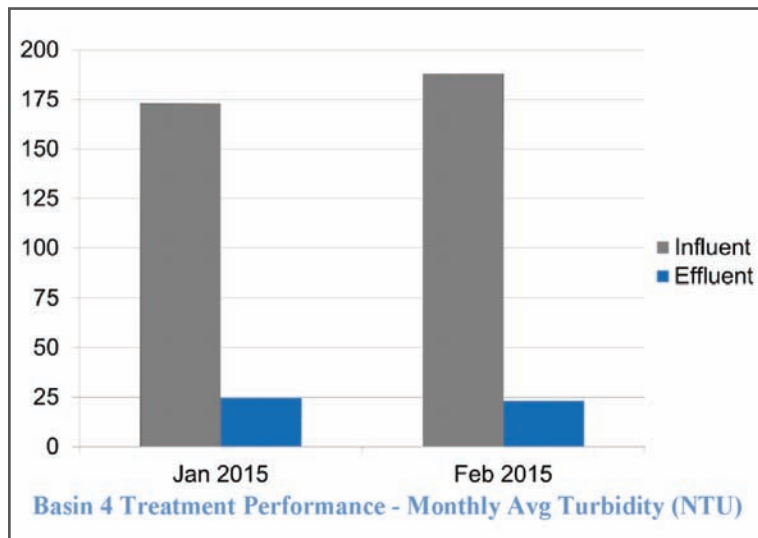
Temporary & Permanent Systems

Interim Treatment

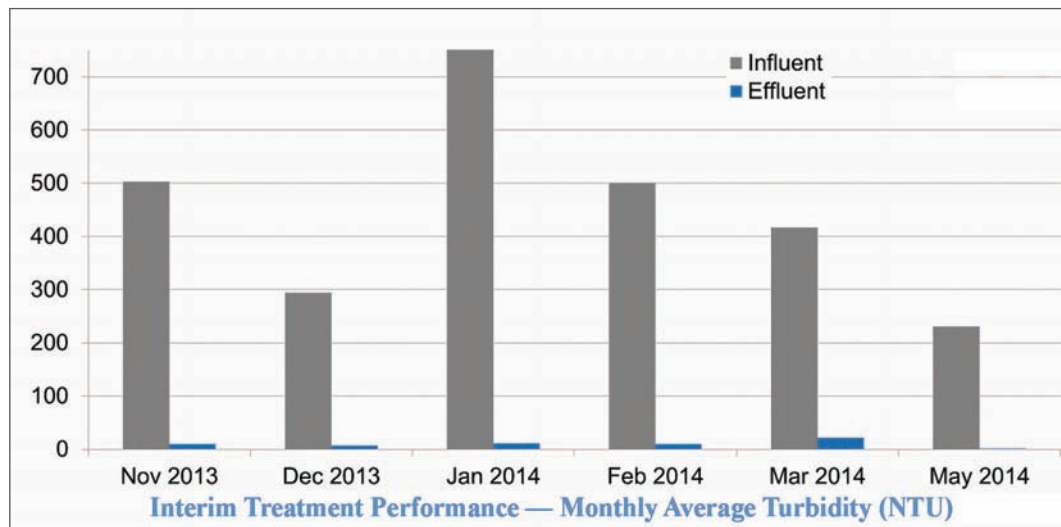
Conveyance System

Stormwater Management Innovations

Deonne Knill is a Project Manager at Kennedy/Jenks in Portland, Oregon. Ms. Knill graduated with a degree in Civil Engineering from Purdue University and is a licensed professional Civil Engineer in Oregon. She joined Kennedy/Jenks in 2001 and works on site investigation and cleanup sites as well as stormwater projects at industrial facilities. In 2014, Deonne started writing for the Kennedy/Jenks Stormwater Blog to share regulatory updates and case studies with the public as stormwater treatment technology advances and regulatory requirements change.



More detailed influent and effluent stormwater characteristic comparisons are not currently available. However, per the ISGP, quarterly sampling has been performed and both the Basin 3 and Basin 4 CESF treatment systems have successfully proven to be effective in reducing influent concentrations below benchmarks for all ISGP required parameters.



FOR ADDITIONAL INFORMATION:

DEONNE KNILL, Kennedy/Jenks Consultants, 503/ 423-4017 or DeonneKnill@KennedyJenks.com



Managing Stormwater in OREGON

May 21 | Portland

Register today at www.stormwaterconf.com/or15

Presented by **NEBC** northwest environmental business council

www.nebc.org

MONTANA WATER RIGHTS ADJUDICATION

NOTABLE DECISIONS & CHALLENGES

by Chief Water Judge Russ McElyea and Water Master Madeleine Weisz (Bozeman, MT)

Montana Adjudication

Common Law

Adjudication Purposes

Water Court Creation

Claims Deadline

Claims Examination

Litigation Phase

"Prima Facie" Status

BACKGROUND

A SHORT HISTORY OF THE MONTANA ADJUDICATION PROCESS

Montana's first attempt at a comprehensive adjudication of water rights began in 1973. Prior to 1973, Montana lacked a statewide system for defining water rights or resolving water rights disputes. Claims for water rights were made under the common law, by filing notices of appropriation in county courthouses, or resulted from litigation. In places where competition for water was fierce, local courts allocated water rights by issuing decrees, with multiple decrees often issued on the same stream. The lack of a comprehensive procedure for defining water rights resulted in complexity, confusion, and inconsistency.

These problems caused the Legislature to create a statewide adjudication process, as part of the adoption of the 1973 Water Use Act. The rationale for passage of the Act included a perceived need to fend off competing claims from downstream states. The Legislature also wanted to: facilitate water planning; better assess requests for new uses of water; provide more certainty in real estate transactions; and provide for better administration of water rights.

Montana's first attempt at comprehensive adjudication was not a success. Water right owners were required to file declarations of their claims, which were reviewed by Montana's Department of Natural Resources and Conservation (DNRC). The DNRC's review process was elaborate and included field examination of each claim, including stockwater and domestic rights. Disputes over claims were resolved by local District Court judges. The result was a painfully slow process.

Estimates at that time suggested there were 500,000 water rights in Montana. After several years of effort, it became apparent that adjudicating these claims would take more than a century.

Montana's present system of water rights adjudication began in 1979 with modifications to the 1973 Water Use Act. For the first time, a claims filing deadline was imposed statewide. A specialized Water Court was created to adjudicate claims, and the outline of a new claims examination process began to emerge. Confidence in the new system was high, and many commentators forecast that the adjudication would be completed in less than a decade.

Approximately 218,000 claims were filed by the deadline of April 30, 1982. Claims were segregated geographically among Montana's 85 hydrologic basins. Adjudication of water rights was organized by basin. The claims were filed for water rights with a priority date prior to July 1, 1973. **[Editor's Note:** Montana, like all the western states, operates under the Prior Appropriation Doctrine, whose main tenet is "first in time, is first in right." In essence, the user with the oldest water right — and thus the oldest "priority date" — is entitled to receive the full extent of their water right in times of shortage, even if that means that junior water rights are completely shut off to satisfy the senior user. As of July 1, 1973, Montana instituted its permit system, where any new water rights must be obtained by applying to the DNRC for new uses.]

The initial phase of the adjudication consisted of claims examination by the DNRC. The role of the DNRC is to assist the Water Court by gathering, examining, and reporting data, facts, and issues pertaining to claims of existing rights. Claims examination is a complex, expensive, and time-consuming task. Depending on the type of right involved, claims examination rules may require review of numerous features of a water right, including ownership, purpose of use, flow rate, point of diversion, priority date, means of diversion, place of use, source, volume, climatic area, irrigated acreage, and reservoir data. Many other aspects of water rights are also reviewed during the process. Claims examination has consumed the majority of the funding allocated to Montana's adjudication.

The second phase of the adjudication is litigation. Once claims examination is complete, the Water Court issues a preliminary decree of all the water rights in a basin. Other water users are given an opportunity to object to the claims in the preliminary decree. Issuance of a preliminary decree marks the start of the litigation phase.

By statute, water right claims in Montana have "prima facie" status. This means that the claim meets the threshold of evidence necessary to establish the facts alleged and places the burden of proof on an objector to overcome that threshold and prove a claim is invalid or inaccurate. Once objections to a preliminary decree have been filed, the Water Court begins consolidating cases and issuing scheduling orders. Parties to the cases include claimants, objectors, and parties filing notices of intent to appear. Water rights that survive the litigation process are compiled in a final decree.

THE MONTANA WATER COURT

**Montana
Adjudication****Legislative
Support**

The Water Court has evolved since its creation. Montana's first water judge was W.W. Lessley, a former District Court judge. Judge Lessley began the adjudication process with a small staff consisting of a few water masters and clerks.

Legislative support for the adjudication process was erratic, and the Water Court remained mostly unchanged for twenty years. In 2005, the legislature decided additional resources were needed if the adjudication was to be completed in a timely manner. The Water Court now consists of two water judges, each with statewide jurisdiction. Operations of the Water Court are overseen by the chief water judge and a court administrator. The Court also has clerks, paralegals, and support personnel.

Water Masters

The majority of trial work is handled by water masters who report to the water judges. The Water Court typically has about a dozen water masters ("Masters" or "Water Masters") on staff. The masters issue reports to the judges with recommendations regarding disposition of claims and objections. Parties may object to a master's report. Objections to master's reports are heard by the water judges.

The chief water judge also appoints four division water judges. Division water judges are District Court judges situated in the Clark Fork, Yellowstone, and upper and lower Missouri River watersheds. Division water judges handle cases when a Water Court judge has a conflict, or cannot otherwise preside over a case.

Appeals

Appeals from a water judge's decision are taken directly to the Montana Supreme Court.

FEDERAL & INDIAN RESERVED WATER RIGHTS**Compact
Commission**

The determination of federal and Indian reserved water rights is part of Montana's adjudication process. To facilitate the determination of these rights, the Montana Legislature created the Reserved Water Rights Compact Commission (RWRCC). The RWRCC is charged with the responsibility of negotiating settlement agreements reflecting all reserved rights in Montana. These settlement agreements are called compacts, and are typically entered between the State of Montana, the federal government, and the Indian tribes. There are seven Indian reservations within Montana.

The compacting process is an alternative to litigating reserved rights. Compacts have been successfully negotiated and approved for national parks, multiple Indian reservations, and numerous other federal reservations.

**Compact
Approval**

The Montana Water Court plays a unique role in the compact process. A compact negotiated and approved by the parties must also be approved by the Montana Legislature. In some cases, compacts must be approved by the United States Congress, and by the President of the United States.

**Standard
of Review**

Once the foregoing approvals have been obtained, the compact is submitted to the Water Court for incorporation into a special preliminary decree. That preliminary decree is subject to objections just like any other preliminary decree. The Water Court has adopted standards of review applicable to consent decrees when adjudicating objections to a compact.

The alternative to compacts is to litigate the claims for federal and Indian reserved rights through Montana's general adjudication process. The majority of federal and Indian reserved rights have been resolved by compacts as opposed to litigation in the Water Court.

[Editor's Note: The deadline to file claims for tribes and federal agencies in the Montana statewide stream adjudication was suspended until June 30, 2015 pending completion of negotiations by the RWRCC. The RWRCC has been involved in negotiations with the Confederated Salish and Kootenai Tribes (CSKT), whose home is the Flathead Indian Reservation in northwest Montana. A proposed CSKT compact was not ratified by the 2013 Montana Legislature.

The proposed CSKT-Montana Compact is the result of more than a decade of negotiations to resolve the Tribes claims to reserved rights within the State. Following a request for a limited reopening of negotiations by Governor Bullock in early 2014, the State and Tribes negotiated key provisions relating to irrigation use and instream flows on the Reservation and incorporated recommendations from the Montana Water Policy Interim Committee following two years of review.

On December 10, 2014, the negotiating parties reached an agreement that fulfills the State's legal obligation to recognize the CSKT's reserved rights and simultaneously provides protection for existing uses on and off the Reservation. According to RWRCC, the Compact will: make new water available for commercial and irrigation use; end the water administration void on the Flathead Reservation; allow for economic development under conditions of legal certainty on and off the Reservation; and facilitate the completion of the statewide general stream adjudication. In addition, the Compact would establish a technical team with irrigator representation to implement irrigation project upgrades to protect historic irrigation use and meet Tribal in-stream flow targets.

**Proposed
Compact**

Montana Adjudication

On January 12, 2015, the Montana Reserved Water Rights Compact Commission unanimously voted to forward the proposed CSKT Compact to the 2015 Legislature. Further information is available on the RWRCC website at: <http://dnrc.mt.gov/divisions/reserved-water-rights-compact-commission/confederated-salish-and-kootenai-tribes>; see also Weiner & Stermitz, *TWR* #114 (Aug. 15, 2013) and Water Briefs, *TWR* #132 (Feb. 15, 2015).]

NOTABLE CASES

Factual v. Legal Issues

The Water Court adjudicates thousands of claims every year. Many of the claims are straightforward and involve legal issues that are well settled, while the facts may be in dispute. However, the Water Court often encounters issues that are of first impression, or that require sifting through conflicting legal precedent. The following discusses cases that have addressed unsettled areas of Montana water law.

Evidence Standards

Admissibility of Ancient Documents

Several recent cases have turned on what documents are admissible as evidence of historical use. It is not uncommon for the Water Court to adjudicate water rights with priority dates in the 1870s or earlier. Thus, it is often impossible for parties to use witnesses to substantiate or challenge older water rights. The Montana Supreme Court recognized this problem over eighty years ago in *Allen v. Petrick*, 69 Mont. 373, 375 (1924).

Witnesses

The trial court was confronted with that condition which frequently appears in water suits where old rights are involved: all or nearly all of the settlers who did the original work are gone. Those who do appear are hampered with failing memories or are unable to dissociate fact from hearsay. Neighbors testify from impressions remaining after the lapse of years; much of their testimony is guesswork. Men who were boys when the things inquired about were being done appear, and their testimony is colored by the free fancies of boyhood which memory still retains. So the appellate as well as the trial court must do the best it can with what it has to work with.

Documentary Evidence

Where witness testimony is unavailable, parties must rely on documentary evidence. Several recent cases which have addressed the admissibility of such documents are now discussed.

Notice of Appropriation

Case 76HF-580 (issued January 31, 2013) concerned the admissibility of a notice of appropriation. The notice of appropriation relied on by the Claimants was filed in 1888 but described use of water beginning in 1883. The Master found the notice of appropriation inadmissible because it did not comply with Montana's statutes in effect when the notice was filed.

After deciding the notice of appropriation was inadmissible, the Master shifted the burden of proof from the Objectors to the Claimants and required the Claimants to submit alternative evidence to substantiate their 1883 priority date. The only evidence the Claimants could provide was testimony of water use beginning in 1945. As a result, the Claimants received a 1945 priority date for their rights.

The Claimants objected to the Master's Report, arguing that the notice of appropriation should have been admitted to support their 1883 priority date. The Water Court agreed, and amended the Master's Report to admit the notice of appropriation and amended the water rights to reflect an 1883 priority date.

Ancient Document Exception

The Montana Supreme Court (Court) held that the admissibility of notices of appropriation is governed by the Montana Rules of Evidence, not the case law which preceded those Rules. The Court found the notice of appropriation fit within the ancient document exception to the hearsay rule and could be admitted. Once admitted, the Court considered its weight and credibility and concluded that it supported an 1883 priority date. [Editor's Note: The "hearsay" rule requires that testimony or documents are not admissible as proof if they quote persons who are not in court; essentially, a witness must testify from their personal knowledge. This limitation is based on the rationale that the person who knew the facts is not in court to state his/her exact words, and the trier of fact can't judge the demeanor and credibility of the first-hand witness, plus the other party cannot cross-examine the witness.]

"Prima Facie" Effect

The Court also addressed whether it was correct to shift the burden of proof from the Objectors to the Claimants based on a defective notice of appropriation. As mentioned above, water right claims are deemed to be "prima facie" correct by statute, so the claim automatically meets the threshold of evidence necessary to establish the facts alleged and places the burden of proof on an objector to overcome that threshold. Because the Objectors had not provided evidence contradicting the priority date of the Claimants' rights, the burden of proof in that case should not have shifted.

The Water Court's decision in Case 76HF-580 established that defective notices of appropriation were not automatically inadmissible, and that, if admitted, their value should be weighed like any other document.

<div data-bbox="115 180 344 264">Montana Adjudication</div> <div data-bbox="164 302 295 369">Hierarchy of Rights</div> <div data-bbox="131 476 328 543">Notice of Appropriation</div> <div data-bbox="123 615 336 651">Types of Rights</div> <div data-bbox="134 825 324 858">Equal Footing</div> <div data-bbox="152 1001 306 1066">Historical Documents</div> <div data-bbox="136 1281 323 1314">Admissibility</div> <div data-bbox="159 1421 300 1486">Broad Discretion</div> <div data-bbox="128 1663 331 1696">Purpose of Use</div> <div data-bbox="147 1839 311 1873">Place of Use</div>	<div data-bbox="378 149 1104 174"> <p>No Hierarchy of Rights: Case 41O-209, Issued January 31, 2013</p> <p>Case 41O-209 was a companion case to Case 76HF-580. Case 41O-209 is notable because it includes a discussion concerning the difference between water rights based on historical use, notices of appropriation, and prior decrees.</p> <p>The Claimants in Case 41O-209 filed a claim with an 1874 priority date based on a notice of appropriation. The Objectors owned water rights on the same source as Claimants, but their rights were based on rights previously decreed by a District Court. In ruling on a motion for summary judgment, the Water Master found that admissibility of the Claimants' notice of appropriation should be determined at trial. The Master required the Claimant to provide other evidence to support their claimed priority date. The Claimants objected to the Master's decision.</p> <p>The Water Court again determined that defective notices of appropriation were not per se inadmissible and that the burden of proof does not shift from the Objector to the Claimant because of a defective notice. The decision issued in 41O-209 also offered some additional analysis concerning filed, use, and decreed water rights. That discussion was in response to the Objectors' argument that their decreed right was superior to other types of water rights.</p> <p>Pursuant to the Water Use Act, water right owners filed a Statement of Claim detailing the elements of their water rights. Claimants were asked to state whether their claim was a filed, use, or decreed right. A filed right is based on a notice of appropriation. A use right is based on historical use. Decreed rights result from a District Court order allocating water rights among adverse parties.</p> <p>In Case 41O-209, the Water Court stated there was no hierarchy among the three types of rights (filed, use, or decreed). The Water Court's mandate to "recognize and confirm" all rights does not automatically elevate one type of right over another. The Court noted that water right lawsuits resulting in decreed rights were not always comprehensive and frequently did not include all water users on a source. For these reasons, water rights that were previously decreed may, but do not always, have superior status to other water rights. Case 41O-209 confirms that decreed rights, filed rights, and use rights can have equal footing.</p> <p>Broad Discretion: <i>Skelton Ranch v. Pondera County Canal and Reservoir Co.</i> 2014 MT 167, 375 Mont. 327, 328 P.3d 644</p> <p>In Skelton, the Claimants appealed a decision of the Water Court to the Montana Supreme Court. One of the issues on appeal was whether the Water Master and the Chief Water Judge properly admitted historical documents prepared by Pondera County Canal and Reservoir Company (PCCRC). The Supreme Court affirmed the Water Court's decision to admit the documents.</p> <p>The documents of concern contained information about the capacity of a flume that conveyed the Claimants' water rights. The documents were prepared by PCCRC's predecessor during the early 1900s, when it was investigating water rights to determine the viability of purchasing land. All parties acknowledged that the documents generated by the investigation were created prior to anticipated litigation and contained self-serving declarations.</p> <p>The Claimants argued against the admissibility of PCCRC's documents, asserting the documents were created after controversy between the two parties had begun and that a motive for misrepresentation existed when the documents were created. The Montana Supreme Court found that documents created in anticipation of litigation are not categorically excluded, but must be individually examined to determine whether they bear circumstantial indicia of lack of trustworthiness.</p> <p>In affirming admissibility of the PCCRC documents, the Montana Supreme Court noted that both the Chief Water Judge and the Master referenced the scarcity of purely objective data in the record. The Chief Water Judge and the Master determined that the documents shed some historic light on the questions before the Court. The Montana Supreme Court found that the Water Court has broad discretion to determine the admissibility of evidence. The Master did not abuse his discretion and the Chief Water Judge was correct not to disturb the Master's admission of the evidence.</p> <p style="text-align: center;">Valid Beneficial Uses</p> <p>A water right claim must describe the purpose for which the water is being used. Irrigation, stockwatering, and domestic purposes have been recognized for decades as beneficial uses of water. However, recognition of water for other purposes has been controversial. The use of water for future sale, fish, wildlife, and recreation purposes has been the subject of several Water Court decisions, now discussed.</p> <p>Purpose and Place of Use: Case 76HE-166, Issued March 9, 2000</p> <p>In Case 76HE-166, also known as the Painted Rocks Decision, the Master recommended acceptance of a stipulation between the parties. The Master's Report did not receive any objections and was subsequently adopted by the Court. The Case is notable because it is often cited to support recognition of a "general service area" for DNRC claims.</p> <p>The DNRC filed four claims for the state Painted Rocks Reservoir Project. The Painted Rocks Reservoir Project is a state development created to store water for sale to water users. The DNRC claims</p> </div>
--	--

Montana Adjudication	<p>were filed for the purposes of irrigation, stock, storage, and fish and wildlife, which reflected the historical uses of water by the purchasing parties.</p>
“General Service Area”	<p>The claims received objections and notices of intent to appear from multiple parties. DNRC filed a motion to amend the claims to more accurately reflect the historic use of the claims. All parties reached an agreement that the purpose of the water rights should be changed to “sale” and the place of use should be described by a “general service area” encompassing the area where the water could feasibly be put to use. The Master approved the stipulation and the requested changes to the water rights were made. The effect of the Painted Rocks decision was to recognize a general service area for a right that encompassed lands not historically irrigated.</p>
Instream Claims	<p>Purpose of Use and Diversion: <i>Bean Lake III</i> 2002 MT 216, 311 Mont. 327, 55 P.3d 396</p> <p>In <i>Bean Lake III</i>, the Montana Supreme Court attempted to clarify prior decisions concerning whether fish, wildlife, and recreation were beneficial uses that could form the basis of a water right, and if so, whether a diversion was required for such rights. <i>Bean Lake III</i> arose from a Department of Fish, Wildlife and Parks (DFWP) appeal from a Water Court ruling that rejected claims for fish, wildlife, or recreational purposes.</p>
Diversion Requirement	<p>In <i>Bean Lake III</i>, the Supreme Court held that fish, wildlife, and recreation are beneficial uses. It also held that water rights for fish, wildlife, and recreation could be recognized without a diversion.</p>
Intent	<p>The Court stated that the common law elements of a prior appropriation were intent, notice, diversion, and application to beneficial use. However, it noted that the Prior Appropriation Doctrine required flexibility, and that beneficial use is a core principle of the appropriation doctrine.</p>
Instream Right	<p>In accordance with the Doctrine’s flexibility, the Supreme Court found that a diversion is not a requisite element of an appropriation when it is not a physical necessity for application of water to beneficial use. While diversion traditionally served the purpose of providing notice of a user’s intent, the Court held that intent could also be proved through other facts and surrounding circumstances.</p>
Standing	<p>In deciding whether a non-diversionary appropriation should be recognized under Montana law, the Court cited the Public Trust Doctrine and the 1972 Montana Constitution for the proposition that the public has an instream, non-diversionary right to the recreational use of the State’s navigable surface waters. The Court held that a water right could be recognized where a diversion was unnecessary to achieve the intended beneficial use.</p>
Public Rights	<p>Standing to Object: <i>Montana Trout Unlimited v. Beaverhead Water Co. et al.</i> 2011 MT 151, 361 Mont. 77, 255 P.3d 179</p> <p><i>Trout Unlimited</i> concerned standing to object to water right claims. Trout Unlimited (TU) was involved in mitigating impacts of low stream flows through conservation of habitat and flow restoration in the Big Hole River Basin. Although it did not own water rights in the Big Hole River, TU objected to water right claims it asserted were unsupported by historic beneficial use.</p> <p>The Water Court held that, though TU was entitled to receive notice of the decree, it could not object to any claims in the decree unless it demonstrated “good cause” by showing an ownership interest in water or its use that was affected by the decree. The Water Court determined that TU could not demonstrate good cause because it did not own water rights, and the Water Court dismissed TU’s objections for lack of standing. Trout Unlimited appealed the dismissal of its objections.</p> <p>The Montana Supreme Court reversed. The Supreme Court found that TU met the test of standing, which required the complaining party to allege past, present, or threatened injury, and to demonstrate that the alleged injury was distinguishable from injury to the public generally.</p> <p>The Court further explained that pursuant to the Montana Constitution and the Public Trust Doctrine, the public owns an instream, non-diversionary right to the recreational use of the State’s navigable surface waters. The State holds title to the surface waters of Montana for the benefit of its citizens, including members of TU. Therefore, a claim for a water right is not the only method of establishing an “ownership interest” in the use of water. On this basis, TU had standing to object.</p>
Fractured Jurisdiction	<p>MONTANA’S ADJUDICATION: CURRENT AND FUTURE CHALLENGES</p> <p>Despite early forecasts of swift completion, the adjudication process is now in its fortieth year. Assuming the presently estimated completion date of 2028 is accurate, the process will last a total of 55 years. The structure of the adjudication, and our water rights system as a whole, has not been adjusted to accommodate this multi-decade process.</p> <p>Two court systems and one agency are required to resolve water problems in Montana. This fractured jurisdiction over water issues creates a number of problems.</p>

Montana Adjudication

Change of Water Rights

Water Court & DNRC

Conflicting Decisions

Although existing water rights are defined by the Water Court, those rights are administered by District Courts. Because District Courts have heavy caseloads and often lack expertise with water rights, they rely on the Water Court to assist them with resolution of administration controversies. In many cases, two courts become involved in solving one problem.

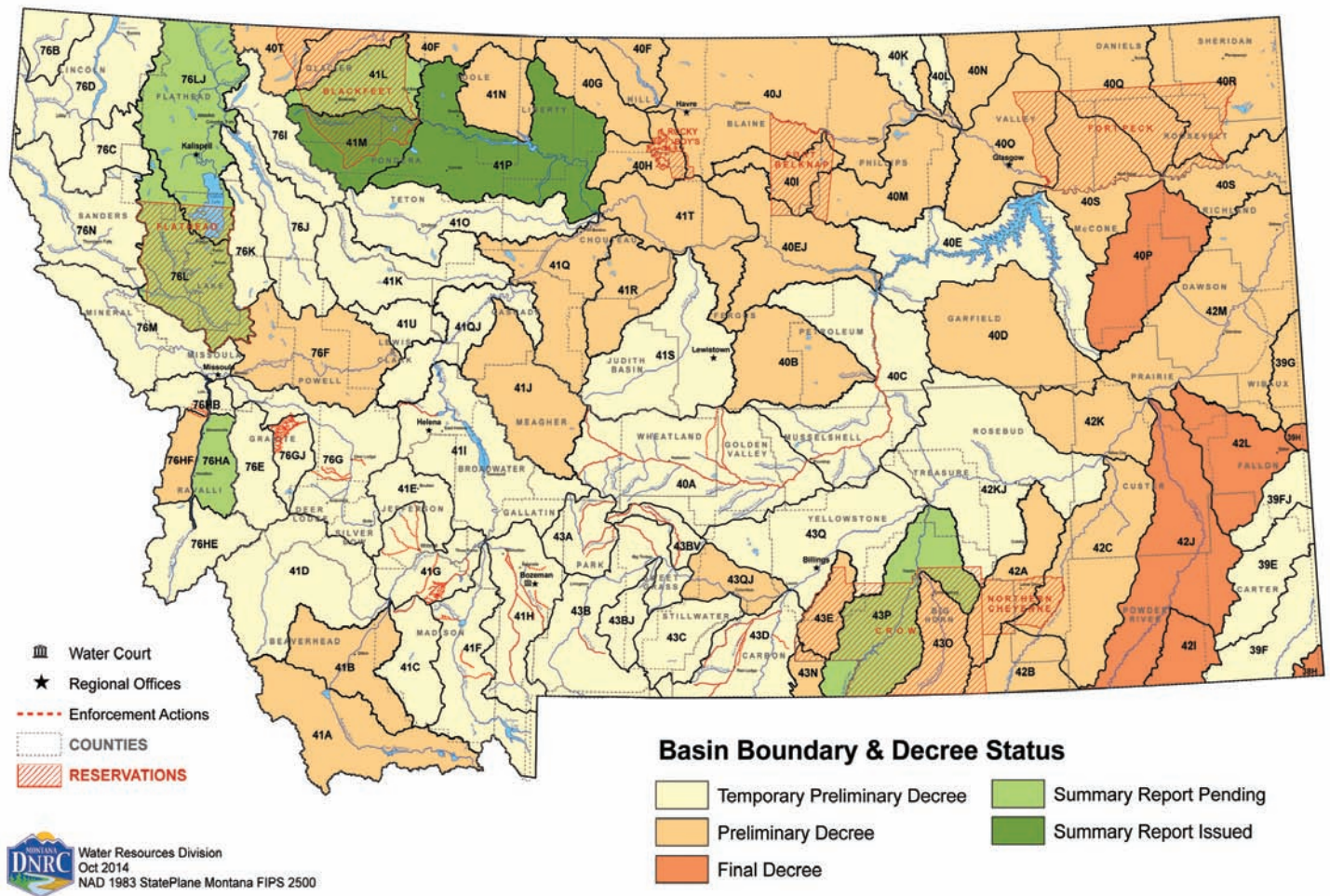
The split of jurisdiction over water rights extends beyond administration. With some exceptions, the Water Court generally has jurisdiction over water rights as they existed before July 1, 1973. Jurisdiction over post-1973 changes to those rights is the responsibility of the DNRC. Because of this rule, the Water Court cannot issue decrees that reflect water rights as they presently exist. This resulted in Water Court decrees that are decades out of date when they are issued. Amendments to those decrees are made by the DNRC, rather than the court in which they originated.

Many water rights change over time to accommodate changing agricultural practices, irrigation technology, ownership, division of land, and conversion from agricultural to other uses. Water users who want their rights to reflect current uses must interact with both the Water Court and the DNRC. These institutions have different rules, different personnel, and different cultures. Navigating these differences can be challenging, time consuming, and expensive. The involvement of two entities has created conflicting decisions regarding the same right.

These conflicting outcomes cost water users additional money and create uncertainty regarding the value and character of water rights. To complicate matters even further, appeals from DNRC decisions are made to District Courts rather than the Water Court, where the underlying claim originated. Once such an appeal is made, a third institution is involved in determining the fate of one property interest.

Basin Location and Adjudication Status

October 29, 2014



Montana Adjudication

Differing Jurisdictions

Legal Survey: Solutions

2028
Estimate

Because responsibility for defining, changing, and administering water rights is distributed across the Water Court, the DNRC, and the District Courts, some water users must appear before all three entities to resolve their problems. For example, a distribution controversy in the District Court can lead to the need for approval of a change application by the DNRC. Although the DNRC has jurisdiction over change applications, the underlying water right may first need to be defined by the Water Court before the change application can be processed. This means a transfer of the controversy from the DNRC to the Water Court is required. After the Water Court makes a determination regarding the underlying right, the water right goes back to the DNRC for a change application, and then back to the District Court where the original distribution controversy began.

This process is inefficient, costly, and time consuming. Each time a water right owner changes forums, he or she must re-educate a new hearing examiner or judge. Personnel turnover at an institution further complicates that process.

The Montana Supreme Court asked the University of Montana Law School to address these problems and recommend solutions. The University interviewed numerous water experts both inside and outside Montana, and undertook a comprehensive survey of water rights problem solving in the western states.

RECOMMENDED SOLUTIONS INCLUDED THE FOLLOWING:

- Give litigants the option of having the Water Court preside over both adjudication and distribution controversies. This would resolve both controversies in one proceeding, and avoid the difficulty of having water rights adjudicated in one court and administered in another.
- Allow the Water Court to issue decrees that reflect uses occurring at the time the decrees are issued.
- Allow decisions of the DNRC regarding water rights changes to be appealed to the Water Court. This would place the same court in charge of both defining pre-1973 rights and reviewing changes to those rights after 1973.
- Consider shifting responsibility for water rights administration away from District Courts to either the Water Court or the DNRC.

All of the changes recommended by the University of Montana law school require action by the Legislature. It remains to be seen whether the Legislature will address these issues. (For the University of Montana Law School study, *see* http://courts.mt.gov/content/water/UM_WaterRightsStudy.pdf).

CONCLUSION

In the meantime, Montana's adjudication process is proceeding more rapidly than before. Although thousands of cases remain to be decided, stakeholders in the process are beginning to see a flicker of light at the end of the tunnel. With the conclusion of the adjudication becoming a reality, it is time for the Legislature, the Water Court, and the stakeholders involved in the adjudication process to begin thinking about what happens when final decrees are issued and the process is complete.

FOR ADDITIONAL INFORMATION:

RUSS MCELYEA and MADELEINE WEISZ, Montana Water Court, 406/ 586-4364 or watercourt@mt.gov

MONTANA WATER COURT WEBSITE: <http://courts.mt.gov/water/default.mcp>

DNRC WATER ADJUDICATION WEBSITE: <http://dnrc.mt.gov/divisions/water/adjudication>

Russ McElyea is the Chief Water Judge for Montana. He received his law degree from the University of Colorado in 1989. Since then, he has practiced in Montana and served as CEO of a ski resort. He enjoys many of Montana's outdoor recreational activities.

Madeleine Weisz is a water master for the Montana Water Court. She earned her law degree from the University of California, Davis School of Law in 2014. During law school, she participated in the California Water Law Symposium as both a co-chair of the event and a panel co-chair. She is excited to be back in Montana, enjoying all the mountains have to offer.

Tribal Groundwater

Reserved Rights to Groundwater

Winters Doctrine

Tribal Claims

Recharge of Aquifer

Reserved Rights

Aboriginal Title

THE WINTERS DOCTRINE & TRIBAL GROUNDWATER

AGUA CALIENTE BAND OF CAHUILLA INDIANS V. COACHELLA VALLEY WATER DISTRICT ET AL.

by David Moon, Editor

On March 20, Judge Jesus Bernal of the US District Court, Central District of California issued an important decision recognizing that the Agua Caliente Band of Cahuilla Indians (Agua Caliente) has federally reserved rights to groundwater based on the *Winters* Doctrine. *Agua Caliente Band of Cahuilla Indians v. Coachella Valley Water District et al.*, No. EDCV-13-833-JGB (C.D. Cal. March 20, 2015). The Agua Caliente sued the Coachella Valley Water District (CVWD) and the Desert Water Agency (DWA; collectively, the Defendants), “seeking, among other things, a declaration that their federal reserved water rights, which arise under the doctrine of *Winters v. United States*, 207 U.S. 564 (1908), extend to groundwater.” *Slip Op.* at 1.

The *Winters* Doctrine is a body of law arising from the landmark *Winters* case. Judge Bernal’s order at page 5, provides an overview of the law of federal reserved water rights known as the *Winters* Doctrine. “For over a century, the Supreme Court has held that when the United States ‘withdraws its land from the public domain and reserves it for a federal purpose, the Government, by implication, reserves appurtenant water then unappropriated to the extent needed to accomplish the purpose of the reservation.’ *Cappaert v. United States*, 426 U.S. 128, 138 (1976) (citing U.S. Const. art. I, § 8; U.S. Const. art. IV, § 3); *see also Winters v. United States*, 207 U.S. 564 (1908); *John v. United States*, 720 F.3d 1214, 1225–26 (9th Cir. 2013); *Colville Confederated Tribes v. Walton*, 647 F.2d 42 (9th Cir. 1981); Felix S. Cohen et al., *Cohen’s Handbook of Federal Indian Law* § 19.03 (2012 ed.) (“Cohen’s Handbook”); 1 *Waters and Water Rights* § 37.02 (Amy K. Kelley ed., 3d ed. 2015). Impliedly reserved water rights ‘vest[] on the date of the reservation and [are] superior to the rights of future appropriators.’ *Id.* *Winters* rights arise under federal law, and are thus an exception to the normal rule that assigns water resources regulation to the states. *United States v. New Mexico*, 438 U.S. 696, 701–02 (1978); *Cappaert*, 426 U.S. at 145; *Cohen’s Handbook* § 19.03[1].”

Agua Caliente, represented by the Native American Rights Fund, asked the Court to declare the existence of the Tribe’s water rights as the senior rights in the Coachella Valley under federal law, to quantify those rights, and to prevent CVWD and DWA from further injuring the Tribe, its members and residents in surrounding communities by impairing the quantity and quality of water in the aquifer. “The Agua Caliente claim the ‘establishment of the Reservation pursuant to federal law impliedly reserved to the Tribe and its members the right to surface water and groundwater sufficient to accomplish the purposes of the reservation, including establishing a homeland for the Tribe and its members.’ In the Tribe’s view, those reserved rights ‘are the most senior’ in the region, and, accordingly, the Agua Caliente may prevent CVWD and DWA from adversely affecting the quantity and quality of their water.” *Id.* at 2 (citations omitted). The Agua Caliente’s reservation was created by a series of seven federal Executive Orders, dating from 1865–1881.

“The Tribe’s pleading further states the groundwater underlying the Coachella valley is in a continual state of ‘overdraft,’ which means the outflows from the aquifer exceed the inflows. The CVWD tries to recharge the Coachella valley’s groundwater by importing water from the Colorado River, but the Tribe alleges that water is of inferior quality.” *Id.* (citations omitted). A crucial fact at play in this case, which is undisputed, is that the groundwater the parties are fighting over is *not* hydrologically connected to the Reservation’s surface water. The injury alleged by the Agua Caliente is based on its assertion that the water districts (Defendants) import water from the Colorado River and then fail to adequately treat that lower quality water before injecting it into the aquifer. According to Agua Caliente, the recharge water, which contains higher total dissolved solids, nitrates, pesticides, and other contaminants, is reinjected into the Coachella Valley aquifer at a facility close to the Tribe’s lands.

The case was divided into three phases. Phase I — which this decision addressed — involved the “primarily legal questions regarding the existence of (1) the Agua Caliente’s federal reserved rights to groundwater under the *Winters* doctrine, and (2) the Tribe’s aboriginal rights to groundwater.” *Id.* at 3. Ruling on summary judgment motions by the parties, Judge Bernal held that “...the Court (1) GRANTS partial summary judgment to the Agua Caliente and the United States on the claim that the government impliedly reserved appurtenant water sources — including underlying groundwater — when it created the Tribe’s reservation; and (2) GRANTS partial summary judgment to Defendants regarding the Tribe’s aboriginal title claims because the Land Claims Act of 1851, as interpreted by the Supreme Court, effectively extinguished any such right.” *Id.* at 14. Quantification of the amount of water reserved for Agua Caliente’s use is not involved in this phase of the case.

Tribal Groundwater	<p>The court's reasoning for its decision that Agua Caliente has federal reserved rights to groundwater under the <i>Winters</i> Doctrine is clearly the most important part of the decision. Judge Bernal began the section concerning the federal reservation of rights with a succinct summary, essentially finding there is no distinction between groundwater and surface water for a federal reserved right for an Indian reservation. "When Presidents Grant and Hayes withdrew portions of the Coachella valley from the public domain by Executive Order to create the Agua Caliente's reservation, they also reserved, by implication, the right to appurtenant water in the amount necessary 'to fulfill the purposes of the reservation.' Cf. <u>Walton</u>, 647 F.2d at 46-47. No case interpreting <u>Winters</u> draws a principled distinction between surface water physically located on a reservation and other appurtenant water sources. See, e.g., <u>Cappaert</u>, 426 U.S. at 143; see also Cohen's Handbook §19.03[2][a] ('Reserved rights presumably attach to all water sources — groundwater, streams, lakes, and springs — that arise on, border, traverse, underlie, or are encompassed within Indian reservations.'). Instead, the relevant legal constraints under <u>Winters</u> and its progeny are whether (1) the reserved water is necessary to fulfill the purposes of the reservation and (2) the reserved water is appurtenant to the reserved land. <u>Walton</u>, 647 F.2d at 46." <i>Id.</i> at 7.</p>
No Distinction	<p>Judge Bernal continued this line of reasoning, focusing on the water law principle of "appurtenancy." "Any attempt to limit appurtenant water sources to surface water fails as a matter of law and logic. For example, California law recognizes that groundwater rights are inextricably linked to the overlying land. See <u>City of Barstow v. Mojave Water Agency</u>, 23 Cal. 4th 1224, 1240 (2000) ('An overlying right, analogous to that of a riparian owner in a surface stream, is the right of the owner of the land to take water from the ground underneath for use on his land within the basin or watershed; the right is based on ownership of the land and is appurtenant thereto.') (internal quotation marks omitted). And federal law, at least by implication, treats surface water and groundwater similarly." <i>Slip Op.</i> at 7.</p>
Appurtenant Source	<p>The court wrapped up this discussion by tying together intent and appurtenancy, but then also notes an issue that remains for the next phase of the case. "The federal government intended to reserve water for the Tribe's use on its reservation. Rights to the groundwater underlying the reservation are appurtenant to the reservation itself. Accordingly, the Court concludes the federal government impliedly reserved groundwater, as well as surface water, for the Agua Caliente when it created the reservation. Whether groundwater resources are necessary to fulfill the reservation's purpose, however, is a question that must be addressed in a later phase of this litigation." <i>Id.</i> at 8. The court, however, also noted its view of the reservation's purpose: "The reservation's purposes remain the same as when the government created the reservation — to provide the Agua Caliente with a permanent homeland." <i>Id.</i> at 10.</p>
Government Intent	<p>On March 30th, CVWD and DWA filed an appeal of the court's ruling by filing a "Petition for Permission to Appeal" with the US Court of Appeals for the Ninth Circuit. In the appeal, the Defendants assert that the Agua Caliente has no federal reserved right in groundwater. As noted by the Defendants in their Petition at page 14, "[T]he question is novel because neither the Supreme Court nor any federal appellate court has held that the federal reserved rights doctrine applies to groundwater."</p>
Homeland Purpose	<p>The Defendants appear to be basing their appeal primarily on the assertion that the Tribe, like all water users in California has a "correlative right" to use groundwater, and no federal reserved right. "In arguing that the Tribe does not have a reserved right in groundwater, the water agencies argued...that the Tribe has a 'correlative right' to use water under California law and thus has the same right to use groundwater as all other overlying landowners in California; therefore, the Tribe's claimed federal reserved right in groundwater is not 'necessary' to accomplish the primary reservation purpose and prevent this purpose from being 'entirely defeated,' and thus does not 'impliedly' exist under the Supreme Court's decision in <i>New Mexico [United States v. New Mexico]</i>, 438 U.S. 696 (1978)." <i>Petition</i> at 8.</p>
Novel Issue	<p>The importance of this case is summed up from the Defendants' perspective in their Petition. "The question is important, because — if the federal reserved rights doctrine applies to groundwater — a substantial portion of the water supplies of the western states would be subject to federal regulation and control, which would limit the western states' authority to manage and regulate their groundwater supplies and would jeopardize the rights of entities and persons who have long relied on their state-based rights in producing groundwater." <i>Id.</i> at 15-16. The Agua Caliente, on the other hand, view this decision as supporting recognition of the Tribe's rights to use groundwater in the Coachella Valley and its interest in responsible management of the aquifer.</p>
"Correlative Right"	
Groudwater Control	
<p>FOR ADDITIONAL INFORMATION: DECISION available at: www.aguacaliente.org/downloads/Water-Decision_03202015.pdf; PETITION FOR APPEAL available upon request from TWR: TheWaterReport@yahoo.com</p>	

Position Opening

Director of Natural Resources – State of Nebraska

The Director of the Department of Natural Resources shall be qualified by training and business experience to manage and supervise the Department. The Director shall be a professional engineer as provided in the Engineers and Architects Regulations Act and have at least five years of experience in a position of responsibility in irrigation work.

The Department serves as the official agency of the state in connection with water resources development, soil and water conservation, flood prevention, watershed protection and flood control. The Department plans, develops and promotes the implementation of integrated management plans and state water planning in cooperation with other local, state and federal agencies and organizations. The Department administers the state's dam safety and flood plain management programs.

For inquiries, please contact: Lana Gillming-Weber: 402/ 471-2244 or lane.gillming-weber@nebraska.gov.

HYDRAULIC FRACTURING US INTERIOR'S RULE RELEASED

On March 20, US Secretary of the Interior Sally Jewell released final standards designed to support safe and responsible hydraulic fracturing on public and American Indian lands. According to Jewell, the common sense standards will improve safety and help protect groundwater by updating requirements for well-bore integrity, wastewater disposal, and public disclosure of chemicals.

There are more than 100,000 oil and gas wells on federally managed lands. Of wells currently being drilled, over 90% use hydraulic fracturing. The rule applies only to development on public and tribal lands and includes a process so that states and tribes may request variances from provisions for which they have an equal or more protective regulation in place. This will enable the development of more protective standards by state and tribal governments. Other reforms include measures to target where oil and gas leasing occurs to protect sensitive areas. The rules were published in the Federal Register on March 26th and go into effect 90 days after publication.

The purposes for the Final Rule were summarized in the Federal Register: "Rapid expansion of this practice and its complexity have caused public concern about whether fracturing can lead to or cause the contamination of underground water sources, whether the chemicals used in fracturing pose risks to human health, and whether there is adequate management of well integrity and the fluids that return to the surface during and after fracturing operations." BLM's regulations that address hydraulic fracturing are at least 25–30 years old, and pre-date the current common use of this process.

The final rule was hailed by Interior as supporting a balanced, prosperous

energy future. Several groups, however, maintain that the rule doesn't go nearly far enough, with some calling for a total ban on fracking. Meanwhile, oil and gas industry organizations criticized the rules for being unnecessary regulation.

Key components of the rule include: provisions for ensuring the protection of groundwater supplies by requiring a validation of well integrity and strong cement barriers between the wellbore and water zones through which the wellbore passes; increased transparency by requiring companies to publicly disclose chemicals used to the Bureau of Land Management (BLM) through the website FracFocus, within 30 days of completing fracturing operations; higher standards for interim storage of recovered waste fluids to mitigate risks to air, water and wildlife; measures to lower the risk of cross-well contamination with chemicals and fluids used in the fracturing operation, by requiring companies to submit more detailed information on the geology, depth, and location of preexisting wells to afford BLM an opportunity to better evaluate and manage unique site characteristics. FracFocus is managed by the Ground Water Protection Council, a non-profit organization of state water quality regulatory agencies, and by the Interstate Oil and Gas Compact Commission, a multi-state government agency charged with balancing oil and gas development with environmental protection.

BLM oversees about 700 million subsurface acres of federal mineral estate and carries out regulatory duties of the Secretary of the Interior for an additional 56 million acres of Indian mineral estate across the US. The Indian Mineral Leasing Act and other laws require that Indian lands and communities have the same protections as US public lands. BLM estimates that the rule will impact about 2,800

hydraulic fracturing operations per year, but that it could impact up to 3,800 operations per year based on previous levels of activity on Federal lands and growing activity on Indian lands. BLM estimates that the compliance cost will be about \$11,400 per well, or about \$32 million per year. On average this equates to approximately 0.13 to 0.21 percent of the cost of drilling a well.

The provision regarding disclosure of the chemicals used in the fracking process allows for "limited exceptions" to disclosure "for material demonstrated through affidavit to be trade secrets." The Final Rule notes that "more stringent requirements related to claims of trade secrets exempt from disclosure" are one of the "key changes" to the rule. "However, because the identities of some chemicals may be entitled to protection under Federal law as trade secrets, the BLM is allowing that information to be withheld if the operator and any other owner of the trade secret submit affidavits containing specific information explaining the reasons for the claim for protection. If the BLM has questions about the validity of the claim for protection, the BLM can require the operator to provide the withheld information to the bureau, and then would make a determination as to whether the data is properly withheld from the public."

Another area of dispute that attracted intense criticism recently involves the practice of storing "produced water." The Final Rule "will require interim storage of all produced water in rigid enclosed, covered, or netted and screened above-ground tanks, subject to very limited exceptions in which lined pits could be used."

For info: Final Rule available at: www.gpo.gov/fdsys/pkg/FR-2015-03-26/pdf/2015-06658.pdf; FracFocus at: <http://fracfocus.org/>; Steven Wells, BLM Division Chief, 202/ 912-7143

WATER BRIEFS

FRACKING RISKS

US

EPA REPORT

Congress asked EPA to embark on a major effort to advance the state-of-the-science to accurately assess and identify fracking risks. On April 1, EPA released a new report to provide a fuller picture of the information available for states, industry, and communities working to safeguard drinking water resources and protect public health. *The Analysis of Hydraulic Fracturing Fluid Data from the FracFocus Chemical Registry 1.0* is a peer-reviewed analysis built on more than two years of data provided by organizations that manage FracFocus (a voluntary fracking chemical disclosure registry, *see* www.fracfocus.org/). Operators disclosed information on individual oil and gas production wells hydraulically fractured between January 2011 and February 2013 and agency researchers then compiled a database from more than 39,000 disclosures. **For info:** www2.epa.gov/hfstudy/epa-analysis-fracfocus-1-data

WATER RESTRICTIONS

CA

MANDATORY USE REDUCTIONS A FIRST

Following the lowest snowpack ever recorded (April 1st snowpack report), and with no end to the drought in sight, on April 1st Governor Edmund G. Brown Jr. announced an executive order that will save water, increase enforcement to prevent wasteful water use, streamline the state's drought response, and invest in new technologies to make California more drought resilient.

For the first time in California history, the Governor has directed the State Water Resources Control Board (SWRCB) to implement mandatory water reductions in cities and towns across California to reduce potable urban water usage by 25%. The order also requires that these "restrictions should consider the relative per capita water usage of each water suppliers' service area, and require that those areas with high per capita use achieve proportionally greater reductions than those with low use." This savings amounts to approximately 1.5 million acre-feet of water over the next nine months.

The order will also: replace 50 million square feet of lawns throughout

the state with drought tolerant landscaping in partnership with local governments ("provide funding to allow for lawn replacement programs in under-served communities"); direct the creation of a temporary, statewide consumer rebate program to replace old appliances with more water and energy efficient models; require campuses, golf courses, cemeteries and other large landscapes to make significant cuts in water use; and prohibit new homes and developments from irrigating with potable water unless water-efficient drip irrigation systems are used, and ban watering of ornamental grass on public street medians.

Governor Brown's press release also mentioned the need to increase enforcement against water waste as an area requiring more attention. The Governor's order calls on local water agencies to adjust their rate structures to implement conservation pricing, recognized as an effective way to realize water reductions and discourage water waste. Meanwhile, agricultural water users — who Governor Brown specifically noted have borne much of the brunt of the drought to date, with hundreds of thousands of fallowed acres, significantly reduced water allocations and thousands of farmworkers laid off — will be required to report more water use information to state regulators, increasing the state's ability to enforce against illegal diversions and waste and unreasonable use of water under today's order. Additionally, the Governor's action strengthens standards for Agricultural Water Management Plans submitted by large agriculture water districts and requires small agriculture water districts to develop similar plans. These plans will help ensure that agricultural communities are prepared in case the drought extends into 2016.

Perhaps the most notable provision in the executive order dealt with enforcement actions against illegal diverters: "The Water Board shall require frequent reporting of water diversion and use by water right holders, conduct inspections to determine whether illegal diversions or wasteful and unreasonable use of water are occurring, and bring enforcement actions against illegal diverters and those engaging in the wasteful and unreasonable use of water. Pursuant to Government Code sections

5870 and 8627, the Water Board is granted authority to inspect property or diversion facilities to ascertain compliance with water rights laws and regulations where there is cause to believe such laws and regulations have been violated. When access is not granted by a property owner, the Water Board may obtain an inspection warrant pursuant to the procedures set forth in Title 13...of part 3 of the Code of Civil Procedure for the purposes of conducting an inspection pursuant to this directive." (Section 10, Executive Order).

Additional actions required by the order include: taking action against water agencies in depleted groundwater basins that have not shared data on their groundwater supplies with the state; updating standards for toilets and faucets and outdoor landscaping in residential communities and taking action against communities that ignore these standards; and making permanent monthly reporting of water usage, conservation, and enforcement actions by local water suppliers.

The order takes other steps designed to streamline government responses on drought-related action. State review and decision-making of water infrastructure projects are prioritized and state agencies are required to report to the Governor's Office on any application pending for more than 90 days. Permitting and review of emergency drought salinity barriers — necessary to keep freshwater supplies in upstream reservoirs for human use and habitat protection for endangered and threatened species — are being streamlined. The order also simplifies the review and approval process for voluntary water transfers and emergency drinking water projects. State departments are being directed to provide temporary relocation assistance to families who need to move from homes where domestic wells have run dry to housing with running water.

The press release also mentioned the push to incentivize promising new technology that will make California more water efficient through a new program administered by the California Energy Commission.

The full text of the executive order can be found at http://gov.ca.gov/docs/4.1.15_Executive_Order.pdf.

For info: Additional information available at: Drought.CA.Gov

WATER BRIEFS

WATER CONSERVATION CA
EXPANDED EMERGENCY REGULATIONS

The California State Water Resources Control Board (SWRCB) on March 17th adopted an expanded emergency regulation to safeguard the state's remaining water supplies. The new regulation continues to give urban water suppliers flexibility that reflects their local conditions as long as they meet the minimum requirements. SWRCB strongly encourages water suppliers to do much more than the minimum required by the regulation. "If the drought continues through next winter and we do not conserve more — the consequences could be even more catastrophic than they already are," SWRCB Chair Felicia Marcus said. "Today's action is just a tune-up and a reminder to act, and we will consider more significant actions in the weeks to come."

The prohibitions on potable water use (first adopted in 2014) will continue, and new prohibitions will go into effect. All Californians are now prohibited from: washing down sidewalks and driveways; watering outdoor landscapes in a manner that causes excess runoff; washing a motor vehicle with a hose, unless the hose is fitted with a shut-off nozzle; operating a fountain or decorative water feature, unless the water is being recirculated; and irrigating turf or ornamental landscapes during and 48 hours following measurable precipitation.

New prohibitions affecting commercial businesses include: restaurants and other food service establishments can only serve water upon request; and hotels and motels must provide guests with the option of choosing not to have towels and linens laundered daily and prominently display notice of this option.

The biggest change for urban water suppliers is the creation of a minimum standard for outdoor irrigation restrictions. Urban water suppliers must now limit the number of days per week that customers can irrigate outdoors. The limit must either be specified in their drought contingency plans; or if their plan contains no specific limit, irrigation is limited to no more than two days per week. Water agencies will also be required to notify customers when they are aware of leaks that are

within the customer's control. Finally, monthly reporting requirements will be expanded to include the limit on days for outdoor irrigation and a description of compliance and enforcement efforts. For smaller water suppliers, the expanded regulation clarifies that if they choose to implement alternate mandatory measures, in lieu of limiting outdoor irrigation to twice a week, those measures should be designed to achieve a 20% reduction in water consumption (*see also* Governor Brown's April 1st executive order regarding new mandatory restrictions).

Local agencies can fine property owners up to \$500/day for failure to implement conservation requirements and the State Water Board can issue cease and desist orders against water agencies that don't impose mandatory conservation measures upon their retail customers. Water agencies that violate cease and desist orders are subject to civil liability of up to \$10,000 a day.

For info: Emergency Water Conservation website at: www.swrcb.ca.gov/waterrights/water_issues/programs/drought/emergency_regulations_waterconservation.shtml

WATER PURCHASES CA
TRANSFERS FROM AGRICULTURE

On March 10, the Metropolitan Water District's Board of Directors (Board) voted to enter the water market and bolster the region's available supplies by authorizing up to \$71 million to secure up to 100,000 acre-feet of additional supplies through one-year water transfers from a consortium of sellers (water districts) in the Feather River region of the Sacramento Valley. An acre-foot of water is nearly 326,000 gallons. This year market transfers will represent less than 5 percent of Metropolitan Water District of Southern California's (Metropolitan's) overall deliveries. Compared to overall water use in Southern California of about 4 million acre-feet, these transfers at the very most will meet less than 2 percent of overall demand. Metropolitan is a cooperative of 26 cities and water agencies serving nearly 19 million people in six counties in California. The district imports water from the Colorado River and Northern California

to supplement local supplies.

Metropolitan negotiated this potential transfer from the Sacramento Valley as part of a broader buyer's group. Fellow buyers include water agencies in Napa County, Silicon Valley and Kern County. This buyers' consortium is a reflection of how water agencies throughout California are trying to manage through the drought in a spirit of partnership. This potential transaction is largely dependent on the Sacramento Valley sellers receiving their full supply this year so that some water is available for transfer. However, a historically dry start to March is decreasing prospects that much of the proposed transfer will even take place due to a lack of water, according to General Manager Jeffrey Kightlinger.

Metropolitan's expected deliveries from Northern California through the State Water Project (SWP) are currently projected at 20%. The SWP typically provides about a third of the Southland's water. Meanwhile, storage in the district's other supply source — the Colorado River — stands at less than 50% of capacity after 15 drought years in the Southwest.

The Board also approved the selection of a Los Angeles-based advertising firm to continue to aggressively promote region-wide conservation in 2015 and maintain water reserves for future years. The Board awarded Quigley-Simpson & Heppelwhite, Inc. a \$5.5 million contract to work with Metropolitan in developing a comprehensive, culturally diverse, multimedia advertising and outreach campaign that carries an urgent call for Southern Californians to continue reducing water use. The campaign, to be coordinated with Metropolitan's 26 member public agencies, will encourage consumers and businesses to make water conservation and water awareness a permanent part of the Southern California lifestyle. Kightlinger said the campaign will supplement Metropolitan's ongoing conservation programs, including the \$100 million in rebates for water-saving appliances and landscape improvements approved by the Board since Governor Brown's emergency drought declaration last year.

For info: Bob Muir, Metropolitan, 213/217-6930 or www.mwdh2o.com/

WATER BRIEFS

**PHOSPHORUS REMOVAL MA
WATERSHED APPROACH**

In March, EPA's Office of Water published a case study entitled "Six Municipalities, One Watershed: A Collaborative Approach to Remove Phosphorus in the Assabet River Watershed." The case study concerned a consortium of four wastewater treatment facilities along the Assabet River in Massachusetts (serving six municipalities) that selected four different phosphorus removal technologies and successfully lowered effluent concentrations to less than 0.1 milligrams per liter of phosphorus. As a result, phosphorus loads to the river have decreased more than 90% at times and water quality has improved.

The four wastewater treatment facilities (WWTFs) in Hudson, Marlborough, Maynard, and Westborough and the six Massachusetts communities they serve partnered to develop and implement phosphorus removal strategies. Their goal was to improve water quality in the Assabet River by reducing phosphorus loads on a watershed scale. After years of joint planning and collaboration with state and federal agencies, each facility analyzed the most important factors (such as operational concerns, footprint and flexibility) influencing the decision about which technology would work best for its particular site characteristics. Each WWTF selected a different phosphorus removal technology, which was implemented with other facility improvements.

The portion of the upgrade costs due to phosphorus removal improvements is difficult to separate from the total cost and can vary significantly based on how the costs are allocated. Three of the four facilities estimated the phosphorus removal upgrade to cost from 4 to 25 million dollars. After the upgrades, all WWTFs have been meeting effluent limits of 0.1 milligrams per liter (mg/L) on a 60-day rolling average, representing over 90% reduction in total phosphorus loads to the river from April through October. The facilities are also meeting effluent limits of 1 mg/L the rest of the year. This case study describes the joint efforts of the WWTFs and key elements of each WWTF's improvements, and provides a summary of lessons

learned for use by other watersheds and communities seeking to work together to improve water quality. It also provides a summary of the significant water quality improvements measured in the Assabet River from 1995 through 2013.

For info: Case Study available at: www2.epa.gov/sites/production/files/2015-03/documents/assabet-river-removal-casestudy.pdf

**SALMON RECOVERY WA
REPORT RELEASED**

According to a new report released by the Washington Governor's Salmon Recovery Office on February 24, salmon recovery efforts in Washington are making a difference with more salmon returning home in some areas. The *State of Salmon in Watersheds Executive Summary* and interactive website show Washington's progress in trying to recover the 15 populations declared as at risk of extinction by the federal government and listed under the Endangered Species Act. The website puts online live data from many sources around the state and offers interactive story maps from efforts statewide.

Answering the question — "Are Wild Salmon Increasing in Numbers?" — the Report concludes: "The answer is mixed. In some areas of the state, fish are approaching abundance goals. However, in most areas of the state, fish are below their abundance goals with mixed trends from increasing to decreasing." In regard to water quality, the "overall quality" of Washington's "water, not considering toxics has improved slightly since 1992." The Report also notes that "[G]reat progress has been made in fixing barriers to fish passage." Report at 5-6.

The Report highlights that nearly half of the 15 salmon populations are increasing. With flow in streams important for keeping water cool for salmon, measurements of the amount of water in streams and rivers show that the majority of the monitoring stations assessed have stable or increasing flows. Reporting on the Washington Department of Fish and Wildlife's hatchery programs shows that 75% of the programs meet or are expected to meet scientific standards

to ensure conservation of wild salmon and steelhead, compared with only 18% of hatcheries meeting those standards in 1998. The Report also noted that shoreline armoring in Puget Sound, through bulkheads and riprap, is increasing at a rate of about a mile a year. This substantially exceeds the amount of shoreline being restored. Hardening shorelines deprives young salmon of food and shelter.

The Governor's Salmon Recovery Office reports that salmon recovery work has created nearly 7,500 jobs and generated \$763 million in economic activity since 1999. Most of that money (80%) stays in the county where the restoration work occurred, which is a big help to the economies of rural communities.

As far as the cost of salmon recovery is concerned, the Report asserts that the "investment provides multiple benefits for fish, people, business, and the environment." It then goes on to point out that since 1999, "the Salmon Recovery Funding Board and the Recreation and Conservation Office have distributed more than \$1 billion for salmon recovery from state, local, and federal sources." *Id.* at 8.

For info: Report available at: www.rco.wa.gov/documents/gro/2014StateofSalmonExecSummary.pdf; Susan Zemek, RCO, 360/ 902-3081 or susan.zemek@rco.wa.gov

**RECYCLED WATER RULES NM
PRODUCED WATER REUSE**

The New Mexico Oil Conservation Commission adopted a new rule on March 13 that will allow the industry to reuse drilling wastewater. The new rule is designed to reduce the oil and gas industry's freshwater consumption by promoting recycling and reusing "produced water." Produced water is a byproduct of oil and gas exploration and production that is typically discarded, requiring more freshwater to complete future projects. This new rule provides requirements for the storage and use of recycled water in oil and gas production which could lead to producers using 100% recycled water on projects and preserving freshwater. The rule provides for "recycling facilities" and "recycling containments" and

WATER BRIEFS

establishes requirements that protect freshwater, public health and the environment, according to the New Mexico Energy, Minerals and Natural Resources Department (Department).

“These common-sense guidelines will reduce fresh water consumption by the industry which makes sense both environmentally and economically,” said Secretary David Martin, head of the Department. “We’re proud to have worked with many partners on this new rule which we believe will save New Mexico’s freshwater while still providing resources for oil and gas production in our state.”

The Department’s press release noted that several oil producers in New Mexico have taken the initiative to recycle produced water in their operations, but this new rule gives those operators a stable regulatory environment to use recycled water. “These rules are designed to not only save freshwater, but could also save dollars the industry currently spends on the transportation of water in production areas.”

The new rule, Title 19, Chapter 15, Part 34 of the New Mexico Administrative Code was approved after a public hearing before the Oil Conservation Commission and will become effective on March 31, 2015.

For info: Beth Wojahn, Department, 505/ 476-3226, beth.wojahn@state.nm.us or www.emnrd.state.nm.us

TRIBAL WATER NV/WEST

SHOSHONE-PAIUTE SETTLEMENT SIGNED

US Secretary of the Interior Sally Jewell, on behalf of the United States, signed an agreement on February 27 guaranteeing the water rights of the Shoshone-Paiute Tribes in Nevada and ensuring water supplies and facilities for their Duck Valley Reservation.

The agreement is a crucial step towards a fully enforceable and final settlement, which will free up \$60 million in funding authorized for the Shoshone-Paiute to develop water resources and rehabilitate the Bureau of Indian Affairs irrigation project serving the Duck Valley (Shoshone-Paiute) Indian Reservation.

The Secretary’s signature provides final Federal approval of the Shoshone-Paiute agreement, first authorized as part of the Omnibus Public Land Management Act of 2009 signed into law in March 2009. The agreement specifies the Tribes’ rights and how they relate to non-Indian water users on the East Fork of the Owyhee River, and provides for tribal water development projects. It authorizes \$60 million for water-related uses, which was fully appropriated in previous fiscal years.

In addition to irrigation, other possible uses for the funds include protection of cultural resources and fish and wildlife resources, tribal community water and sewer facilities, water quality testing and economic development projects.

The Duck Valley Indian Reservation straddles the Idaho-Nevada border. Its 294,000 acres are almost evenly divided between tribal land within southern Owyhee County, Idaho, and northwestern Elko County, Nevada. The East Fork of the Owyhee River traverses the Reservation from the south to the north before joining the Snake River in southern Idaho. The agreement covers water rights relating to the Nevada half of the reservation; Idaho rights were previously settled. In addition to the Shoshone-Paiute agreement signed today, five other tribal water agreements executed since 2009 include:

- July 30, 2013: The White Mountain Apache Tribe Water Quantification provisions of the 2010 Claims Resolution Act that settled the White Mountain Apache Tribe’s claims to both the Gila and the Little Colorado Rivers in Arizona. The agreement provides funding for design and construction of a domestic water delivery system on the Reservation and provides water certainty for the City of Phoenix, the Salt River Project, and other downstream water users.
- March 14, 2013: The Aamodt Water Rights Settlement resolved water rights to the Rio Pojoaque Basin north of Santa Fe, New Mexico which is the homeland of the Tesuque, Nambe, Pojoaque and San Ildefonso Pueblos. Secretary Salazar and

Assistant Secretary for Indian Affairs Kevin Washburn joined leaders of the four tribes and New Mexico Governor Susanna Martinez at the Santa Fe Indian School to execute and celebrate the agreement. It provided finality to the Pueblos’ water rights and certainty for non-Indian water rights in north central New Mexico. This settlement also was contained in the 2010 Claims Resolution Act.

- July 11, 2012: Three water contracts were executed as part of implementation of the Taos Pueblo Indian Water Rights Settlement provisions of the 2010 Claims Resolution Act. The settlement included the Taos Pueblo, the State of New Mexico, the Town Of Taos, various non-Indian water users and the United States. Provisions relating to this settlement in the 2010 law resolve water rights disputes in the Rio Pueblo de Taos and Rio Hondo stream systems in New Mexico.
- April 27, 2012: The Crow Tribe Water Rights Settlement gave final federal approval to provisions of the 2010 Claims Resolution Act settling all of the Crow Tribe’s claims to water in the State of Montana. This compact provided funding for design and construction of a rural water system on the Crow Reservation and for rehabilitation and improvement of the Crow Irrigation Project, while also providing for administration and current and future use of water by all Indian and non-Indian water users on the Reservation.
- December 17, 2010: The San Juan Navajo Water Rights included Northwestern New Mexico Rural Water Projects Settlement provisions of the Omnibus Public Land Management Act of 2009, settling the water rights claims of the Navajo Nation in the San Juan River system in New Mexico in exchange for construction of a large municipal and industrial water delivery system to provide water to eastern portions of the Navajo Reservation and adjacent communities.

For info: Shoshone-Paiute Tribes Settlement available at: www.govtrack.us/congress/bills/110/hr5293/text

April 14-17 TX

TEXAS WATER 2015, Corpus Christi. The Largest Regional Water Conference in the US. For info: www.texas-water.com/home.html

April 16-17 CA

California Wetlands Conference, San Francisco. Hotel Nikko. For info: CLE Int'l, 800/ 873-7130 or www.cle.com

April 17 OR

2015 Northwest Environmental Health Conference (7th Annual), Portland. DoubleTree Hotel. Presented by Oregon Environmental Council. For info: <http://oeconline.org/7th-annual-northwest-environmental-health-conference/>

April 20-24 OH

International Water Ass'n Conference: Water Efficiency & Performance Improvement: Smart Strategies for the 21st Century, Cincinnati. Hilton Cincinnati Netherland Plaza Hotel. For info: www.iwaefficient.com/2015/

April 21 WA

Lake Roosevelt Forum 2015 Conference: Defining Stewardship & Recreation for a New Generation, Spokane. The Davenport Hotel. For info: <http://www.lrf.org/conference>

April 21 OR

Environmental Insurance in Oregon (Brownbag), Portland. Tonkon Torp, 888 SW 5th Ave., 1600 Pioneer Tower. Presented by the Environmental & Natural Resources Section (Oregon BAR). For info: RSVP to Anzie St. Clair, Anzie.StClair@portofprtlnd.com

April 21-24 NV

Water Quality Ass'n Annual Convention & Trade Show, Las Vegas. Las Vegas Convention Ctr. For info: www.wqa.org/aquatech

April 22 DC

Water 2.0 Conference, Washington. GE Offices, 1299 Pennsylvania Avenue. Presented by Water Innovations Alliance Foundation. For info: www.waterinnovations.org/conferences_home.php

April 22-24 CA

Central Valley Tour 2015, Central Valley. Presented by Water Education Foundation. For info: www.watereducation.org/tour/central-valley-tour-2015

April 23 CA

Monumental Change in the San Gabriel Watershed Symposium, El Monte. Grace Black Auditorium, 8:30am-4:30pm. Presented by Council for Watershed Health. For info: <http://watershedhealth.nationbuilder.com/sgmonument>

April 23 CA

CEQA & Climate Change: An In-Depth Update (Course), Sacramento. Sutter Square Galleria, 2901 K Street. For info: UC Davis Extension, 530/ 757-8777 or <https://extension.ucdavis.edu/section/ceqa-and-climate-change-depth-update>

April 23-24 OK

Oklahoma Water Law Conference, Oklahoma City. The Skirvin Hilton. For info: CLE Int'l, 800/ 873-7130 or www.cle.com

April 27-29 DC

National Hydropower Ass'n Annual Conference, Washington. Capitol Hilton. For info: www.nationalhydroconference.com

April 28-30 OR

Flow 2015: Protecting Rivers & Lakes in the Face of Uncertainty - 3rd International Workshop on Instream Flows, Portland. Red Lion on the River, Jantzen Beach. Presented by Instream Flow Council. For info: www.instreamflowcouncil.org/flow-2015/

April 29-30 Netherlands

Environmental Technology for Impact 2015 Conference, Wageningen. Wageningen University. For info: www.etei2015.org

April 29-30 England

Smart Water Systems 4th Annual Conference, London. Marriott Hotel Regents Park. For info: www.smi-online.co.uk/utility/uk/smart-water-systems

April 30 AK

Regulation of Water in Alaska Seminar, Anchorage. Denai'ina Convention Ctr. For info: The Seminar Group, 800/ 574-4852, info@theseminargroup.net or www.theseminargroup.net

April 30-May 1 NV

Law of the Colorado River Conference, Las Vegas. Planet Hollywood. For info: CLE Int'l, 800/ 873-7130 or www.cle.com

May 1 NM

River Law Conference, Santa Ana Pueblo. Hyatt Regency Tamaya Resort. For info: CLE Int'l, 800/ 873-7130 or www.cle.com

May 1 WA

Shoreline Regulation in Washington State: Marine Shorelines, Rivers and Lakes Seminar, Seattle. Hilton Seattle. For info: The Seminar Group, 800/ 574-4852, info@theseminargroup.net or www.theseminargroup.net

May 1-4 NM

River Rally 2015, Santa Ana Pueblo. Hyatt Regency Tamaya Resort. Presented by the River Network. For info: www.rivernet.org/programs/river-rally

May 5-6 TX

2015 Environmental Trade Fair & Conference, Austin. Austin Convention Ctr. Sponsored by Texas Commission on Environmental Quality. For info: www.tceq.texas.gov/p2/events/etfc/etf.html

May 5-8 CA

ACWA 2015 Spring Conference & Exhibition, Sacramento. Sacramento Convention Ctr. Presented by Ass'n of California Water Agencies. For info: www.acwa.com/events/acwa-2015-spring-conference-exhibition

May 9 OR

Tight Lines Auction & BBQ Dinner, Bend. Presented by Deschutes River Conservancy. For info: <http://www.deschutesriver.org/get-involved/events/tightlinesauction/>

May 10-15 IL

International Conference on Sustainable Design, Engineering & Construction: ICSDEC 2015, Chicago. Hyatt Regency McCormick Place. For info: www.icsdec.com/index.html

May 11 AZ

Hydrology and the Law Seminar, Scottsdale/Fountain Hills. We-Ko-Pa Resort. For info: Law Seminars Int'l, 800/ 854-8009, registrar@lawseminars.com or www.lawseminars.com

May 14 OR

Agricultural Law Section Annual "Roundup" CLE, The Dalles. The Columbia Gorge Discovery Center. Presented by the Oregon State Bar. For info: Paula Hancock, 541/ 276-3331 or hancock@corey-byler.com

May 15 CA

Hot Topics in California's Water: Drought, Finding Water, The Water Bond & Interpreting New Groundwater Regulation Seminar, Los Angeles. DoubleTree LA Downtown. For info: The Seminar Group, 800/ 574-4852, info@theseminargroup.net or www.theseminargroup.net

May 21 OR

Managing Stormwater in Oregon Conference, Portland. Sheraton Portland Airport, 8235 NE Airport Way. Presented by Northwest Environmental Business Council. For info: www.nebc.org/EventDetail.aspx?Id=158

May 21 WA

Celebrate Water - CELP's Annual Fundraiser, Seattle. Ivar's Salmon House. Presented by The Center for Environmental Law & Policy. For info: www.celp.org/events/celebrate-water/

May 25-29 Scotland

World Water Congress XV: Global Water - A Resource for Development, Edinburgh. Edinburgh Int'l Conference Ctr. For info: <http://worldwatercongress.com/>

May 27-29 UT

Natural Resources Law Teachers Institute, Salt Lake City. S.J. Quinney College of Law. Presented by Rocky Mt. Mineral Law Foundation. For info: www.rmmlf.org/confnce/NRLT15news.pdf

May 31-June 5 GA

Ass'n of State Floodplain Manager's Annual Floodplain Management Conference: Mitigation on My Mind, Atlanta. Hyatt Regency. For info: <http://asfpmconference.org/>

May 29 WA

Hydrology and the Law Seminar, Seattle. Washington State Convention Ctr. For info: Law Seminars Int'l, 800/ 854-8009, registrar@lawseminars.com or www.lawseminars.com

June 1-2 Ontario

Grey to Green Conference, Toronto. Presented by Green Roofs for Healthy Cities. For info: www.greytogreenconference.org/

June 2 CO

7th Annual RiverBank Fundraiser, Denver. McNichols Civic Center Bldg. For info: ColoradoWaterTrust.org



260 N. Polk Street • Eugene, OR 97402

PRSR STD
US POSTAGE
PAID
EUGENE, OR
PERMIT NO. 921

CALENDAR

(continued from previous page)

June 4-5 **CO**

33rd Annual Water Law Conference, Denver. The Four Seasons Hotel. Presented by ABA. For info: <http://shop.americanbar.org/ebus/ABAEventsCalendar/EventDetails.aspx?productId=134956288>

June 7-10 **CA**

American Water Works Association Annual Conference & Exposition - ACE 15, Anaheim. Anaheim Convention Ctr. For info: www.awwa.org/conferences-education/conferences/annual-conference.aspx

June 9-10 **AZ**

Indigenous Perspectives on Sustainable Water Practices - Water Resources Research Center Annual Conference, Chandler. Wild Horse Pass Hotel & Casino. Presented by WRRRC & the Gila River Indian Community. For info: <http://wrrc.arizona.edu/conf-2015>

June 10 **TX**

Dam Safety Workshop, Decatur. Decatur Civic Center, 8am-2pm. Presented by TCEQ. For info: www.tceq.texas.gov/p2/events/dam-safety.html

June 12 **TX**

Endangered Species Act Conference, Austin. Omni Hotel at Southpark. For info: CLE Int'l, 800/873-7130 or www.cle.com

June 15-16 **GA**

Municipal Wet Weather Stormwater Conference, Atlanta. Holiday Inn Atlanta-Perimeter. Presented by EPA Region 4 & the Southeast Chapter of the Int'l Erosion Control Ass'n Region One. For info: www.ieca.org/conference/roadshow/atlantams4.asp

June 15-16 **WA**

Water Law in Washington Seminar, Seattle. For info: Law Seminars Int'l, 800/854-8009, registrar@lawseminars.com or www.lawseminars.com

June 15-17 **LA**

AWRA 2015 Summer Specialty Conference on Climate Change Adaptation, New Orleans. Hyatt Regency French Quarter. Presented by American Water Resources Ass'n. For info: www.awra.org

June 16-18 **NV**

Water Is Not for Gambling: Utilizing Science to Reduce Uncertainty - 2015 UCOWR Conference, Las Vegas. Green Valley Ranch. Presented by Universities Council on Water Resources. For info: http://acwi.gov/ACWI-features-box/UCOWR_2015_call_for_abstracts.pdf

June 16-19 **NV**

The New MODFLOW Course: Theory & Hands-On Applications Course, Las Vegas. The Orleans Hotel. Presented by Nat'l Groundwater Ass'n. For info: www.ngwa.org/Events-Education/shortcourses/Pages/258jun15.aspx

June 22-23 **CA**

Tribal Environmental Quality Protection Seminar, Cabazon. For info: Law Seminars Int'l, 800/854-8009, registrar@lawseminars.com or www.lawseminars.com

June 22-23 **ID**

IWUA Summer Water Law & Resource Issues Seminar, Sun Valley. Presented by Idaho Water Users Ass'n. For info: www.iwua.org/

June 24-26 **NV**

Western Governors' Association Annual Meeting, Lake Tahoe. For info: www.westgov.org/

June 25 **TX**

Dam Safety Workshop, Austin. J.J. Pickle Center Austin, 8am-2pm. Presented by TCEQ. For info: www.tceq.texas.gov/p2/events/dam-safety.html

June 24-26 **CA**

Bay-Delta Tour 2015, Bay Delta. Presented by Water Education Foundation. For info: www.watereducation.org/tour/bay-delta-tour-2015

July 8 **TX**

Dam Safety Workshop, Kilgore. Devall Student Ctr., 8am-2pm. Presented by TCEQ. For info: www.tceq.texas.gov/p2/events/dam-safety.html

July 15 **NM**

Hydrology and the Law Seminar, Santa Fe. TBA. For info: Law Seminars Int'l, 800/854-8009, registrar@lawseminars.com or www.lawseminars.com