



The Water Report™

Water Rights, Water Quality & Water Solutions in the West

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NEW WATER MANAGEMENT MODEL

THE UMATILLA BASIN WATER COMMISSION

COUNTIES, IRRIGATION DISTRICT & CONFEDERATED TRIBES FORM ADMINISTRATIVE BODY

by Martha Pagel, Schwabe, Williamson & Wyatt (Salem, OR)

INTRODUCTION

For a brief window of time, from April 1 to April 14 of this year, water flowed from the Columbia River to recharge groundwater in the Umatilla River Basin in North Central Oregon — a significant first step toward implementation of the Umatilla Basin Aquifer Restoration Project (Project). The Project, in turn, is the realization of a long-held vision among local stakeholders to restore severely depleted groundwater and enhance instream flows in the Umatilla River. In addition to providing much-needed water supply for the region, the Project has been a catalyst for bringing together a wide range of local interests to form a new administrative framework for water management.

The Umatilla Basin Water Commission (Commission) was created in late 2009 by an intergovernmental agreement authorized under provisions of Oregon law that encourage intergovernmental cooperation. Oregon Revised Statutes (ORS) 190.003 – 190.110. Parties to the intergovernmental agreement include two counties, an irrigation district, and the Confederated Tribes of the Umatilla Indian Reservation (CTUIR). Participation by CTUIR is authorized under specific statutory provisions allowing local governments and state agencies in Oregon to enter into agreements with American Indian Tribes. This unique agreement appears to be the first instance in which the Oregon statutes have been used to form a new public entity by local and tribal governments for the development of a joint water project. Assuming full implementation of the Project, CTUIR and local governments, working together as the Commission, will jointly own Project assets and operate the Project. In the future, the Commission may also provide the regional management structure for other water projects to address water supply and management needs within the basin.

This article focuses on the formation of the new Commission under Oregon's provisions for intergovernmental cooperation as a possible model for addressing shared water management interests within a basin or sub-basin. For additional technical background relating to the Umatilla Basin Aquifer Restoration Project see "Aquifer Recharge and Recovery, Assessing Potential in the Umatilla Basin," *The Water Report* #60, February 15, 2009.

OREGON'S PROVISIONS FOR INTERGOVERNMENTAL COOPERATION

Intergovernmental Agreements Between and Among Units of Local Government

Oregon law includes statutory authority for a "unit of local government" to enter into written agreements with other units of local government for the performance of any or all functions and activities that the respective parties may have authority to perform. ORS 190.010. A "unit of local government" includes a county, city, district or other public corporation, commission, authority, or entity organized and existing under statute or city or county charter. ORS 190.003.

Umatilla Basin Water Management

Functions

Under ORS 190.010, an intergovernmental agreement may provide for the accomplishment of designated functions or activities by:

- (1) A consolidated department;
- (2) Jointly providing for administrative officers;
- (3) Use of equipment or facilities that are jointly constructed owned, leased or operated;
- (4) Delegation of authority from one or more parties to another party;
- (5) Formation of a new intergovernmental entity created by the agreement; or
- (6) Any combination of the above options.

ORS 190.010 (1)-(6).

Governance

If the agreement creates a new intergovernmental entity as authorized under ORS 190.010(5), the entity must be governed by a board or commission “appointed by, responsible to and acting on behalf of the units of local government that are parties to the agreement.”

The statutes include further direction and authority regarding the contents of an intergovernmental agreement, and the effect of the agreement, fees, and tax coordination between and among the parties. *See* ORS 190.020, 190.050 and ORS 190.070.

The specific powers and limitations of a new intergovernmental entity created under ORS 190.010 are described in ORS 190.080.

Entity Powers

Under ORS 190.080(1), the agreement may authorize a new entity to:

- (a) Issue revenue bonds;
- (b) Enter into agreements for purchase or lease of real or personal property; and
- (c) Adopt rules necessary to carry out its powers and duties under the agreement.

Intergovernmental entities may not levy taxes or issue general obligation bonds. ORS 190.080(2). Debts, liability and obligations of the new entity are addressed in ORS 190.080(3) – (5). Under ORS 190.080(6), the entity may be terminated at any time by unanimous vote of all parties, or as otherwise provided in the terms of the intergovernmental agreement.

Procedures for entering into an agreement, including the requirement for a ratifying ordinance to be adopted by the governing bodies of each participating unit of local government, are specified in ORS 190.085.

Tribal Agreements

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Authority of Units of Local Government and State Agencies To Enter into Cooperative Agreements with American Indian Tribes

The statutes for Intergovernmental Cooperation include additional express authority for units of local government, the state and state agencies to enter into agreements with American Indian tribes. ORS 190.110.

A unit of local government or state agency may “cooperate for any lawful purpose, by agreement or otherwise” with an American Indian tribe or an agency of an American Indian tribe. ORS 190.110(1). Subsection (2) of the statute describes the role of the Governor in ensuring that “the state, a state agency or unit of local government does not interfere with or infringe on the exercise of any right or privilege of an American Indian tribe or members of a tribe held or granted under any federal treaty, executive order, agreement, statute, policy or other authority.” ORS 190.110(2). However, the statute provides no further direction or limitation regarding the nature, content or scope of potential agreements.

THE UMATILLA AQUIFER RESTORATION PROJECT INTERGOVERNMENTAL COOPERATION

Overview

For many years, a broad-based group of local interests have worked together as the “Umatilla Basin Water Coalition” (Coalition) to address water supply and management concerns in the Umatilla Basin. Participants in the Coalition include Morrow and Umatilla Counties, irrigation districts, other special districts involved in water supply, individual farmers and water users, CTUIR, port districts in both counties, and other local businesses. Based in part on the success of a small-scale aquifer recharge project operated by the County Line Water Improvement District, the Coalition formed a vision of developing a large-scale project using available winter flows from the Columbia and Umatilla rivers for groundwater storage.

Umatilla Basin Water Management

Aquifer Restoration

Project Plan

An initial feasibility assessment of options for aquifer storage and recovery and/or artificial groundwater recharge in the basin was conducted in 2008-2009 under the supervision of the Oregon Water Resources Department. Following a determination that the concept of large-scale aquifer restoration and storage was promising, the Coalition decided to pursue project implementation. As a first step, the Coalition identified the need to establish a more formal management structure to oversee project implementation. After extensive consultation and negotiations among its stakeholders, the Coalition agreed on a conceptual framework for a new governmental entity to be formed under an intergovernmental agreement.

The resulting intergovernmental agreement (IGA) for the Umatilla Basin Water Commission, adopted December 22, 2009, is based on findings that Oregon law encourages intergovernmental cooperation among units of local governments and American Indian tribes, and that the parties have a shared interest in protecting and enhancing ground and surface waters and in developing methods for improving water supplies within the basin. *See* IGA Recitals A and D. Generally, the IGA provides for the next level of feasibility analysis, and for preliminary project development and testing to be accomplished over a two-year period with grant funding available from the State of Oregon. This "Stage 1" process culminates with adoption of a "Project Management Plan" that provides a detailed game plan for long-term project operations, including recommendations for any changes that may be needed in the structure or authority of the Umatilla Basin Water Commission (Commission) for on-going operations.

Under the IGA, the Commission provides direct oversight and management of the Project but also continues to work closely with the broader array of interests represented in the Coalition to help identify and address local water needs and priorities.

A bold plan for a thirsty region | With water restrictions in place, farmers in the Umatilla Basin of Eastern Oregon are proposing to draw water from the Columbia River and refill the aquifers they tap for irrigation. Here's how it would work:

1. Water taken from river

Up to 100,000 acre-feet of water, more than 32 billion gallons, is taken from the Columbia River during the winter, using existing irrigation pumping infrastructure.

2. Water treated

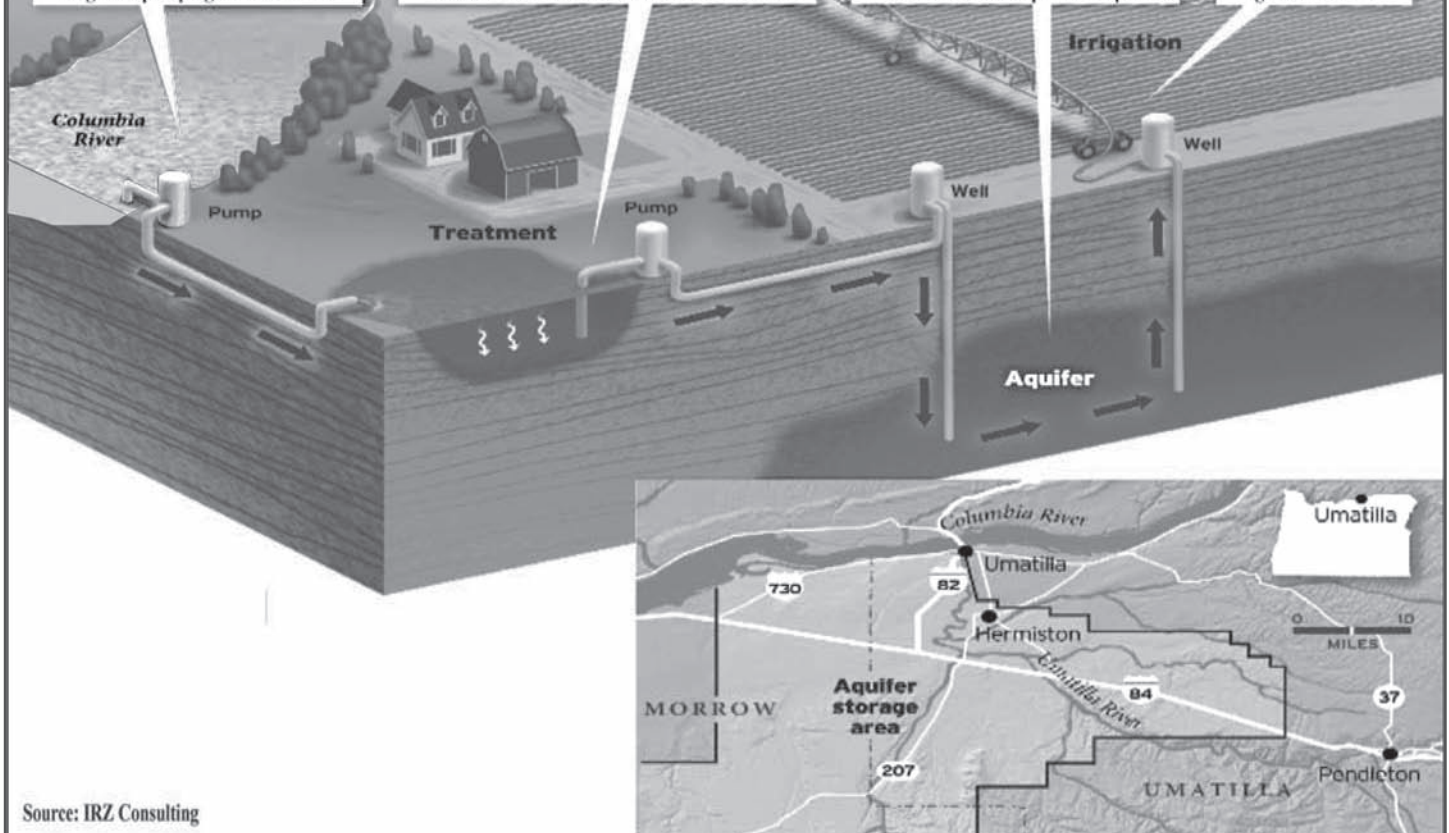
The water percolates through a shallow alluvial aquifer, which cleans the water in the process. Some of the water will leak to the Umatilla River, emerging in the summer months to increase its flow and cool the river.

3. Water stored in aquifer

Water is then pumped out of the shallow water aquifer and injected into existing wells throughout Umatilla and Morrow counties. The water fills deep basalt aquifers.

4. Water used for irrigation

As summer arrives, water is pumped back out for agricultural use.



Source: IRZ Consulting

Umatilla Basin Water Management

Commission Purposes

Groundwater Supply

Return Flows

"Stage 1" Implementation

Water Contracts

Management Plan

Key Provisions of the IGA

Initial parties to the IGA and members of the new Commission were Morrow County, Umatilla County, the County Line Water Improvement District, Westland Irrigation District, and CTUIR. (The County Line Water Improvement District later withdrew from the IGA and participation in the Commission by an Amendment to the IGA dated May 10, 2010, but the District continues to be actively involved as a member of the Coalition.)

SPECIFIC PURPOSES OF THE COMMISSION INCLUDE:

- Implementing "Stage 1" of the Project
 - Further developing the Project as well as to pursue other water-related projects in the basin
 - Taking such other actions as the Commission determines to be necessary
- See IGA, Section 3.2.

THE TERM "PROJECT" IS DEFINED AS:

The Umatilla Basin Aquifer Restoration Project, which includes but is not limited to: (i) the design, engineering, construction, operation, maintenance, and ownership of a supply, storage, recovery and distribution system, or systems; (ii) with the goal of helping to restore groundwater supply and return flows in the Umatilla Basin; and (iii) the goal of making water available for irrigation purposes through aquifer storage and recovery, as more fully described in the Feasibility Study.

IGA, Section 1.1.7

"STAGE 1" IS DEFINED AS:

The first stage of implementation of the Project to be carried out by the Commission, including but not limited to: (i) applying for and obtaining grant funds available from the State of Oregon pursuant to Oregon House Bill (HB) 3369 (2009 Oregon Laws, Ch 907) and Oregon Senate Bill (SB) 5535 (2009 Oregon Laws, Ch 906); (ii) contracting for design and engineering plans for initial Project work including construction of monitoring wells and pilot systems to test the supply, storage, recovery and distribution concepts; (iii) completing a preliminary due diligence legal assessment for the Project; (iv) applying for initial water use authorizations, including but not limited to a "limited license" for preliminary testing and implementation of the Project; (v) contracting for construction of monitoring wells or other facilities in connection with preliminary testing for the Project under a limited license or other water use authorization; (vi) refining and clarifying the scope of the Project for long term implementation; (vii) evaluating long-term funding, ownership, construction, operation, maintenance, and management needs for the Project, including recommendations for any changes that may be needed in the structure or authority of the Commission; (viii) preparing and adopting a Project Management Plan incorporating the conclusions and recommendations of the evaluation; and (ix) other activities associated with initial implementation and Project refinement as identified by the Board of Directors.

IGA, Section 1.1.9

The "Project Management Plan" to be developed during the Stage 1 process will provide a refined description of the scope and future stages of the Project, along with recommendations, strategies, and timelines for addressing key issues such as Project ownership, construction, operation, maintenance, funding, and long-term management. IGA, Section 1.1.8. The Project Management Plan will also specifically address "procedures and mechanisms" for determining how water stored under the Project will be made available under contracts for irrigation and other uses, including estimates of the cost of water and contract requirements. IGA, Section 4.2. The IGA expressly limits contracts for the use of Project water to "other governmental entities or Tribes" and prohibits contracts with "private individuals, business entities or non-governmental organizations." *Id.*

Completion of Stage 1 is evidenced by the adoption of the Project Management Plan. See e.g., Section 1.1.9 (definition of Stage 1); and Section 3.5 (limitation of powers during Stage 1). The Project Management Plan, in turn, will determine whether and how the Project will continue with implementation of subsequent phases. Accordingly, it is possible the Commission may determine that further stages of implementation are not feasible — for example, if the project does not prove to be economically feasible based on available funding sources and potential contracts for the sale of stored water.

If the Project Management Plan does call for on-going implementation (as expected), the IGA will be amended to address long-term operational needs. If the Project Management Plan calls for the Project to be abandoned, the IGA includes provisions for termination of the agreement and dissolution of the Commission. IGA, Section 6.1. However, the Commission would also have the option to continue operations under the IGA to pursue other water-related projects as may be identified. IGA, Section 3.2.

Although the IGA grants broad authority to the Commission to carry out the purposes of the agreement, during the Stage 1 period the Commission's powers and duties are expressly limited to "the

Umatilla Basin Water Management

State Agency Grant

Scope of Work

Environmental Benefits

Procedural Requirements

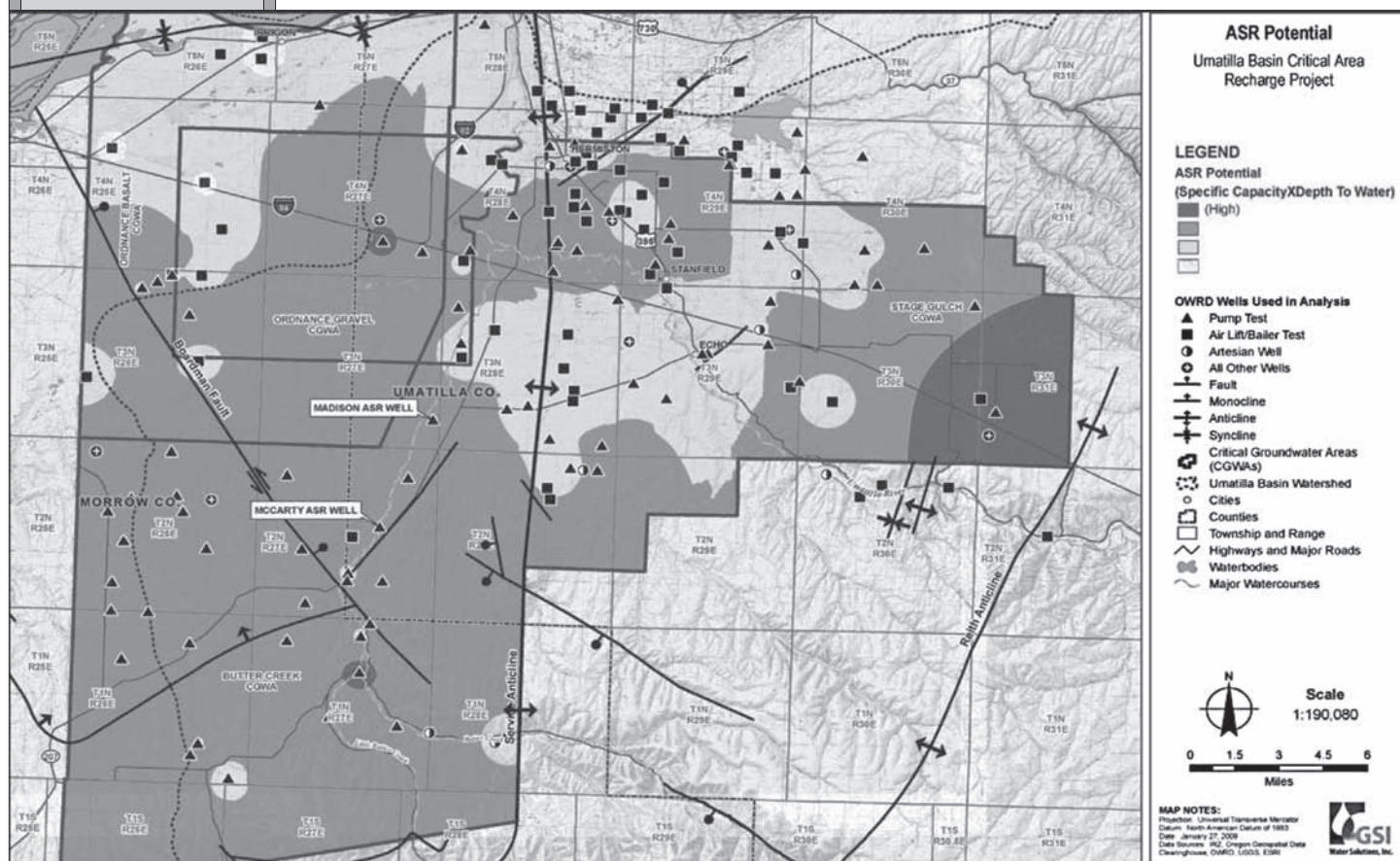
extent necessary to complete Stage 1.” IGA, Section 3.5. Specific activities contemplated during Stage 1 included securing a \$2.5 million grant from the Oregon Water Resources Department (OWRD) to fund the Stage 1 operations. The grant program was authorized under legislation enacted in 2009 to generally facilitate water supply projects throughout the state, and to provide specific authority and funding for a project in the Umatilla Basin. HB 3369 (2009 Or Laws, Ch 907) and SB 5535 (2009 Or Laws, Ch 906).

THE SCOPE OF WORK FOR THE OWRD GRANT INCLUDES:

- Completing additional feasibility work needed to develop the Project Management Plan
- Securing preliminary state authorization (a “limited license”) for diversions from the Columbia and Umatilla Rivers
- Acquiring real property or obtaining necessary easements or use agreements to begin Project development
- Applying for state water rights to authorize long-term use of water (the IGA provides express authority for the Commission to apply for and hold any required water use authorizations. IGA, Section. 4.1)

Under the terms of the grant and HB 3369, the Project must be designed to provide at least 25% of the stored water for “net environmental benefits.” If additional state grant or loan funds are used to construct the Project and the percentage of state funding exceeds 25% of the total Project costs, the percentage of net environmental benefit must equal or exceed the percentage of state funding. Under HB 3369, “net environmental benefits” is defined as an “improvement in ecological conditions” as compared with a pre-project baseline. HB 3369, Section 18(2). The required improvement in “ecological conditions” is tied to factors such as: stream flow conditions (water quantity, velocity, or temperature); fish habitat; return flows from groundwater recharge to surface waters; protection of peak flows and ecological flows; improved groundwater quality or quantity; or improved aquatic or riparian habitat. *Id.*

The IGA includes administrative and operational provisions requiring compliance with other Oregon laws pertaining to open public meetings, access to public records, and compliance with state public contracting procedures. *See* IGA, Sections 3.8.1, 3.9, and 3.11. As a sovereign tribal government, CTUIR generally would not be subject to such procedural requirements imposed by Oregon law on state agencies and units of local government. However, as a party to the IGA, and member of the Commission, CTUIR voluntarily agrees to compliance with the applicable state law in connection with Commission activities.



Work To Date

The Commission has made substantial progress since its formation in late 2009. THUS FAR THE COMMISSION HAS:

- Secured the state grant funding from OWRD
- Entered into contracts for engineering and other technical services to implement the Project
- Filed applications for limited licenses to authorize initial use of water for recharge
- Negotiated agreements for use of private lands and infrastructure to deliver water to the recharge site
- Initiated actual Columbia River diversions and recharge for the 2011 season ending April 14
- Begun work on its long-term Project Management Plan, including further evaluation of the potential “net environmental benefits” to be derived from the Project

Operating under Limited License (LL) 1332 (issued by OWRD on March 1, 2011), the Commission officially began project operations on April 1 by diverting water through existing irrigation pumps and pipes owned by the Boardman Tree Farm and made available to Commission under a use agreement. The 14-day effort resulted in approximately 200 acre-feet of Columbia River water being delivered to the recharge site. Working cooperatively with the County Line Water Improvement District, the Commission is also gathering data and monitoring diversions from the Umatilla River to the existing County Line recharge project — as a preliminary step to obtaining its own limited license or water use permit.

The Commission will resume recharge operations under the Columbia River limited license when the season of use re-opens in October, 2011. The five-year limited license authorizes a diversion rate of up to 24.06 cubic feet per second (cfs), and maximum annual volume of 10,000 acre-feet, during a season of use from October 1 through April 14 each year.

Under a condition of the limited license, diversions during the month of November and from April 1 through April 14 of each year may be further limited under a plan that must be submitted by the Commission, and approved by OWRD to ensure protection for Columbia River salmon listed under the federal Endangered Species Act. The license is also subject to water quality monitoring and testing under a plan to be submitted prior to each recharge cycle. Data collected under the limited license will inform the process of applying for and obtaining permanent water right permits for the project.

CONCLUSION

The Umatilla Basin Water Commission appears to be the first example of a new public entity formed for water management purposes under Oregon statutes encouraging intergovernmental cooperation between and among units of local government and a tribal government. Assuming full implementation of the Project, CTUIR and local governments — working together as the Commission — will jointly own and operate the Project. The IGA also authorizes the Commission to undertake other water projects that are consistent with the underlying objectives of protecting and enhancing groundwater and surface waters within the basin and developing methods for improving water supplies through planning, aquifer restoration, storage, recovery, and distribution within the region. In addition to providing the vehicle for implementation of a much-needed groundwater restoration project in the basin, the formation and long-term work of the Commission may provide a model for integrated water management in other regions of the state and an administrative framework for using water more effectively to meet local needs.

FOR ADDITIONAL INFORMATION:

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The above article is based on materials prepared for presentation at a recent Continuing Legal Education Program, “Tribal Waters in the Pacific Northwest: Case Study of the Umatilla Basin Aquifer Restoration Project” — held April 11-12, 2011 in Seattle, Washington, by Law Seminars International.

Umatilla
Basin Water
Management

Progress

Recharge
Activity

Season of Use

ESA Protection

Integrated
Management

Editor’s Note: Martha Pagel will be moderating a panel of top water agency administrators and policy makers for Washington, Oregon, Montana, and Idaho at the “Water Solutions” conference being held June 16 in Vancouver, WA (see next page).

Martha Pagel is a shareholder in the regional law firm of Schwabe, Williamson & Wyatt, where she focuses her practice on water law and natural resources. She was legal counsel to the Umatilla Basin Water Coalition in drafting the Intergovernmental Agreement to form the Umatilla Basin Water Commission, and she currently serves as legal counsel to the Commission. Before entering private law practice in 2000, she served as Director of the Oregon Water Resources Department and as Director of the Oregon Department of State Lands. She is a recognized leader in Western water law and policy and recently served as arbitrator for the states of Colorado, Kansas and Nebraska in a dispute involving use of hydraulically connected ground water under an Interstate Compact for the Republican River.

JUNE 16
2011
VANCOUVER
WASHINGTON

WATER SOLUTIONS

Innovations in Water Management

NORTHWEST REGION WATER MANAGEMENT & INFRASTRUCTURE CONFERENCE

Presented By: The Water Report & the Northwest Environmental Business Council

June 16, 2011 — Hilton Hotel - Vancouver, Washington

8:30am - 5pm (Plus pre-conference orientation & reception following)

Covering Washington, Oregon, Idaho, and Montana

A conference about innovative approaches to managing water resources in the Northwest

Providing an adequate supply of water to a growing population, while meeting the needs of the natural environment, is one of the most complex challenges we face as a society — especially with the prospect of climate-induced changes to historical supply patterns. However, the components of this challenge tend to be addressed in relative isolation. This conference takes a different approach and is designed to share creative solutions and innovative ideas about water resources across sectors and disciplines.

FOR FULL AGENDA & REGISTRATION INFORMATION: WWW.NEBC.ORG

Pre-Conference	Pre-Conference Orientation: Regional Water Issues Primer & Update
Welcome	Ted Sturdevant, Director, Washington State Department of Ecology
Session 1 Plenary, 80 minutes State Policy Overview	What States are doing on a policy and planning level — What changes can be expected in the future Moderator/Overview: Martha Pagel, Schwabe Williamson & Wyatt Speakers: - Gary Spackman, Director, Idaho Water Resources Department - Phil Ward, Director, Oregon Water Resources Department - Evan Sheffels, Special Assistant for Water Policy, Washington State Department of Ecology - Krista Lee Evans, Executive Director, Montana Agricultural Business Association
Session 2 Plenary, 40 minutes Integrated Approach	Watershed approaches to managing water supplies, uses and allocations: issues and case studies Moderator/Overview: Michelle Girts, CH2M Hill Speakers: - Alan Unger, Deschutes County Commission, Deschutes Water Alliance - Bob Barwin, Washington Department of Ecology, Yakima Basin / Sunnyside surface water impoundment
Break/30 min	Networking Break
Session 3 2 Breakouts, 75 min Track A. Enhancing Water Availability	Innovative approaches to managing restricted water supplies Moderator: John Lambie, SoundEarth Strategies Speakers: - Rick Henry, Walla Walla Basin Watershed Council – Managed Aquifer Recharge - JR Cook, Executive Director, Umatilla Basin Water Commission, Using the Columbia River for Enhanced Availability - Wendy Christensen, US Bureau of Reclamation, Yakima River Basin Water Enhancement Project - Derek Sandison, Washington State Department of Ecology, Yakima River Basin Water Enhancement Project
Track B. Reducing Water Demand	Innovative approaches for extending water resources through reuse, efficiency, and demand side management Moderator: Peter Mohr, Tonkon Torp LLP Speakers: - Kelley Beamer, Cascadia Green Building Council, water efficiencies and low impact development - Anita Yap, City of Damascus Public Works, conservation, eco-marketing - Steve Carper, Tualatin Valley Water District, conservation/demand side management
Lunch/90 min	Welcome: Tom Lindley, Perkins Coie; and Luncheon Keynote (TBA)
Session 4 2 Breakouts, 75 min Track A. Flexible Approaches to Water Rights	Enhancing water availability working towards water law flexibility and expanded water right uses. Moderator: Eric Webber, Landau Associates Speakers: - Roderick Walston, Best Best & Krieger, western region overview, national context - Municipal: Judi Gladstone, Seattle Public Utilities & WUWC - Agricultural: Walt Sales, President, Association of Gallatin Agricultural Irrigators
Track B. Trading & Markets	How water quality trading and other market approaches can be used to enhance water supply. Moderator: Rick Glick, David Wright Tremaine Speakers: - Joe Whitworth, The Freshwater Trust - Ecosystem Markets - Margie Gardner, Bonneville Environmental Foundation - Ralph Meyers, Idaho Power
Break/30 min	Networking Break
Session 5 Plenary, 75 minutes Infrastructure Financing Options	Addressing the enormous need for increased investment in water infrastructure: issues and case studies Moderator: Bill Fronczak, Perkins Coie Speakers: - Harry Seely, Westwater Research, - Marc Thalacker, Three Sisters Irrigation District, - Niki Iverson, City of Hillsboro
Reception	Reception

Water Sustainability

Owens Valley

San Fernando Water Use

Owens Lake Habitat

SUSTAINABLE WATER USE

INVISIONING A SUSTAINABLE WATER FUTURE FOR THE AMERICAN WEST

by Barton “Buzz” Thompson, Stanford University and Stanford Law School

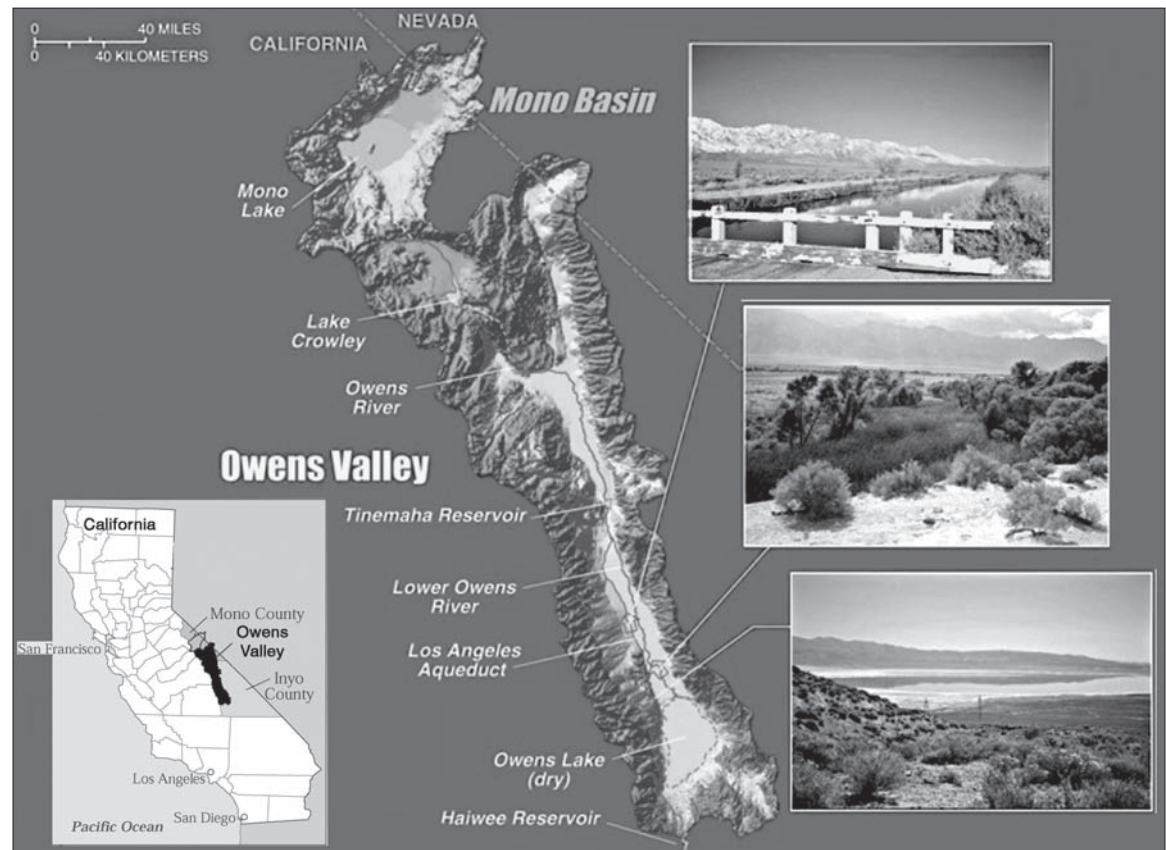
INTRODUCTION

My mother spent part of her childhood in the Owens Valley of California, where her father owned a small but productive farm. In the 1920s, her father, tired of farming and wanting to try his hand at a different occupation, sold his farm. The buyer of the farm claimed that he wanted to continue operating the farm, but was a front for the City of Los Angeles, which was seeking more water to send southwest through the Los Angeles Aqueduct to meet the needs of its growing population. As was the case for many farmers in the Owens Valley who sold out to Los Angeles, my grandfather felt deceived when he discovered the true buyer.

The water that Los Angeles purchased, however, was put to good economic use, both by Los Angeles and my grandfather. Not harboring resentment for long, my grandfather took the money from the sale of his farm, moved to the San Fernando Valley of Los Angeles, and started to subdivide property using the very water that Los Angeles was taking from the Owens Valley. He prospered, until the Great Depression.

The San Fernando Valley (Valley) continued to prosper. Approximately 260 square miles in size, the Valley is now one of the economically most productive areas of the nation. Home to everything from major movie studios to aerospace companies, the Valley employs about a million people, with mean household income of over \$80,000. Water enabled this growth.

The expansion of Los Angeles and its economy, however, has come at a price. My grandfather's ranch sat on the Owens River close to its confluence with Owens Lake. At the time my mother played along its shores, Owens Lake was about 100 square miles — half the size of the San Fernando Valley — and prime habitat for migrating bird species. The director of the University of California's Museum of Vertebrate Zoology reported during a visit to the lake at the time, “Great numbers of water birds are in sight along the lake shore — avocets, phalaropes, ducks. Large flocks of shorebirds in flight over the water in the distance, wheeling about, show in mass, now silvery now dark, against the gray-blue of the water. There must be literally thousands of birds within sight of this one spot.” Not today. As Los Angeles took more and more



**Water
Sustainability****Sustainable
Future?**

water, the lake's shores retreated. Until recently, Owens Lake was a dry lakebed, with alkali dust storms that caused health concerns for the local population. Encouraged by lawsuits and political pressures, Los Angeles has begun to restore water to the Owens River, and thus to parts of Owens Lake, and floods parts of the lake to shallow levels to reduce dust problems. Some of the ecological productivity of the lake has returned. Yet Owens Lake remains a remnant of its historic size and ecological importance.

The question my mother's experience raises, and the subject of this essay, is whether there is a way the West can continue to use its scarce water resources to grow its economy and meet the needs of its still growing populations without the same negative side effects. More broadly, can we imagine a more "sustainable" water future for the western United States? If so, what would that future look like? What strategy should we follow to achieve it?

The term "sustainable" is overused, appropriated by different people to mean different things. But it remains an important concept. For purposes of this essay, "sustainable" means meeting the water needs of the current generation at minimal cost, while ensuring that we can meet the water needs of future generations and do not threaten the life-support systems of the planet. It recognizes that we must meet current needs, but it looks for how we can do it more efficiently and without long-term harm.

My mother's tale illustrates the larger sustainability challenges facing the western US as a whole. Water projects of all scales have enabled the West to grow and economically develop. We have done a great job of meeting the needs of the current generation, but at a cost to our environment and potentially to future generations.

**Importation
&
Groundwater
Overdrafting**

Consider the two principal means that we have used to meet the needs of water-scarce regions for agriculture, industry, or domestic growth: (1) importation of water from distant watersheds (like the Owens Valley); and (2) groundwater overdrafting. By modifying the West's natural hydrology, water imports have undermined populations of freshwater fish. In California, only 22 percent of native freshwater fish species are currently secure. Seven percent are extinct, 31 percent are listed as endangered or threatened species, and scientists consider the rest to be of "special concern." Groundwater overdrafting has also led to an assortment of problems, including increased pumping costs and energy use, saltwater intrusion, subsidence, desertification of the overlying surface, and even loss of ecosystems and biodiversity dependent on the groundwater.

**Climate Change
Impacts**

Climate change will make it even more difficult to meet growing western needs sustainably. Whatever the cause of recent climate change, the evidence suggests that the West is already experiencing significant changes that could reduce available water. Scientific studies, for example, indicate that snowpack in California and the northwestern United States has declined in most locations over the last sixty years; at the same time, the snowpack has begun to melt earlier in the year by a week or more. Over the last sixty years, stream flow in the West has decreased slightly, with some river basins, including the Colorado and Columbia, experiencing sizable reductions. Normal lake levels have declined in various parts of the nation, particularly in the West. Climate projections, while highly uncertain, suggest that water may become increasingly scarce in some parts of the West over the next century. Indeed, one recent study suggests that, given current climate trends, there is a one in two chance that Colorado River reservoirs — which currently provide water for some 30 million people in the Southwest — could go dry by 2050.

ACHIEVING A SUSTAINABLE WATER FUTURE

So, what should water managers do in the West in order to achieve a more sustainable water future?

**Steps
Needed**

At least six steps would be valuable:

- Collect and analyze better information about water conditions
- Treat water resources as scarce — in particular, price them at their true cost
- Preserve both our engineered and "natural" water capital
- Increase the degree of flexibility in water management
- Integrate water management
- Be innovative and creative

Collect Better Information

Sustainable water management requires adequate information to evaluate choices. Yet the West often fails to collect basic information regarding water quality and quantity. Consider, for example, the water-quality assessments conducted by states pursuant to the federal Clean Water Act. In most western states, only a small percentage of river miles have been assessed in recent years (ranging as low as three percent in

**Data
Collection**

Water Sustainability

Legislation v. Logic

Washington, seven percent in Wyoming, and ten percent in Montana in the most recently published survey). Most western states have assessed water quality in more than half their lake area, but the coverage in the last survey was only 22 percent in Oregon and two percent in Montana. While most states now collect information regarding groundwater pumping (at least from critical aquifers), California only recently decided to require local agencies to monitor groundwater levels, and there is no statewide requirement that pumping be tracked. Data collection, moreover, is often unreliable and fragmented, with little effort to synthesize and analyze the data that is available.

Part of the problem is cost. Collecting and analyzing data are expensive, and cash-strapped state and local agencies often do not have the resources to obtain all of the information that they would like to have. However, interviews conducted last year by Stanford University's Water in the West program revealed that few water managers felt that they had access to the most important information. Instead, federal and state legislation often required them to collect information they considered of marginal value, while more important information frequently went unassessed. In short, legislation rather than logic is often dictating what information is currently collected, and the money that goes into information collection is not always well used.

Technological Advances

Technological advances are thankfully making it easier and less expensive to collect key information. New technology has made it far simpler and more accurate to monitor water in various stages of the hydrologic cycle. In some cases, technology now makes it possible to monitor critical water measures even remotely. Geophysicists, for example, are using satellite information on gravitational pull and land levels to measure groundwater depletion, although the approach is still in its infancy. A growing number of cities, including San Francisco and Beverly Hills, have installed smart meters that can monitor water use on a real-time basis.

Smart Meters

Increased data should improve water management. Consider, for example, the use of smart meters. Cities that have installed them have been able to rapidly spot leaks and thus reduce water waste. Homeowners often do not spot water leaks and become suspicious only when they receive an unusually high monthly water bill. Smart meters allow quick identification of leaks by showing when homeowners are using sizable amounts of water at night, when little use is normally made. Palm Springs also has used smart water meters to encourage people to use water during periods when the electricity needed to get water to the consumers is not at peak cost. Paid \$250 to participate in a trial experiment, homeowners reduced their peak water use by over 15 percent. Cities installing smart meters also estimate that the meters will save them significant sums by reducing reading costs and producing more accurate bills.

"Collaboration Platform"

In another example of the value of information, IBM is working with the Sonoma County Water Agency (SCWA) to develop a "collaboration platform" that will enable SCWA to better track and manage the various elements of its water system and those of its customers. The system will combine information on: water usage, availability, and quality; weather and climate; and environmental factors. SCWA believes that the platform will allow it to increase both water efficiency and energy efficiency and reduce the need for new and costly infrastructure projects. The platform also will enable closer collaboration and cooperation between and among SCWA and its retail agencies.

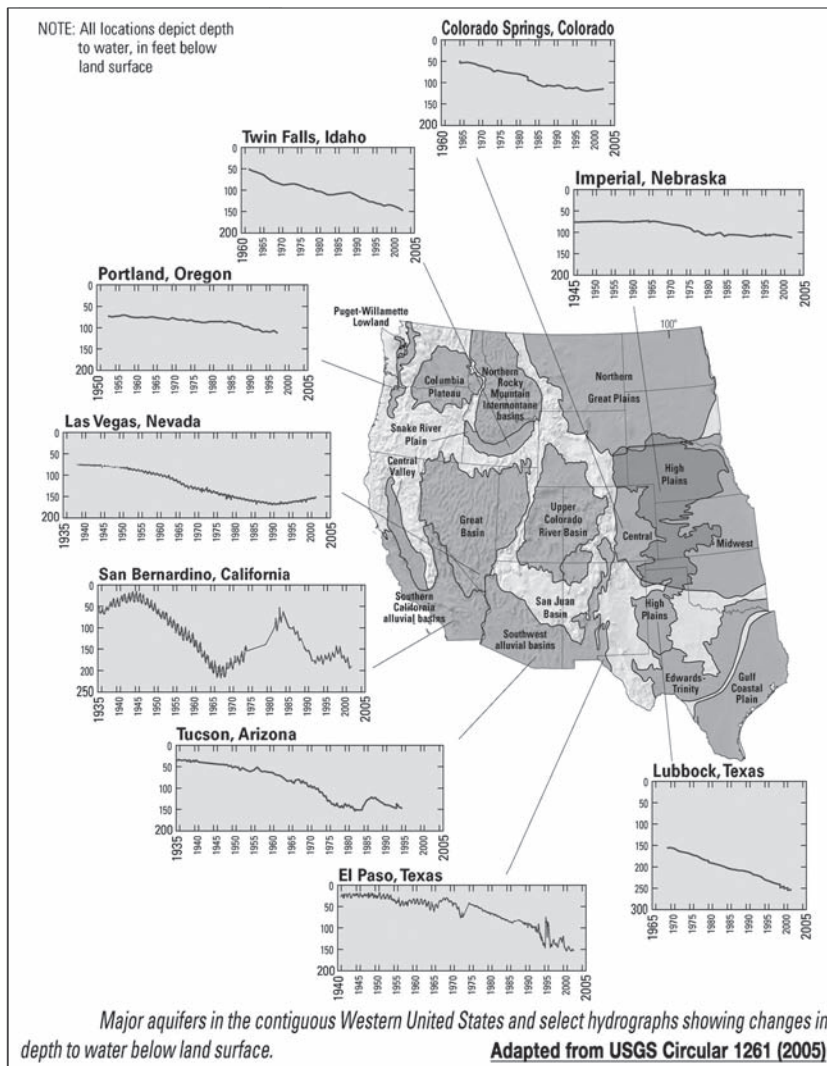
True Costing

Price Water as Scarce

Although water is scarce throughout most of the West, we do not treat it that way. In particular, we price water as if it were plentiful. We charge nothing, or at most a nominal fee, for the water itself, in dramatic contrast to oil, gas, minerals, land, and all other valuable resources, and despite the sizable opportunity cost to using the water. We sometimes subsidize the cost of transporting, treating, and delivering water — although subsidies have decreased significantly in the last several decades. Water agencies and companies still charge a flat fee for water in some areas of the West — although this again is changing. When agencies and companies charge by amount consumed, they typically use an average-cost pricing system that melds the cost of different supplies and often charges all consumers the same — even if some are in areas where the cost of delivering water is higher. As a result, water is a steal compared to the price charged in other countries; in European countries such as Denmark and Germany, water prices are generally three times as high as in the United States. Average water bills in most of the West are lower than bills for cable TV or cell phones. According to one estimate, only about 0.75 percent of the average household's yearly expenditures go to for water and sewer services, compared to 2.38 percent for electricity and 2.19 percent for telephone service. No one pays the true marginal cost of the water that they use, which undermines people's incentive to conserve water.

Timed Pricing

One solution encouraged by economists is for water retailers to adopt tiered pricing, where the price per unit of water increases as the total volume of consumed water rises. Tiered pricing can encourage large water users to conserve, while ensuring that small water users can still afford their supplies. Ideally, tiered



pricing systems can provide strong conservation signals, while being fair, simple, transparent, and also ensuring that fixed costs are covered even if overall water use declines in response to the conservation incentive. A growing number of water agencies in California and other western states are switching to an “allocation-based” tiered-pricing structure that accomplishes all of these goals. Tiers are set for different subgroups of ratepayers (based on factors such as household size and climate zone), ensuring that the tiers provide appropriate incentives for all classes of consumers and providing for fairness among the different classes. The lowest-tier price is set to recover fixed costs, so that conservation does not threaten the viability of the water supplier or require the supplier to raise the water rates.

Moving to tiered pricing will not always be politically easy. The difficulties of increasing rates, however, should not be overstated. Five years ago, New York City increased its rates by almost 10 percent without significant public resistance. In preparing for the rate increase, New York surveyed 24 other large water suppliers and found that the average rate increase in recent years had been 9.2 percent. Moreover, public education regarding the need for a rate increase can help reduce resistance. Water agencies that have successfully moved to tiered pricing, for example, often went through a significant period of public collaboration and education. Tellingly, there are few examples of agencies that have made the switch returning to traditional pricing systems. States can encourage tiered pricing by providing for periodic reviews of rate structures and their impact on water conservation.

Water Sustainability

Infrastructure
Extensive

Maintenance
Deficient

Pricing
&
Cost

Preserve Engineered and Natural Capital

Key to a sustainable water system is the preservation of both the “engineered” and “natural” capital on which we rely for an assured and healthy water supply. Both are currently facing growing threats. Start with the West’s engineered water infrastructure. The water industry relies on a much more extensive infrastructure than the electricity sector or other industries. Much of that infrastructure — e.g., water treatment plants, water mains — dates to immediately after World War II. A significant percentage is even older; one US Environmental Protection Agency (EPA) survey found that 10% of all the pipes used to supply water to systems serving more than 100,000 people were over 80 years old.

Well-maintained water supply systems can last for lengthy periods of time. Many water suppliers, however, are not setting aside sufficient funding to maintain existing infrastructure and replace it as needed. This deficiency can lead to an infrastructure “gap” between actual and needed maintenance and investment. A decade ago, EPA released its Clean Water and Drinking Water Infrastructure Gap Analysis showing that water utilities would need to increase infrastructure replacement and O&M by a significant amount to avoid a growing deficiency. According to EPA, if funding did not increase, the capital gap for new and replaced infrastructure would grow by about 2020 to \$122 billion for clean water and to \$102 billion for drinking water. The O&M gap would be \$148 billion and \$166 billion respectively.

The root of the problem again is pricing. Many water suppliers are not charging, and consumers are not paying, a price that reflects the full cost of the water supplies, including physical depreciation in the water supply system itself. Raising water prices is never easy, but the decision to defer maintenance and capital replacement today can lead to a larger rate crisis in the future. Rather than addressing the long-term need by raising prices a small amount today, water suppliers will have to raise rates by a much higher price in the future to address the accumulated infrastructure gap. The best way to avoid the problem is to adopt a comprehensive asset management program, or similar process, for estimating long-term capital and operating costs — and then to build the meeting of those necessary expenses into local water rates.

Water Sustainability

"Natural Capital"

Watershed Protection

Watershed Value

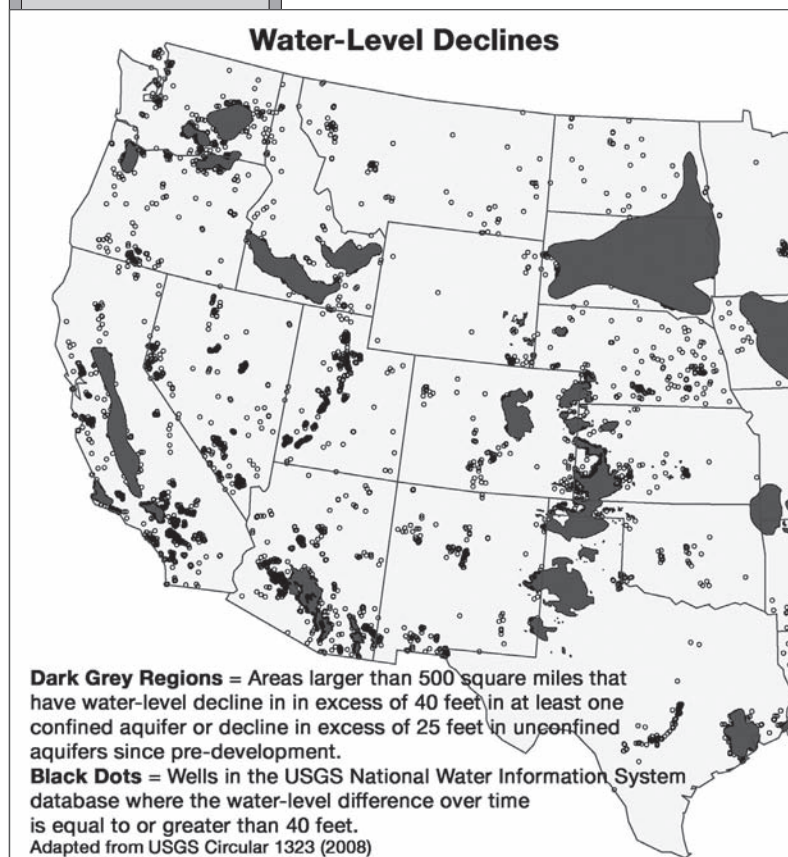
Groundwater Reserve

Engineered infrastructure is not the only form of capital that water suppliers must protect. Water suppliers also benefit from "natural capital" in the form of watershed lands that generate valuable "ecosystem services." Wetlands in a watershed, for example, can help protect downstream water quality (as well as: reduce flood risks; provide for steadier water flows; support fisheries; sequester carbon; and provide aesthetic enjoyment). A 2004 analysis of 27 water suppliers in the US concluded that treatment costs for drinking water deriving from watersheds covered at least 60 percent by forest were half the cost of treating water from watersheds with 30 percent forest cover — and one-third of the cost of treating water from watersheds with only 10 percent cover.

The federal Safe Drinking Water Act has encouraged many water suppliers to protect this natural capital by requiring suppliers to filter their drinking water unless they can demonstrate that they are protecting their watershed sufficiently to meet water quality standards. When New York City looked at the option of filtering water from its Catskills-Delaware watershed in the 1990s, it concluded that protecting the watershed was the least cost option. Building a filtration plant would have cost some \$6 billion (with \$300 million in annual O&M costs). Instead, the City chose to invest approximately \$1.5 billion over 10 years to restore and protect the watershed (as well as help improve the quality of life of watershed residents). A number of other US cities have also chosen to protect their watersheds rather than build filtration plants, including: Boston, Massachusetts (at an estimated avoided cost of approximately \$180 million); Seattle, Washington (avoided cost \approx \$150-200 million); and Portland, Oregon (avoided cost \approx \$200 million).

The vast majority of water suppliers, however, already filter their water and therefore are not subject to the Clean Drinking Water Act rule. Although studies suggest that such suppliers would still benefit by protecting their watersheds, many do not. One study of large California water retailers in the early 2000's found that few had acquired new watershed lands even when the watershed was threatened. Some were using their watersheds in ways that threatened water quality (e.g., logging).

Often, a major obstacle to more effective management of watersheds is the lack of pertinent information. For example, while suppliers were generally aware of studies suggesting the value of watershed protection for water quality, they were unable to determine the benefits of protecting specific lands and therefore to justify the often large expenditures needed to purchase or protect such lands. Only the City of Santa Cruz had tried to place an economic value on watershed protection measures, and it was not confident of the accuracy of its measure. Thankfully, several research groups are currently developing tools to estimate the value of water quality protection (and other ecosystem services) obtained by protecting particular lands.



Groundwater is another form of "natural capital." Groundwater constitutes a reserve of water that, if protected from overdrafting, can provide water during long-term droughts. In many regions of the West, however, water users are overdrafting groundwater aquifers — i.e. withdrawing more water from the aquifer each year than is replaced. Such use is unsustainable in the long run. When groundwater tables drop to a level that no longer permits economically feasible extraction, water users will need to either find other sources of water or reduce their water use. As noted earlier, overdrafting can also: increase pumping costs; encourage salt-water intrusion in coastal aquifers; cause land subsidence and desertification; and harm groundwater-dependent ecosystems. One recent European study even estimates that groundwater depletion, by releasing water into the atmospheric system, has contributed to the rise in sea level in recent decades.

Increase Water Management Flexibility

Flexibility promotes resilience and adaptive capacity in environments that are subject to significant uncertainty. In the case of water, for example, flexibility allows water users and suppliers to adjust to drought conditions. Flexibility will become even more important in the face of climate change. Climate change will bring more extremes, requiring increased flexibility to address. Moreover,

Water Sustainability

Flexibility

Regional Markets

Species "Triage"

ESA Modification

climate conditions are likely to be even more unpredictable, often preventing water suppliers from planning in advance to meet changing conditions. Climate change in short will make flexibility — and the ability to make quick changes — even more important in the future than they have been today.

Water markets provide an important means of providing flexibility. While climate change may well bring more frequent and extreme droughts, all regions will generally not suffer from a drought at the same time. To the degree that water can be “wheeled” from one region to another, drought regions can adjust to their reduced water supply and minimize the economic costs of the water loss by acquiring water from neighboring regions that are not in as severe of a drought situation. Even if all regions are suffering from similar drought conditions, moreover, larger regions can generally better address water shortages.

Other steps also can be taken to increase flexibility and adaptive capacity in the face of climate change. First, water suppliers can invest small amounts to expand future options. For example, reservoirs can be built to allow expansion in the future if greater storage capacity turns out to be needed. Second, the government can avoid locking in decisions for lengthy periods of time. Shorter licenses and water contracts will provide greater flexibility if future conditions are significantly changed.

Regulatory laws also may need to be more flexible, while ensuring effective oversight to avoid abuse of administrative discretion. For example, in a recent book on California water management that I co-wrote with seven other experts, we broached the sensitive subject of “species triage.” As we noted, Congress was not familiar with the risk of climate change when it wrote the Endangered Species Act. As a result, the Act does not

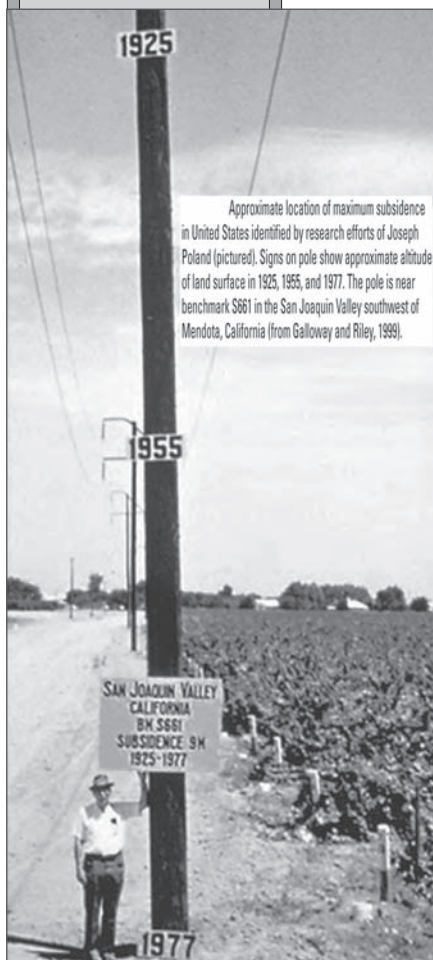
anticipate that changing conditions might make it unfeasible to preserve and recover all species in the future. Increasingly, scientists are recognizing that ecosystems of the future in any given place may be quite different from those today, requiring different management strategies to protect endangered species. Even if a particular species is unlikely to survive because of changes in temperature, arrival of invasive species, or loss of potential habitat from sea level rise, the law lacks provisions that allow regulators to make tradeoffs or to prioritize ecosystem investments that might ensure the survival of one species over another — a form of endangered species triage. (Hanak et al, *Managing California's Water: From Conflict to Reconciliation* (2011).)

We therefore suggested that Congress might want to modify the Endangered Species Act in the future to deal with this issue (although we recognized the dangers of amending the Act and emphasized that the need to adopt a more flexible approach is not yet here). In particular, we suggested that Congress might at some point “need to consider creating an Endangered Ecosystem Committee that, in contrast to the federal Endangered Species Committee, would have authority to allow federal and state agencies, in protecting entire ecosystems, to triage species that are unlikely to survive even with massive governmental and private intervention.”

Integrate Water Management

Integration also will be a key to sustainable water management. As noted earlier, larger water systems will generally be able to better weather the uncertainties and extremes of climate change. A larger region, for example, can frequently diversify away from risk by seeking multiple water sources more readily than a small water supplier can do. At the moment, however, water systems in many parts of the West, and the United States as a whole, are highly fragmented. The drinking water industry in the United States, for example, consists of some 200,000 separate entities. In California alone there are several thousand water suppliers of varying size. To overcome this fragmentation, water suppliers could merge into larger units or coordinate their operations through larger regional agencies or wholesalers.

Connecting all parts of the hydrologic cycle is another critical integration need. Historically, the law did not fully recognize the hydrologic connection between groundwater and surface water, treating them as two physically separate resources and effectively turning the hydrologic cycle into a “hydrologic bicycle.” Although that has changed in most states, some states like California still largely ignore the hydrologic connection between surface and groundwater. Even where states theoretically protect rights in one resource from interference by users of the other, most fail to address the connection between groundwater and groundwater-dependent ecosystems such as wetlands or the baseflow of rivers. Moreover, most states still fail to adequately protect surface lands critical to the recharge of groundwater aquifers. As a result, excessive groundwater



Water Sustainability

Integrated Management

Energy Issues

Recycling Water

Improved Technologies

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extraction has injured many groundwater-dependent ecosystems, and land use decisions have reduced both recharge and the quality of that recharge. An important step toward a more sustainable water system is to connect these various parts of the hydrologic cycle — and then to provide for the integrated, dynamic, and adaptive management and use of the interrelated elements.

Integration also calls for greater attention to the connections between water and other important resource issues. Energy is the most obvious example. In California, about five percent of the electricity used in the state goes to move water from one area to another, treat the water (and wastewater), and deliver it. (Water users consume another 15 percent of the electricity, and over 30 percent of the state’s natural gas, to heat and otherwise locally treat their water.) Decisions regarding new water supplies and conservation options should take into account not only the related energy costs, but the current volatility of energy prices and the public debate over fossil fuels. Water planning also must take into account the water needs of additional energy production, including large-scale solar facilities.

Innovation and Creativity

A final quality needed for a sustainable water system is innovation and creativity. Water recycling will be an important element of future water supply systems. The traditional water supply cycle makes little sense today. Historically, cities have withdrawn water from rivers and streams, used significant energy to move the water, and treated the water for consumption, only to treat and move the water again after using it. Given the cost of infrastructure and water transportation, using a shorter cycle where water is used and then recycled for local use will often make more sense.

One limitation on water recycling, however, has been the market for such water. Few people are interested in directly consuming recycled water. In recent years, however, the market for recycled water has grown from landscape irrigation to also include water for ecosystems, agricultural use, and power generation. For example, in California, recycled water is used to augment streams and support wetlands in the Santa Clara Valley, to irrigate crops in the Watsonville area, and to furnish water for both power and industry. Orange County and San Diego also are using recycled water indirectly for potable use by injecting the recycled water in groundwater aquifers and augmenting reservoir supplies, respectively. See Markus, *TWR* #59.

The next step is to adopt improved technologies that can treat the water not only for recycling purposes but to generate energy and produce valuable organics such as nitrogen and phosphorous. A number of European countries are far ahead of the United States in generating significant amounts of electricity from their sewage. At Stanford, engineers are examining a variety of new technologies that can significantly increase energy production from wastewater treatment. Using a microbial fuel cell with an anode coated with carbon nanotubes, for example, one team has achieved 75 percent greater energy recovery. Another team, matching an engineer with a rocket scientist, is developing technology that converts ammonia from the treatment process into nitrous oxide, which in turn can be decomposed into clean air and energy.

A final step in increasing the value of recycled water will be the development and use of distributed wastewater treatment facilities. In most cities or regions, all wastewater is taken to a central facility where it is treated and then pumped back to neighborhoods through a separate piping system, often using significant energy. In many cases, it will make more sense — and be economically cheaper — to locate smaller, distributed treatment facilities in each neighborhood, reducing the overall transportation and delivery costs involved in the recycling system. Each neighborhood can then treat the water to the degree that they wish. Several cities are already experimenting with such distributed systems, but the future potential is much greater.

CONCLUSION

Reform in the water field, as in most areas, is largely incremental. A variety of drivers — including increasing population, climate change, and higher energy costs — are likely to require more sustainable water systems in the future western United States. This essay has set out one vision for those systems. Over time, the drive to greater sustainability will transform the water sector into a more integrated, flexible, and creative industry. The same drivers will almost inevitably lead to higher (and probably graduated) water rates and greater protection of both engineered and natural capital. Finally, effective management in these conditions will require better data and information on the overall operation of the West’s water systems.

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Wetlands Jurisdiction

FEDERAL WETLANDS JURISDICTION

NEW POST-RAPANOS GUIDANCE — LONGER FEDERAL REACH, LESS CERTAINTY

by Richard M. Glick and Michael J. Gelardi, Davis Wright Tremaine LLP (Portland, OR)

Introduction

The US Environmental Protection Agency (EPA) and the US Army Corps of Engineers (Corps) (collectively “the agencies”) continue to refine their approach to determining the extent of federal jurisdiction over wetlands and other waters in the wake of the US Supreme Court’s 2006 decision in *United States v. Rapanos*, 547 U.S. 715 (2006). In December 2010, those agencies completed a draft of new non-binding guidance (“New Guidance”) governing the scope of federal jurisdiction under the Clean Water Act (CWA). While the New Guidance was pending before the White House Office of Management and Budget, it was leaked to the public — resulting in significant commentary and an outcry for more opportunity for public participation in the agencies’ decision making. The agencies then made minor revisions to the New Guidance and released it for public comment. *EPA and Army Corps of Engineers Guidance Regarding Identification of Waters Protected by the Clean Water Act*, 76 Fed. Reg. 24479 (May 2, 2011) (<http://edocket.access.gpo.gov/2011/pdf/2011-10565.pdf>). Comments must be received before July 1, 2011.

The draft New Guidance makes significant changes from earlier guidance released in 2007 and 2008, most notably by subjecting more types of jurisdictional decisions to the fact-specific “significant nexus” test introduced by US Supreme Court Justice Kennedy in *Rapanos*. EPA and the Corps acknowledge that this approach will likely result in a significant increase in the number of waters found subject to CWA jurisdiction. Arguably, this expansion of federal authority should be the subject of a formal rulemaking, and not simply issued as guidance, as it will be highly controversial. Indeed, a letter signed by 170 members of Congress objecting to the New Guidance was already delivered to the EPA Administrator and Secretary of the Army on April 14, 2011. The New Guidance published in the Federal Register acknowledges this concern and indicates a formal rulemaking will follow finalization of the New Guidance. In order to provide context for the New Guidance, this article traces the development of federal courts’ understanding of the *Rapanos* case in general and Justice Kennedy’s significant nexus test in particular. This article then explains how the New Guidance differs from previous *Rapanos* guidance documents and examines its implications for those parties interested in development in wet areas.

Uncertainty Created by the *Rapanos* Decision

In *Rapanos*, a fractured Supreme Court issued three separate opinions, none of which represented a majority of the Court. The issue in *Rapanos* was whether the Corps exceeded its authority under Section 404 of the CWA by requiring permits for the filling of wetlands that were adjacent to ditches and man-made drains that eventually emptied into navigable waters. Justice Scalia’s plurality opinion held that federal jurisdiction exists only over wetlands with a “continuous surface connection” to “waters of the United States,” which he defined as “relatively permanent, standing or flowing bodies of water.” In a concurring opinion, Justice Kennedy took a different approach and instead argued that federal jurisdiction under the CWA is satisfied where there is a “significant nexus” physically or ecologically between wetlands and navigable waters. Finally, Justice Stevens and three other justices issued a dissenting opinion arguing that the Court should defer to the Corps’ then broader standard for CWA jurisdiction. For additional details concerning the decision, see Bricker, *TWR* #29 and Walston, *TWR* #30.

The Supreme Court’s multiple opinions in *Rapanos* have created uncertainty in the lower federal courts as to the proper test to determine whether a water body is subject to regulation under the CWA. In order to interpret *Rapanos*, courts have turned to another US Supreme Court case, *Marks v. United States*, 430 U.S. 188 (1977). *Marks* held that when the majority of the Supreme Court agrees only on the outcome of a case but not the reasons for the outcome, then lower courts must follow the *narrowest* rationale that the majority of justices would have agreed to if they were forced to choose. The opacity of this standard is well illustrated by the post-*Rapanos* case law.

Applying the *Marks* test, the federal circuit courts have split on which *Rapanos* opinion governs the scope of the federal government’s jurisdiction under the CWA. The Seventh and Ninth Circuits reasoned that the narrowest *Rapanos* opinion must be the opinion that preserves the greatest amount of federal authority over wetlands. This opinion, they concluded, is Justice Kennedy’s, because his significant

New Guidance

Jurisdiction Expansion

Rapanos Split

Marks Test

Wetlands Jurisdiction

Apply Both Tests

nexus test provides federal jurisdiction over more waters than Justice Scalia's test and the four dissenting justices would likely side with Justice Kennedy in finding federal jurisdiction over any waters meeting the significant nexus test. Under this theory, the four dissenters plus Justice Kennedy constitute a majority of the Court for the purpose of the *Marks* test. See *Northern California River Watch v. City of Healdsburg*, 496 F.3d 993 (9th Cir. 2007) and *U.S. v. Gerke Excavating Inc.*, 464 F.3d 723 (7th Cir. 2006). The Eleventh Circuit also adopted Justice Kennedy's test, although under a slightly different interpretation of *Marks*. See *U.S. v. Robinson*, 505 F.3d 1208, 1221-22 (11th Cir. 2007).

The First and Eighth Circuits, by contrast, decided that *Marks* was not an appropriate tool for interpreting *Rapanos*. According to these courts, *Marks*' directive to use the "narrowest" holding could mean either the opinion that gives the federal government the greatest authority or the opinion that gives it the least authority. *Marks*, therefore could not be relied upon to choose the winning *Rapanos* opinion. Instead, the First and Eighth Circuits adopted Justice Stevens' view expressed in his *Rapanos* dissent that federal jurisdiction is appropriate where a water body meets either Justice Kennedy's or Justice Scalia's test. The two circuits therefore determined that they must employ both tests to determine whether a water body qualifies as waters of the United States under the CWA. See *U.S. v. Bailey*, 571 F.3d 791 (8th Cir. 2009) and *U.S. v. Johnson*, 467 F.3d 56 (1st Cir. 2006).

Factual Determination

Post-*Rapanos* decisions in the Fifth and Sixth Circuits similarly analyzed federal jurisdiction under both the Kennedy and the Scalia tests, although neither court determined which test controlled under *Marks*. Rather, both of these courts avoided the *Marks* issue by simply reviewing the particular facts in their respective cases and determining that federal jurisdiction was satisfied under either standard. See *U.S. v. Cundiff*, 555 F.3d 200 (6th Cir. 2009) and *U.S. v. Lucas*, 516 F.3d 316 (5th Cir. 2008).

Significant Nexus

Despite the disagreement in the circuit courts about which *Rapanos* opinion controls, the common denominator in all of these cases is Justice Kennedy's opinion. Because the Kennedy significant nexus standard generally provides for more expansive federal jurisdiction than Justice Scalia's standard, the Kennedy test is the most relevant in close cases. Additionally, because it is at least possible to argue that a significant nexus can be found in all but the most isolated wetlands, the Kennedy approach leads courts to closely analyze the facts in each case.

Needed Evidence

A recent decision by the Fourth Circuit provides some guidance on the type and quality of evidence needed to establish federal jurisdiction under the significant nexus test. The 4.8 acres of wetlands at issue in *Precon Dev. Corp. v. U.S. Army Corps of Engineers* were seven miles from the nearest navigable waterway. These wetlands were adjacent to a seasonal, man-made drainage ditch that flowed to another ditch, which, in turn, flowed into a tributary of the Northwest River in southeastern Virginia. The wetlands were separated from the first ditch by a berm. Utilizing its 2007 guidance document, the Corps determined that the significant nexus test applied because the wetlands were adjacent to "relatively permanent waters." Lumping the wetlands at issue with all other "similarly situated" wetlands in the watershed, the Corps found a significant nexus to the Northwest River because the wetlands collectively helped to moderate downstream flooding, and filter sediments and nutrients.

"Significant" Issue

Although the Fourth Circuit court rejected the developer's argument that the Corps needed to produce quantitative laboratory evidence to demonstrate an ecological connection between the wetlands and the river, the court nevertheless held that the Corps' evidence was insufficient to find a significant nexus. Specifically, the Fourth Circuit held that the Corps failed to demonstrate that flooding or sediment and nutrient loading were issues in the Northwest River and that the local wetlands were significant in controlling these threats. In doing so, the court contrasted *Cundiff* and *Healdsburg* where the Corps had produced evidence that the wetlands at issue in those cases performed functions that had a significant impact on the quality of the relevant navigable waters. Under *Precon*, therefore, the significant nexus test requires either a quantitative or qualitative showing of why local wetlands significantly affect the physical or ecological integrity of navigable waters. *Precon Dev. Corp. v. U.S. Army Corps of Engr's*, No. 09-2239 at 30 (4th Cir., Jan. 25, 2011).

Reliance on Significant Nexus

The New Guidance

If finalized, the New Guidance will supersede prior guidance issued by the agencies in 2007 and 2008. Whereas the prior guidance relied on both Justice Scalia's continuous surface connection test and Justice Kennedy's significant nexus test, the New Guidance places greater emphasis on the latter — at least for the types of waters where federal jurisdiction is most questionable. This approach will inevitably result in more waters being deemed jurisdictional and thus subject to CWA, continuing the judicial trend of conducting intensive factual analysis to make the determination.

Wetlands Jurisdiction

Types of Waters

As stated on page 3 of the New Guidance:

The agencies expect, based on relevant science and field experience, that under the understandings stated in this draft guidance, the extent of waters over which the agencies assert jurisdiction under the CWA will increase compared to the extent of waters over which jurisdiction has been asserted under existing guidance, though certainly not to the full extent that it was typically asserted prior to the Supreme Court decisions in *SWANCC* [*v. U. S. Army Corps of Engineers*, 531 U.S. 159 (2001)] and *Rapanos*.

Specifically, the New Guidance subjects the following types of waters to the fact-specific significant nexus test:

- Tributaries to navigable waters or interstate waters that are not “relatively permanent” (meaning less than seasonal)
- Wetlands adjacent to any traditional navigable water, tributary or interstate water
- Any waters falling into the “other waters” provision of EPA and the Corps’ CWA regulations, which include: mudflats; sandflats; wetlands not adjacent to the waters included in the above categories; wet meadows; and other specified waters if their fill could affect interstate or foreign commerce

Expanded Scope

Further, the New Guidance will apply not only in the context of CWA section 404, but addresses the scope of “waters of the United States” wherever that phrase appears in the CWA. That would include the section 202 National Pollutant Discharge Elimination System (NPDES) permit program, the section 311 oil spill program, the section 303 provisions on water quality standards and total maximum daily loads, and the section 401 water quality certification process. New Guidance at p. 2.

Guidance v. Regulation

It is important to note that “guidance” is not the same as regulations. Guidance is an indicator of how the agencies will approach jurisdictional determinations, whereas regulations have the force of law and are entitled to some deference by federal courts. See *Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837 (1984). This suggests that the primary import of the New Guidance is to clarify for property owners and the courts how the agencies will conclude they have jurisdiction under the CWA, but the courts will not feel bound by deference-to-regulation considerations. See *Precon Development Corp., Inc. v. Army Corps of Engineers*, Slip Opinion, ___ F.3d ___, Dkt. No. 09-2239 (4th Cir. 2011); *National Mining Ass’n v. EPA*, Slip Opinion, ___ F.3d ___, Dkt. No. 10-1220 (RBW) (D.C. Cir. 2011).

Conclusions

Because the New Guidance is a harbinger of more aggressive jurisdictional determinations by the agencies without benefit of a formal rulemaking, we can expect more rather than less litigation to follow. The inability of the US Supreme Court and the federal agencies to provide clarity on CWA jurisdiction makes for unsatisfying advice to clients. Until the agencies promulgate comprehensive regulations (not likely soon), the Supreme Court reconciles the split in the Circuits (less likely still), or Congress rewrites the CWA (not likely at all), we can only work with our clients and technical experts to evaluate the specific location for its ecological connection to navigable waters. If it is a close call, the assumption has to be that the agencies will assert jurisdiction.

Litigation Expected

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TRIBAL WATER RIGHTS AND THE COLORADO RIVER



REALLOCATION THROUGH FORBEARANCE AGREEMENTS

by Mason D. Morisset, Morisset, Schlosser, Jozwiak & Somerville (Seattle, WA)

INTRODUCTION

The Colorado River (River) system is an essential source of water for vast areas of the American southwest. For over 50 years, litigation, legislation, and negotiation have occurred concerning entitlement to the use of that water. Gradually, the water rights of Indian tribes with reservations adjacent to the River have been adjudicated. As will be discussed in this article, this has resulted in the allocation of substantial quantities of water from the system. In addition, assertion of rights of tribes not directly on the River but possessing claims to water from tributaries or groundwater sources is increasing the allocation from the river system for Indian tribes. This article explores the basis of Indian tribal water rights and the rulings that have led to the allocation of substantial amounts of Colorado water for the benefit of the tribes. It then examines the possibility of applying forbearance agreements to enable the use of unused tribal water by other entities.

THE BASIS FOR WATER RIGHTS IN INDIAN COUNTRY

THE "WINTERS DOCTRINE"

The "Winters Doctrine"

The legal basis and status of tribal water rights are governed by federal law. Indian reserved water rights are federal water rights and "are not dependent upon state law or state procedures." *Cappaert v. United States*, 426 U.S. 128 (1976). Indian water rights in Indian country are governed by what is known as the "Winters doctrine" — a doctrine emanating from *Winters v. United States*, 207 U.S. 564 (1908).

In *Winters*, the Court construed an agreement (confirmed by Congress) between the Indians of the Fort Belknap Reservation and the US, which established the Fort Belknap Reservation in Montana. In the agreement, the Indians surrendered most of their land and retained a reservation for their future use and occupancy.

The case arose over a dispute between non-Indian settlers and the Indians over the use of the waters of the Milk River for irrigation purposes. The non-Indians claimed paramount rights to use the water based on state law that followed the Prior Appropriation Doctrine.

IN EVALUATING THE RIGHTS OF THE INDIANS, THE *WINTERS* COURT NOTED:

The reservation was a part of a very much larger tract which the Indians had the right to occupy and use and which was adequate for the habits and wants of a nomadic and uncivilized people. It was the policy of the Government, it was the desire of the Indians, to change those habits and to become a pastoral and civilized people. If they should become such the original tract was too extensive, but a smaller tract would be inadequate without a change of conditions. The lands were arid and, without irrigation, were practically valueless. And yet, it is contended, the means of irrigation were deliberately given up by the Indians and deliberately accepted by the Government.

207 U.S. at 576.

The *Winters* Court upheld the power of the federal government to exempt waters from appropriation under state water law, and held that the federal government had in fact reserved the waters of the Milk River in order to fulfill the purposes of the agreement between the Indians and the US. *Id.* See F. Cohen, Handbook of Federal Indian Law at 578-79 (1982 ed.) (discussing case).

The *Winters* doctrine was reaffirmed in *Arizona v. California*, 373 U.S. 546 (1963), and was best summed up by the Court in *Cappaert*.

THE *CAPPAERT* DECISION STATES:

This Court has long held that when the federal government withdraws its land from the public domain and reserves it for federal purposes, the government, by implication, reserves appurtenant water then unappropriated to the extent needed to accomplish the purpose of the reservation. In so doing the United States acquires a reserved right in unappropriated water which vests on the date of the reservation and is superior to the rights of future appropriators. Reservation of water rights is empowered by the Commerce Clause, art. I, ' 8, which permits federal regulation of navigable streams, and the Property Clause, art. IV, ' 3, which permits

Tribal Water Rights

Intent Inferred

federal regulation of federal lands. The doctrine applies to Indian reservations and other federal enclaves, encompassing water rights in navigable and non-navigable streams.

...
In determining whether there is a federally-reserved water right implicit in a federal reservation of public land, the issue is whether the government intended to reserve unappropriated and thus available water. Intent is inferred if the previously unappropriated waters are necessary to accomplish the purpose for which the reservation was created.

Cappaert at 138-39.

THE SCOPE OF TRIBAL RESERVATION WATER RIGHTS

Colville v. Walton

The case of *Colville v. Walton* illustrates the application of the *Winters* doctrine and the scope of that doctrine. 647 F.2d 42 (9th Cir.), cert denied, 454 U.S. 1092, (1981), (9th Cir. No. 3-4285, Jan. 21, 1985).

In *Colville*, several competing interests collided. The case involved sharing of water for agricultural and fish rearing purposes from the No Name Creek hydrological system on the Colville Reservation in Eastern Washington. In long and protracted litigation, the tribe sued Walton, a holder of fee land on the reservation, which land Walton had originally purchased from Indian allottees. The *Colville* case illustrates several principles of the *Winters* doctrine.

WINTERS DOCTRINE ASPECTS OF THE *COLVILLE* CASE INCLUDE:

- The case holds that the United States reserved sufficient water at the time the reservation was created to allow irrigation of all practicably irrigable acreage on the reservation.
- A ratable share of the water reserved for irrigation passed to Indian allottees.
- That ratable share could in turn be conveyed to a non-Indian purchaser (e.g., Walton). However, the non-Indian purchaser's share was subject to loss if not put to use. Thus, the non-Indian purchaser must exercise "reasonable diligence" in applying water beneficially to his land.
- In addition to water for irrigation, sufficient water was reserved to allow establishment of fisheries and to facilitate natural spawning of fisheries. The quantity of water unrelated to irrigation was not affected by the allotment of the reservation and the passage of title out of Indian hands.
- Although the non-Indian's use was subject to defeasance (forfeiture) for non-use, the Indian allottee's share was not subject to such reduction.
- The reserved tribal right for sufficient water to support fisheries emanated from the purposes for which the reservation was created and not from actual use or appropriation. Thus, failure of the tribe to use the water for fisheries until a much later date in history did not defeat the tribe's right nor reduce its priority.
- Finally, where there was insufficient water to meet all of the water needs (non-Indian agricultural, Indian allottee agrarian, and tribal fisheries), each party should bear a proportionate share of any adjustment required by the shortage, since all parties had a priority date as of the date of creation of the reservation.

The Colorado River Adjudication

The vast litigation in the US Supreme Court initiated by Arizona against California became the focus for determination of the water rights of Indian tribes on the Colorado River. The most recent version of the court's final decree best summarizes the litigation, especially as it pertains to tribal rights. The following information is taken from the decree in *Arizona v. California*.

On January 19, 1953, the Court granted the State of Arizona leave to file a bill of complaint against the State of California and seven of its public agencies: Palo Verde Irrigation District; Imperial Irrigation District; Coachella Valley County Water District; Metropolitan Water District of Southern California; City of Los Angeles; City of San Diego; and County of San Diego. 344 U.S. 919, 73 S.Ct. 385. The US and the State of Nevada intervened. 344 U.S. 919, 73 S.Ct. 385, 97 L.Ed. 708 (1953) (intervention by the United States); 347 U.S. 985, 74 S.Ct. 848, 98 L.Ed. 1121 (1954) (intervention by Nevada). The State of New Mexico and the State of Utah were joined as parties. 350 U.S. 114, 115, 76 S.Ct. 188, 100 L.Ed. 125 (1955). The Court referred the case to George I. Haight, Esquire, and upon his death to Simon H. Rifkind, Esquire, as Special Master. 347 U.S. 986, 74 S.Ct. 848, 98 L.Ed. 1121 (1954); 350 U.S. 812, 76 S.Ct. 43, 100 L.Ed. 728 (1955). On January 16, 1961, the Court received and ordered filed the report of Special Master Rifkind. 364 U.S. 940, 81 S.Ct. 457 (1961). On June 3, 1963, the Court filed an opinion in the case, 373 U.S. 546, 83 S.Ct. 1468, 10 L.Ed. 2d 542, and on March 9, 1964, the Court entered a decree in the case. 376 U.S. 340, 84 S.Ct. 755, 11 L.Ed. 2d 757.

Allotted Land

Key Winters Aspects

Water & Fisheries

No Forfeiture

Proportionate Shares

Arizona v. California

Tribal Water Rights

Tribal Intervention

On February 28, 1966, the Court granted the joint motion of the parties to amend Article VI of the decree, and so amended Article VI to extend the time for submission of lists of present perfected rights. 383 U.S. 268, 86 S.Ct. 924, 15 L.Ed.2d 743.

On January 9, 1979, the Court filed an opinion granting the joint motion for entry of a supplemental decree, entered a supplemental decree, denied in part the motion to intervene of the Fort Mojave Indian Tribe, and otherwise referred the case and the motions to intervene of the Fort Mojave Indian Tribe and the Colorado River Indian Tribes, et al., to Judge Elbert Tuttle as Special Master. 439 U.S. 419, 437, 99 S.Ct. 995, 58 L.Ed. 2d 627. On April 5, 1982, the Court received and ordered filed the report of Special Master Tuttle. 456 U.S. 912, 102 S.Ct. 1764, 72 L.Ed. 2d 171. On March 30, 1983, the Court filed an opinion rendering a decision on the several exceptions to the report of the Special Master, approving the recommendation that the Fort Mojave Indian Tribe, the Chemehuevi Indian Tribe, the Colorado River Indian Tribes, the Quechan Tribe, and the Cocopah Indian Tribe be permitted to intervene, and approving some of his further recommendations and disapproving others, 460 U.S. 605, 609, 615, 103 S.Ct. 1382, 75 L.Ed.2d 318. On April 16, 1984, the Court entered a second supplemental decree implementing that decision. 466 U.S. 144, 104 S.Ct. 1900, 80 L.Ed. 2d 194.

On October 10, 1989, the Court granted the motion of the state parties to reopen the decree to determine the disputed boundary claims with respect to the Fort Mojave, Colorado River, and Fort Yuma Indian Reservations. 493 U.S. 886, 110 S.Ct. 227, 107 L.Ed. 2d 180. The case was referred to Robert B. McKay, Esquire, and upon his death to Frank McGarr, Esquire, as Special Master. 493 U.S. 971, 110 S.Ct. 422, 107 L.Ed. 2d 386 (1989); 498 U.S. 964, 111 S.Ct. 450, 112 L.Ed. 2d 409 (1990). On October 4, 1999, the Court received and ordered filed the report of Special Master McGarr. 528 U.S. 803, 120 S.Ct. 296, 145 L.Ed.2d 27. On June 19, 2000, the Court filed an opinion rendering a decision on the several exceptions to the report of the Special Master, approving the settlements of the parties with respect to the Fort Mojave and Colorado River Indian Reservations and remanding the case to the Special Master with respect to the Fort Yuma Indian Reservation. 530 U.S. 392, 418, 419-420, 120 S.Ct. 2304, 147 L.Ed. 2d 374. On October 10, 2000, the Court entered a supplemental decree. 531 U.S. 1, 121 S.Ct. 292, 148 L.Ed. 2d 1.

On June 14, 2005, Special Master McGarr submitted his report recommending approval of the settlements of the federal reserved water rights claim with respect to the Fort Yuma Indian Reservation and a proposed supplemental decree to implement those settlements.

The State of Arizona, the State of California, the Metropolitan Water District of Southern California, Coachella Valley Water District, the United States, and the Quechan Tribe, at the direction of the Court, filed a joint motion to enter a consolidated decree.

The final decree consolidated the substantive provisions of the decrees previously entered in the action at 376 U.S. 340, 84 S.Ct. 755, 11 L.Ed. 2d 757 (1964), 383 U.S. 268, 86 S.Ct. 924, 15 L.Ed. 2d 743 (1966), 439 U.S. 419, 99 S.Ct. 995, 58 L.Ed.2d 627 (1979), 466 U.S. 144, 104 S.Ct. 1900, 80 L.Ed. 2d 194 (1984), and 531 U.S. 1, 121 S.Ct. 292, 148 L.Ed. 2d 1 (2000); implemented the settlements of the federal reserved water rights claim for the Fort Yuma Indian Reservation, which the Court approved in the final decree; and reflected changes in the names of certain parties and Indian reservations. The decree was entered in order to provide a single convenient reference to ascertain the rights and obligations of the parties adjudicated in the original proceeding. It reflects only the incremental changes in the original 1964 decree by subsequent decrees and the settlements of the federal reserved water rights claim for the Fort Yuma Indian Reservation.

The form of relief in the final decree, as it was in the original, was an injunction against the United States. The injunction specified various tribal water allocations.

THE COURT STATED:

The United States, its officers, attorneys, agents and employees be and they are hereby severally enjoined:

(D) From releasing water controlled by the United States for use in the States of Arizona, California, and Nevada for the benefit of any federal establishment named in this subdivision (D) except in accordance with the allocations made herein; provided, however, that such release may be made notwithstanding the provisions of Paragraph (5) of subdivision (B) of this Article; and provided further that nothing herein shall prohibit the United States from making future additional reservations of mainstream water for use in any of such States as may be authorized by law and subject to present perfected rights and rights under contracts theretofore made with water users in such State under Section 5 of the Boulder Canyon Project Act or any other applicable federal statute:

(1) The Chemehuevi Indian Reservation in annual quantities not to exceed (i) 11,340 acre-feet of diversions from the mainstream or (ii) the quantity of mainstream water necessary to supply the consumptive use required for irrigation of 1,900 acres and for the satisfaction of

Disputed Boundaries

Final Decree Relief

Injunction

Tribal Allocations

Tribal Water Rights

Tribal Allocations

related uses, whichever of (i) or (ii) is less, with a priority date of February 2, 1907;

(2) The Cocopah Indian Reservation in annual quantities not to exceed (i) 9,707 acre-feet of diversions from the mainstream or (ii) the quantity of mainstream water necessary to supply the consumptive use required for irrigation of 1,524 acres and for the satisfaction of related uses, whichever of (i) or (ii) is less, with priority dates of September 27, 1917, for lands reserved by the Executive Order of said date; June 24, 1974, for lands reserved by the Act of June 24, 1974 (88 Stat. 266, 269);

(3) The Fort Yuma Indian Reservation in annual quantities not to exceed (i) 77,966 acre-feet of diversions from the mainstream or (ii) the quantity of mainstream water necessary to supply the consumptive use required for irrigation of 11,694 acres and for the satisfaction of related uses, whichever of (i) or (ii) is less, with a priority date of January 9, 1884;

(4) The Colorado River Indian Reservation in annual quantities not to exceed (i) 719,248 acre-feet of diversions from the mainstream or (ii) the quantity of mainstream water necessary to supply the consumptive use required for irrigation of 107,903 acres and for the satisfaction of related uses, whichever of (i) or (ii) is less, with priority dates of March 3, 1865, for lands reserved by the Act of March 3, 1865 (13 Stat. 541, 559); November 22, 1873, for lands reserved by the Executive Order of said date; November 16, 1874, for lands reserved by the Executive Order of said date, except as later modified; May 15, 1876, for lands reserved by the Executive Order of said date; November 22, 1915, for lands reserved by the Executive Order of said date;

(5) The Fort Mojave Indian Reservation in annual quantities not to exceed (i) 132,789 acre-feet of diversions from the mainstream or (ii) the quantity of mainstream water necessary to supply the consumptive use required for irrigation of 20,544 acres and for the satisfaction of related uses, whichever of (i) or (ii) is less, with priority dates of September 19, 1890, for lands transferred by the Executive Order of said date; February 2, 1911, for lands reserved by the Executive Order of said date; *Arizona v. California*, 547 U.S. 150, 154-158 (2006).



SUMMARY OF TRIBAL WATER ALLOCATIONS IN THE *ARIZONA V. CALIFORNIA* DECREE:

Chemehuevi:	11,340 acre feet per year (AFY)
Fort Yuma:	77,966 AFY
Colorado River:	719,248 AFY
Fort Mojave:	132,789 AFY
Cocopah:	9,707 AFY

TOTAL: 951,050 AFY

FORBEARANCE AGREEMENTS

Tribal Water Forbearance

The settlement of litigation which involved the United States and the Quechan Indian Tribe on the one hand and the States of California and Arizona and the Metropolitan Water District (MWD), et al. on the other hand illuminated the fact that the Tribe was entitled to water beyond its current needs. This litigation occurred at the same time that agencies such as MWD were in dire need of water due to drought conditions and increasing water needs. Thus, as part of the overall settlement of Quechan entitlement, an agreement was achieved between Quechan and MWD to allow MWD to receive the benefit of unutilized water allocation in any given year. In a unique action, the US concurred in this agreement which allows tribal water to be exchanged and utilized by non-tribal users for a cash payment. The Agreement, approved by the US Supreme Court in the 2006 decree, essentially provides that the Tribe may, at its sole option, choose to forbear (i.e., not use) its allocation and assign that allocation to MWD for an "add on" to MWD's allocation. This option is solely at the Tribe's discretion and may be utilized on a year-to-year basis. The initial quantity of water available under the Agreement is 13,000 AFY, with an additional 7,000 AFY available in 2035.

Tribal Water Rights

Tribe's Discretion

Payment for Forbearance

Agreement Precedent

Practical Transfer

A Forbearance Agreement is not to be confused with leasing, renting, or sale of water rights, although there are obviously some common elements.

PARAGRAPH 4 OF THE FOREBEARANCE AGREEMENT PROVIDES:

Metropolitan and the Tribe further agree that if the Tribe chooses to limit currently proposed development and utilization of practicably irrigable acreage, which would require the diversion of any of the water available to the Tribe under paragraph 2 above, and instead allows such water to pass through the priority system and be diverted by Metropolitan in accordance with Metropolitan's water storage and delivery contracts with the Secretary of the Interior and related agreements, then Metropolitan agrees to pay the Tribe the rate identified in paragraph 6 below, provided that such water is actually available for use and is received by Metropolitan.

PARAGRAPH 6 PROVIDES:

For purposes of this Agreement, the rate that Metropolitan shall pay to the Tribe for water available to Metropolitan under paragraph 4 above shall be \$_____ per acre-foot of diversions annually [note: actual amount is decided upon, but confidential], escalated at 2.5% per year beginning on the first day of the year following the year that such payments first commence. Notwithstanding any other provision of this Agreement, this paragraph may be amended by the mutual consent of the Tribe, the United States and Metropolitan without the approval of the other Parties to this Agreement.

It is likely that there are substantial quantities of "unused" tribal water available that either the Tribes on the river do not currently use or that may become available as the Tribes' needs change over time. Therefore, Tribes may have additional water that would be available for "allocation" to States or large water districts. The implementation of agreements to implement this, of course, will involve agreement of the underlying fee owner (i.e., United States), but the MWD Agreement certainly provides a meaningful precedent.

CONCLUSION

The very early priority dates of tribal water rights and the quantity of those rights means that Tribes are in a position to insist that their allocations be met. The continuing population growth, drought conditions, and global climate change are resulting in ever-increasing demands for Colorado River water. Such demands can probably not be met without a reallocation of water use and resources. Forbearance Agreements, such as the one entered into by the Quechan Tribe, provide a mechanism for the practical transfer of water from Indian tribes to other entities.

As the need for Colorado River water for southwestern states increases, the availability of tribal water may constitute a viable alternative for additional sources of water for those states.

FOR ADDITIONAL INFORMATION:

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The author wishes to acknowledge and thank Robert Anderson, Esq., for permission to use material from his paper entitled "*The Allocation and Regulation of Water Through Recent Development Under Federal Law and Policy*" December 2000. Mr. Anderson was formerly counselor to Secretary of the Interior Bruce Babbitt. He is currently a law professor at the University of Washington Law School.

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WATER BRIEFS

IRRIGATION EFFICIENCY MT/WY

CONSERVED WATER & RETURN FLOW

In a 7-1 decision, the US Supreme Court (Court) denied Montana's claim that Wyoming breached the Yellowstone River Compact (Compact) by consuming more than its share of the Tongue and Powder Rivers. *Montana v. Wyoming et al.*, Case No. 137, Orig.; 2011 WL 1631038 (5/2/2011). Montana alleged that Wyoming breached Article V(A) of the Compact by allowing its upstream pre-1950 water users to switch from flood to sprinkler irrigation, which increases crop consumption of water and decreases the volume of runoff and seepage returning to the river. By reducing the amount of return flow and thereby decreasing the amount of water flowing downstream, Montana alleged that Wyoming increased its water consumption and deprived Montana of water it was entitled to under the Compact's terms. The Yellowstone River Compact was executed by Wyoming, Montana and North Dakota and ratified by Congress in 1951. 65 Stat. 663.

The Court agreed with the Special Master: "Montana's allegation fails to state a claim because more efficient irrigation systems are permissible under the Compact so long as the conserved water is used to irrigate the same acreage watered in 1950." *Slip Op.* at 1. "We conclude that the plain terms of the Compact protect ordinary '[a]ppropriative rights to the beneficial uses of [water]...existing in each signatory State as of January 1, 1950.' Art. V(A), *ibid.* And the best evidence we have shows that the doctrine of appropriation in Wyoming and Montana allows appropriators to improve the efficiency of their irrigation systems, even to the detriment of downstream appropriators." *Id.* at 19.

Although Justice Thomas' opinion addresses the "no injury rule" that often protects junior priority users and the right to "return flows," it concludes that appropriators may improve the efficiency of their irrigation systems "even to the detriment of downstream appropriators." The crucial caveat of the decision, however, is the limitation that the "conserved water" must be used to "irrigate the same acreage watered in 1950." Thus, Wyoming irrigators cannot expand the amount of their irrigated acreage by using conserved water.

The Court noted that the "law of return flows is an unclear area of appropriation doctrine...Indeed, '[n]o western state court appears to have conclusively answered the question.'" *Id.* at 7, citing Special Master's Report 65. The Court concluded that "[D]espite the lack of clarity, the Special Master found several reasons to conclude that Wyoming's pre-1950 users may switch to sprinkler irrigation. He found that the scope of the original appropriative right includes such a change so long as no additional water is diverted from the stream and the conserved water is used on the same acreage for the same agricultural purpose as before. We agree with the Special Master." *Id.* at 7-8.

Justice Thomas also includes a section on an appropriator's right to "recapture" water before it leaves his/her property and draws an interesting analogy to sprinkler irrigation. "By using sprinklers rather than flood irrigation, those water users effectively recapture water. The sprinklers, by reducing loss due to seepage and runoff, operate much like, if more efficiently than, cruder recapture systems involving ditches or pits." *Id.* at 14.

Finally, the Court rejected Montana's other assertion regarding the Compact. Montana claimed that "the Compact's definition of 'beneficial use' restricts the scope of protected pre-1950 appropriative rights to the net volume of water that was actually being consumed in 1950." *Id.* at 16. The Court, though, agreed with the Special Master that the plain language of the Compact did not support Montana's assertions. "Montana's reading of the Compact, by contrast, does not follow from the text and would drastically redefine the term 'beneficial use' from its longstanding meaning." *Id.* at 17.

For info:

Decision available at:
www.supremecourt.gov/opinions/10pdf/137Orig.pdf

ANTI-SPECULATION CASE CO

NEED & SPECULATIVE SALES

On April 11, the Colorado Supreme Court (Court) affirmed the water court's decision, holding that the proof presented by the Upper Yampa Water Conservancy District (District) was insufficient to establish that it had made the required "first step" to obtain a conditional water right. The Court found the evidence insufficient because the District's "evidence of existing demands included contracts for stored water that had admittedly not yet been put to beneficial use and for which no specific plan for beneficial use was offered, and because the applicant failed to adequately demonstrate a reasonably anticipated future need based on projected population growth..." *Upper Yampa Water Conservancy Dist. v. Dequine Family L.L.C., et al.*, Case No. 09SA118 (CO S.Ct., Apr. 11, 2011) at 17.

The District had appealed an order that dismissed its application for a conditional water right. After presentation of the District's case, the water court granted Dequine Family's motion for determination of a question of law and dismissed for failure of the District to establish a need for water in the claimed amount sufficient to satisfy the requirements of Colorado's anti-speculation doctrine. For details on the anti-speculation doctrine, see Moon, *TWR* #20; Water Briefs, *TWR* #45; Zellmer, *TWR* #50; and Water Briefs, *TWR* #69.

The anti-speculation doctrine was set out by the Court: "It is now too well-settled to merit elaboration that the intent to appropriate water for a beneficial use, proof of which is an integral part of the applicant's obligation to show it has made a 'first step' toward appropriation, cannot be based on the speculative sale or transfer of the appropriative rights." *Slip Op.* at 7-8. The Court clarified that "both the applicable statute and prior case law make clear that a conditional appropriation cannot be based on a sale or transfer of appropriative rights, notwithstanding the existence of firm contractual commitments, in the absence of a specific plan and intent for application of the appropriative waters to a beneficial use." *Id.* at 9.

Municipal water rights distinctions were also discussed. "Although a municipality may be decreed conditional water rights based solely on projected rather than existing needs, its entitlement to such a decree is nevertheless contingent upon a finding that the amount conditionally appropriated is consistent with its reasonably anticipated requirements, based on substantiated projections of future growth." *Id.* at 10. Scrutiny of *existing* water rights is also critical to determine the claimed need for water: "And whether the claimed water is to be applied immediately or stored for a reasonable period first, it cannot be considered intended for a beneficial use if the applicant has already been decreed appropriative rights sufficient for the same use." *Id.* at 11.

For info: Decision available at: www.courts.state.co.us/Courts/Supreme_Court/opinions/2009/09SA118.pdf

www.courts.state.co.us/Courts/Supreme_Court/opinions/2009/09SA118.pdf

WATER BRIEFS

ESA LISTINGS

US

FWS PROPOSED WORKPLAN

On May 10, the US Department of the Interior's Fish and Wildlife Service (FWS) released a work plan designed to allow the agency to focus its resources on the species most in need of protection under the federal Endangered Species Act (ESA).

FWS filed the work plan in a consolidated case in the US District Court for the District of Columbia as part of a proposed agreement with one of FWS's most frequent plaintiffs, WildEarth Guardians. The work plan, if approved by the Court, will enable the agency to systematically, over a period of six years, review and address the needs of more than 250 species now on the list of candidates for protection under the ESA to determine if they should be added to the Federal Lists of Endangered and Threatened Wildlife and Plants.

"In the more than 35 years since its passage, the Endangered Species Act has proved to be a critical safety net for America's imperiled fish, wildlife, and plants," said Deputy Secretary of the Interior David J. Hayes. "For the first time in years, this work plan will give the wildlife professionals of the Fish and Wildlife Service the opportunity to put the needs of species first and extend that safety net to those truly in need of protection, rather than having our workload driven by the courts. It will also give states, stakeholders, and the public much-needed certainty."

Under the proposed work plan, FWS has laid out a schedule for making listing determinations for species that have been identified as candidates for listing, as well as for a number of species that have been petitioned for protection under the ESA. If agreed to by the Court, this plan will enable FWS to again prioritize its workload based on the needs of candidate species, while also providing state wildlife agencies, stakeholders, and other partners clarity and certainty about when listing determinations will be made.

FWS stated that it is the agency's highest priority to make implementation of the ESA less complex, less contentious, and more effective. FWS has begun a review of its implementation of the ESA designed to

identify ways to eliminate unnecessary procedural requirements; improve the clarity and consistency of regulations; engage the states, tribes, conservation organizations, and private landowners as more effective conservation partners; encourage greater creativity in the implementation; and reduce the frequency and intensity of conflicts as much as possible.

The sheer volume and mandatory nature of court orders, settlement-agreement obligations, and statutory deadlines related to petition findings and other listing-related litigation has threatened to consume most of FWS's available funding and staff. In the last four years, FWS has been petitioned to list more than 1,230 species — nearly as many species as have been listed during the previous 30 years of administering the ESA. After numerous lawsuits were filed with respect to these petitions, FWS initiated the consolidation and transfer of pending lawsuits from a number of different district courts to the US District Court for the District of Columbia.

For info: Vanessa Kauffman, FWS, 703-358-2138
FWS website: www.fws.gov/endangered/

CONSTRUCTION DISCHARGE US

EPA PERMIT PROPOSAL

COMMENT PERIOD OPEN

EPA has released for public comment a draft permit for regulating the discharge of stormwater from construction sites. Stormwater discharges during construction activities can: contain sediment and pollutants that harm aquatic ecosystems; increase drinking water treatment costs; and pollute waters that people use for fishing, swimming and other recreational activities.

The proposed Construction General Permit (CGP) includes a number of new requirements for enhanced protection, including enhanced provisions to protect impaired and sensitive waters.

PROPOSED CHANGES ADDRESS:

- Eligibility for emergency-related construction
- Required use of the electronic notice of intent process
- Sediment and erosion controls

- Natural buffers or alternative controls
- Soil stabilization
- Pollution prevention
- Site inspections
- Stormwater Pollution Prevention Plans
- Permit termination

Many of the new permit requirements implement new effluent limitations guidelines and new source performance standards for the construction and development industry that became effective on February 1, 2010. These requirements include a suite of erosion and sediment controls and pollution prevention measures that apply to all permitted construction sites.

The permit will have direct effect in areas where EPA is the permitting authority, including four states (Idaho, Massachusetts, New Hampshire and New Mexico); Washington, DC; most territories; and most Indian country lands. Remaining States and Tribes with federal Clean Water Act permitting authority will eventually have to insure their permits are at least as stringent as EPA's permits.

The public has 60 days to comment on the draft permit, a period which will end in mid-June. EPA anticipates that it will issue the final construction general permit by January 31, 2012.

EPA's current CGP is scheduled to expire on June 30, 2011; however, EPA is proposing to extend the current permit until January 31, 2012 to provide sufficient time to finalize the new permit.

For info: EPA website: <http://cfpub.epa.gov/npdes/stormwater/cgp.cfm>

CWA TREATMENT AS STATE AZ

HAVASUPAI TRIBE CWA AUTHORITY

EPA recently announced the approval of the Havasupai Tribe's application for "Treatment in the same manner as a State" under Section 303 of the federal Clean Water Act (CWA). This decision authorizes the Havasupai Tribe to develop water quality standards in order to protect Tribal waters, which include numerous creeks, springs, and approximately 155 acres of freshwater wetlands.

The Havasupai Tribe will develop water quality standards for their waters, including Havasu Springs which flows into Havasu Creek. Similar to

WATER BRIEFS

the process used by States, proposed tribal standards will be available for public review and comment, and EPA must approve them before they go into effect under the CWA. The Tribe will be responsible for taking enforcement actions when there are violations of the Tribe's water quality standards.

The Havasupai Reservation is located in north central Arizona on the south rim of the Grand Canyon, and spans approximately 185,000 acres. The Reservation contains 139.6 miles of creeks of which 6.4 miles are perennial, 132.4 miles are nonperennial and 0.8 miles are canals. The Havasupai people are called Havasu 'Baaja' or "People of the Blue-Green Waters."

For info: EPA website: www.epa.gov/tribalportal/laws/tas.htm

GREEN CONSTRUCTION AZ TRIBAL COMMUNITY

ADOPTS INTERNATIONAL CODE

Kayenta Township (Ariz.) is the first tribal community in the US to adopt the International Green Construction Code (IGCC) — a building code designed to reduce the environmental impact of construction projects while keeping safety measures intact and enforceable.

EPA's Pacific Southwest Green Building Team worked with Kayenta and works with other tribes and federal agencies to support the development of sustainable building codes that meet tribal priorities. In addition, Kayenta will be working with EPA's Office of Sustainable Communities to pilot community Smart Growth Guidelines for Sustainable Design and Development.

Kayenta Township, a political subdivision of the Navajo Nation with about 5,000 residents, is located south of Monument Valley. Kayenta has been designated as a growth center of the Navajo Nation and hosts restaurants, shops, hotels and other businesses. Kayenta is also the future site of the Northeast Arizona Technical Institute for Vocational Education (N.A.T.I.V.E.) campus. The N.A.T.I.V.E. campus will provide quality career and technical education to tribal students upon its completion in September 2011. This campus will also be the first project built using the IGCC code.

The IGCC Public Version 2.0, which will be published as a model code next year, was adopted on a voluntary basis and may be incorporated into the community's Comprehensive Zoning Ordinance. Kayenta adopted the code with specific requirements related to protecting greenfields, conservation areas, and agricultural land.

For info:

Tribal Green Building Resources: www.epa.gov/region9/greenbuilding/resources.html

EPA Smart Growth Guidelines: www.epa.gov/dced/sg_guidelines.htm

WATER SHARING WEST

WESTERN STATES WATER COUNCIL REPORT

The Western States Water Council's report — "*Agricultural/Urban/Environmental Water Sharing: Innovative Strategies for the Colorado River Basin and the West*" (Report) — is the result of convening representatives from The Nature Conservancy, Family Farm Alliance, Western Urban Water Coalition and two dozen others. The Western States Water Council is the water policy arm for 18 Western Governors.

Colorado State University's (CSU's) Colorado Water Institute facilitated the meetings and produced the Report.

STRATEGIES DETAILED IN THE REPORT:

- Farmers and cities in Arizona trading use of surface water and groundwater to the advantage of both
- Ranchers in Oregon paid by environmentalists to forego a third cutting of hay to leave water in the stream for late summer fish flows
- A ditch company in New Mexico willing to sell shares of water to New Mexico Audubon for bird habitat on the same terms offered to a new farmer to grow cantaloupe
- A California flood control and water supply project creatively managed to meet multiple goals of restoring groundwater, maintaining instream flows for wild salmon and steelhead, and providing water for cities and farms
- Seven ditch companies cooperating in Colorado in a "Super Ditch" scheme to pool part of their water through rotational fallowing, for lease to

cities, while maintaining agricultural ownership of the water rights

REPORT RECOMMENDATIONS:

- Design robust processes that give environmental, urban and environmental stakeholders opportunities to plan together early on, instead of one-sided "decide, announce, defend" processes that frequently result in opposition and polarization.
- Foster a flexible, watershed based approach that can lead to cross-jurisdictional sharing of infrastructure, cooperatively timed water deliveries, and strategies to facilitate real-time, on-the-ground, state-of-the-art water management for optimal benefit of cities, farms, and the environment.
- Break down legal, institutional, and other obstacles to water-sharing strategies by developing criteria and thresholds that protect agriculture, the environment and any third parties to water sharing transactions.
- Experiment with creative approaches such as "water resource sharing zones" that could be set up for trading of water, financial resources, and even locally grown food while encouraging interaction between agricultural, environmental, and urban neighbors.
- Expedite the permitting process when programs or projects have broad support of agricultural, urban, and environmental sectors.
- A governor-championed federal/state pilot review process should be established where a state liaison and a federal designate are appointed to co-facilitate concurrent agency review and permitting without repetitive, costly information exchanges. Permitting is important to protect environmental, economic, and social values, the group agreed, but cumbersome permitting processes often lasting years need an overhaul.

In coming months, group members will meet with environmental, agricultural, and urban groups throughout the Colorado River Basin and the West to encourage further dialogue.

For info: MaryLou Smith, Colorado Water Institute, 970/ 491-5899 or MaryLou.Smith@colostate.edu
Report website: www.cwi.colostate.edu/watersharing/

WATER BRIEFS

AQUIFER RECHARGE WA/ID
COEUR D'ALENE-SPOKANE OPTIONS STUDY

Recharging the Spokane Valley-Rathdrum Prairie (SVRP) aquifer and the Spokane River with groundwater from near the southern portion of Lake Pend Oreille is technically feasible, according to a recently released study. However, having the study results doesn't mean this project will ever be constructed. The study presents an alternative for communities in Idaho and Washington to consider in the future.

The report is called the "*Spokane Valley-Rathdrum Prairie Aquifer Optimized Recharge for Summer Flow Augmentation of the Columbia River*." The research was conducted for the Washington Department of Ecology (Ecology) by the state of Washington Water Research Center at Washington State University.

The research was done as part of ongoing efforts to ensure adequate water supplies in the SVRP aquifer and in the Spokane River in the face of population growth, ever-increasing groundwater pumping, and expected effects of climate change. Large amounts of aquifer pumping have already decreased summer low flows in the Spokane River, the report says.

The Spokane Valley-Rathdrum Prairie aquifer serves nearly 600,000 people in the Coeur d'Alene and Spokane areas. It is a federally-designated "sole-source aquifer," meaning the region has no other sources of water and the aquifer needs special protection.

Given the sole source aquifer designation, few alternatives are available for increasing water supply to the region, the report says. Should conservation efforts fall short of meeting future demand, the pumping project appears to provide a technically viable option for enhancing summer flow conditions in the Spokane River and ensuring adequate water in the aquifer.

However, having the technical feasibility study done does not mean this project would move forward, according to senior hydrogeologist John Covert with Ecology's Water Resources Program in Spokane.

"Knowing that it could be done doesn't mean that it should or will be done," said Covert. "This report simply gives us the technical information so that we can start a regional conversation about how to make up for the effects of groundwater withdrawals on the Spokane River during the critical, summer low-flow months."

The study looked at three alternative sources for water to recharge the aquifer and the drier reaches of the Spokane River: 1) the Spokane River during high flows; 2) pumping aquifer water from a site in Washington up into Idaho; and 3) using groundwater near the southern end of Lake Pend Oreille. The technically preferred source is the latter. Spring runoff water would be piped to Idaho and discharged to the aquifer, arriving in the Spokane River in the late summer.

The report concludes it would be feasible to implement this alternative by constructing a well-field adjacent to the southwestern tip of Lake Pend Oreille and conveying that groundwater down a pipeline to a location near Garwood, Idaho. Then it would be injected back into the aquifer.

Pumping wells next to Lake Pend Oreille would mean lake water would naturally replenish the withdrawn groundwater. Once in the SVRP aquifer, the groundwater would slowly move through the aquifer and end up discharging to the Spokane River, thereby augmenting summer low flows. The aquifer and the Spokane River are often considered one body of water because they flow in and out of each other.

The report indicates it would be cost-prohibitive to use Spokane River water as the source because that water would have to be treated first at considerable cost before being injected into the aquifer. Pumping groundwater from Washington upstream into Idaho to recharge the aquifer would fill in the depression in the aquifer that the pumping would create to supply the water — very little of this water would make it to the Spokane River.

In today's economy, the report concludes that the cost of this project would be approximately \$90 million

plus \$12 to 14 million per year to operate the system.

For info: Jani Gilbert, Ecology, 509/329-3495 or jani.gilbert@ecy.wa.gov
Ecology Study website:
www.ecy.wa.gov/geographic/spokane/svrpa_orsfa.html

WATER USE CURTAILMENT TX**TCEQ CONSIDERS DROUGHT RESPONSE**

Drought conditions are widespread throughout Texas. As a result, in April the Texas Commission on Environmental Quality (TCEQ) informed Texas water rights holders that the agency may need to administer water rights on a priority basis, if drought conditions persist.

TCEQ is responsible for protecting water rights and ensuring that water is only diverted according to permitted levels. Diversions are managed more closely in times of drought, to avoid shortages, based on the priority date of each water right — earliest first. If restrictions become necessary, junior water rights, or those rights issued most recently, are suspended or curtailed before the senior water rights in the area.

Texas water law provides that riparian landowners, those that own land adjacent to a river or stream, have a right, superior to appropriated water rights, to take water from the river or stream for domestic and livestock purposes.

TCEQ will closely monitor drought conditions throughout the state and take actions when necessary to control diversions. The agency will also consult public water systems regarding implementation of their drought contingency plans. These plans manage water usage, reduce peak demand and extend water supplies. Members of the public may be asked to conserve water by limiting outdoor watering.

For info: Andrea Morrow, TCEQ, 512/239-5011

TCEQ Drought Response webpage:
www.tceq.texas.gov/response/drought/

The Water Report

CALENDAR

May 16 MT
Water Quality & Water Quantity in Montana Seminar, Helena. Holiday Inn Conference Ctr. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

May 16-17 NV
Water Reuse & Desalination Research Conference, Las Vegas. South Point Hotel & Casino. For info: www.watereuse.org/foundation

May 16-17 TX
Water Quality Principles Seminar, Austin. For info: Environmental Training Institute, 800/ 481-0321 x311 or www.etietc.com

May 17-18 WA
Exempt Wells Specialty Conference: Problems & Approaches in the NW, Walla Walla. Marcus Whitman Hotel. Sponsored by University Water Resources Research Institutes of NW; TWR's David Moon will be speaking on "Exempt Wells: Old Laws, New Demands." For info: Todd Jarvis, OSU, 541/ 737-4032, todd.jarvis@oregonstate.edu or www.swwrc.wsu.edu/Exempt-Well-Conference

May 18 OR
Water Management, Knowledge & Adaptation: Tensions, Legacies & the Next Big Thing Seminar, Corvallis. OSU, 4-5:30pm. Maria Carmen Lemos. For info: water.oregonstate.edu or 541/ 737-9918

May 18 CA
Effective & Defensible Climate Action Plans Course, Sacramento. Sutter Square Galleria, 2901 K Street. For info: UC Davis Extension, 800/ 752-0881 or www.extension.ucdavis.edu/landuse

May 18-19 CA
Understanding Riparian Processes Course, Davis. 1632 Da Vinci Ct. For info: UC Davis Extension, 800/ 752-0881 or www.extension.ucdavis.edu/landuse

May 18-19 NV
Indian Water Rights & Water Law Seminar, Las Vegas. South Point. For info: Falmouth Institute, http://falmouthinstitute.com/training/public/may/NR002.html

May 19 MT
Gallatin Growth Solutions Water Forum, Bozeman. Strand Union Bldg. MSU. For info: Wendy Weaver, fishgirl@gmail.com or http://gallatingrowthsolutions.org/

May 19 WA
Water Right Transfers 2011 Conference, Seattle. Hotel 1000. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

May 19-20 FL
Regulatory Takings Conference, Tampa. Sheraton Riverwalk Hotel. For info: CLE International, 800/ 873-7130 or website: www.cle.com

May 19-20 OR
Eminent Domain: Current Developments in Condemnation, Valuation & Challenges Seminar, Portland. Embassy Suites Downtown. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

May 19-20 CA
Planning & Environmental Law Course, Sacramento. Sutter Square Galleria, 2901 K Street. For info: UC Davis Extension, 800/ 752-0881 or www.extension.ucdavis.edu/landuse

May 19-20 DC
Water Quality Principles Seminar, Washington. For info: Environmental Training Institute, 800/ 481-0321 x311 or www.etietc.com

May 19-20 FL
Florida Water Law Conference, Tampa. Sheraton Riverwalk Hotel. For info: CLE International, 800/ 873-7130 or website: www.cle.com

May 20 OR
Agricultural Law Section Annual "Round-Up", Salem. Capitol. RE: Water Quality & Flow Issues. For info: Oregon State Bar Section, www.osbar.org

May 20 OR
Fisheries & Hatcheries Legal & Regulatory Frameworks Seminar, Portland. Oregon Convention Ctr. Live Webcast Also. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

May 20 WA
Energy Permitting Seminar, Seattle. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

May 20 CA
Energy Generation Using Anaerobic Treatment of Livestock Wastes Course, Davis. Da Vinci Bldg., 1632 Da Vinci Ct. For info: UC Davis Extension, 800/ 752-0881 or www.extension.ucdavis.edu/landuse

May 22-26 CA
2011 World Environmental & Water Resources Congress, Palm Springs. Convention Ctr. Sponsored by American Society of Civil Engineers. For info: http://content.asce.org/conferences/ewri2011/index.html

May 23-25 CA
6th Int'l Conference on Sustainable Water Resources Management, Riverside. Mission Inn Hotel. For info: www.wessex.ac.uk/11-conferences/waterresourcesmanagement-2011.html

May 24 WA
Addressing Water & ESA Choices Through Expert Science Panels: Lake Washington Ship Canal, Water Quality & Salmon Event, Seattle. Pyramid Ale House, 1201 1st Ave. South. AWWRA-WA March Dinner Meeting. For info: http://earth.golder.com/waawra/ASP/Home.asp

May 24-25 OR
2011 Oregon Water Conference: "Evaluating & Managing Water Resources in a Climate of Uncertainty", Corvallis. OSU. Sponsored by Oregon Section American Water Resources Ass'n. For info: Michael Campana, aquadoc@oregonstate.edu

May 24-25 CA
Integrated Regional Water Management: Working Together for California's Water Future Conference, Sacramento. Radisson Hotel, 500 Leisure Lane. For info: Water Education Foundation, 916/ 444-6240 or www.watereducation.org

May 25 CA
Overview of Water Law & Policy in California Course, Sacramento. Sutter Square Galleria, 2901 K Street. For info: UC Davis Extension, 800/ 752-0881 or www.extension.ucdavis.edu/landuse

May 25 OR
Suprensemble of Regional Climate Model Futures Seminar, Corvallis. OSU, 4-5:30pm. Philip Mote, Oregon Climate Change Research Institute. For info: water.oregonstate.edu or 541/ 737-9918

May 25 WEB
Water Management Webinar: Montana Water Law, WEB. 10-11:30am. For info: Montana Water Ctr, http://water.montana.edu

May 25-27 CA
6th Int'l Conference on River Basin Management: Hydrology, Ecology, Environmental Management, Flood Plains & Wetlands, Riverside. Mission Inn Hotel. For info: www.wessex.ac.uk/11-conferences/riverbasinmanagement-2011.html

May 25-27 WA
Natural Resources Law Teachers Institute, Stevenson. Sponsored by Rocky Mt. Mineral Law Foundation. For info: Mark Holland, RMMFL, 303/ 321-8100 x106, mholland@rmmflf.org or www.rmmflf.org

May 26 CA
NBS Workshop - Water, Sewer & Storm Funding Strategies, Livermore. Martinelli Event Ctr. For info: www.nbsgov.com/registration

May 26 CO
Best Management Practices: What? How? & Why? Workshop, Boulder. Wolf Law Bldg. - CU. For info: www.oilandgasbmps.org/workshops/EFD2011/index.php

May 28 MT
Run for the Rivers, Bozeman. Sponsored by Montana Watercourse & Greater Gallatin Watershed Council. For info: www.runfortherivers.com/

June 1 OR
"How to Solve It" - Tribute to Jim Dooge, Pioneer in Water Systems Analysis Seminar, Corvallis. OSU, 4-5:30pm. Philip O'Kane, University College Cork. For info: water.oregonstate.edu or 541/ 737-9918

June 1-2 CA
Successful CEQA Compliance Seminar, Sacramento. Sutter Square Galleria, 2901 K Street. For info: UC Davis Extension, 800/ 752-0881 or www.extension.ucdavis.edu/landuse

June 2-3 WA
Water Law in Washington Seminar, Seattle. Red Lion Hotel. TWR's David Moon is Speaking on "Guidance From Other States: Potential Models for Resolving Washington Issues". For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

June 2-3 OR
Oregon Wetlands & Aquatic Resources Seminar, Portland. The Benson Hotel. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

June 3-6 SC
National River Rally 2011, North Charleston. Charleston Convention Ctr. Sponsored by River Network. For info: www.rivernetwork.org/events/national-river-rally-2010

June 5-8 CO
MODFLOW & More 2011: Integrated Hydrologic Modeling Conference, Golden. Colorado School of the Mines Campus. International Groundwater Modeling Center. For info: IGMCM, 303/ 273-3103 or http://igwmc.mines.edu/

June 6-7 MD
Chesapeake Bay Watershed Restoration Seminar, Baltimore. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

June 7 WA
Northwest Aquifer Recharge Conference, Olympia. Red Lion Hotel. Sponsored by American Groundwater Trust. For info: AGWT, 800/ 423-7748 or www.agwt.org/

June 7 CO
3rd Annual RiverBank Celebration, Denver. Space Gallery, 765 Santa Fe. Sponsored by Colorado Water Trust. For info: CWT, 720/ 570-2897 or eolson@coloradowatertrust.org

June 8 NE
Water Laboratory Alliance Forum, Omaha. Qwest Ctr., 1:30-3:30pm. Sponsored by EPA. For info: http://water.epa.gov/infrastructure/watersecurity/wla/

June 8-10 CO
Navigating the Future of the Colorado River Basin, Boulder. University of Colorado Law School. For info: Natural Resources Law Center, 303/ 492-1286, nrlc@colorado.edu or www.colorado.edu/law/centers/nrlc/

June 10 CA
Land Use & Water Planning: The California Connection Seminar, Santa Monica. Sheraton Delina. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

June 10 IL
Biomass as a Renewable Energy Source, Chicago. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

June 12-16 DC
American Water Works Ass'n 130th Annual Conference & Exposition, Washington. Walter E. Washington Convention Ctr. For info: www.awwa.org/

June 13-14 CA
California Water Law & Policy Conference, San Francisco. Hotel Nikko. For info: Argent, 800/ 419-2741 or register@argentco.com

June 13-17 OR
Water Governance & Conflict Management Course, Corvallis. Oregon State University. For info: Lynette de Silva, OSU, 541/ 737-7013 or www.transboundarywaters.orst.edu/

June 13-17 MA
Water Diplomacy Workshop: Managing the Science, Policy, & Politics of Water Networks Through Negotiation, Boston. Tufts University. For info: http://waterdiplomacy.org/

June 14-15 WA
Certified Erosion & Sediment Control Lead Course, Issaquah. For info: Northwest Environmental Training Center, 425/ 270-3274 or www.eosalliance.org/schedule/calendar/courses-eos

June 16 WA
Water Solutions 2011 Conference, Vancouver. Hilton Hotel. Sponsored by Northwest Environmental Business Council & The Water Report. For info: Sue Moir, NEBC, 503/ 227-6361, sue@nebc.org or www.nebc.org



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(continued from previous page)

June 16-17 **NM**
Environmental Law on Indian Lands Conference, Santa Fe. Hilton Buffalo Thunder Resort. For info: CLE International, 800/ 873-7130 or website: www.cle.com

June 20-21 **ID**
Idaho Water Users Ass'n Water Law Seminar & Workshop, Sun Valley. Convention Ctr. For info: IWUA, 208/ 344-6690 or www.iwua.org/

June 20-22 **CO**
Integrated Water Resources Management: The Emperor's New Clothes or Indispensable Process - 2011 AWRA Summer Conference, Keystone. Keystone Resort. For info: AWRA, www.awra.org/meetings/Summer2011/

June 21 **CA**
Water/Energy Nexus in California Conference, San Diego. Sheraton Suites at Symphony Hall. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

June 22-24 **UT**
Hydrologic Information System Users Conference, Logan. Utah State University. For info: <http://his.cuahsi.org/userscon2011/>

June 23 **CA**
Climate Change & Local Planning Strategies Course, Sacramento. Sutter Square Galleria, 2901 K Street. For info: UC Davis Extension, 800/ 752-0881 or www.extension.ucdavis.edu/landuse

June 24 **WA**
Solar Power Seminar, Seattle. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

June 27-29 **UT**
2011 AWRA Summer Specialty Conference: Integrated Water Resources Management, Snowbird. Snowbird Resort. For info: American Water Resources Ass'n, www.awra.org/meetings/Summer2011/

June 27-30 **NY**
International Symposium on Bioremediation & Sustainable Environmental Technologies, Reno. Peppermill Resort. For info: www.batelle.org/conferences/bioremediation/

June 29-July 1 **WS**
4th Annual National Ecosystem Markets Conference, Madison. Concourse Hotel. Sponsored by World Resources Institute & American Forestry Foundation. For info: Todd Garner, WRI, 202/729-7843

June 29-July 1 **ID**
Western Governors' Ass'n Annual Meeting, Coeur d'Alene. Coeur d'Alene Resort. For info: WGA, www.westgov.org/

July 12-14 **CO**
2011 UCOWR/NIWR Conference: "Planning for Tomorrow's Water", Boulder. For info: Reagan Waskom, Chair, Reagan. Waskom@colostate.edu or www.ucowr.org

July 14-15 **NM**
Natural Resource Damages Seminar, Santa Fe. Inn & Spa at Loretto. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

July 18-21 **FL**
Membranes Are The Solution Conference, Miami Beach. AMTA/SEDA 2011 Joint Conference. For info: AMTA, 772/ 463-0820 or www.amtaorg.com

July 19-22 **IL**
National Assoc. of Clean Water Agencies Summer Conference, Chicago. For info: National Assoc. of Clean Water Agencies, 202/ 833-2672 or www.nacwa.org



**JUNE 16
2011
VANCOUVER
WASHINGTON**

WATER SOLUTIONS
Innovations in Water Management

Presented by the Northwest Environmental Council and The Water Report
For Agenda & Registration Information: www.nbec.org