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PECOS RIVER COMPACT COMPLIANCE

NEW MEXICO'S COMPLIANCE PROGRAM MEETS WITH SUCCESS

by James C. Brockmann, Stein & Brockmann, P.A. (Santa Fe, NM)

INTRODUCTION

The Pecos River begins in north central New Mexico and drains much of eastern New Mexico before crossing the State's southern border into Texas. In Texas, the river continues on for several hundred miles before flowing into the Rio Grande. The Pecos River Compact (Compact) apportions the water in the Pecos River between the two States. The Compact was authorized by the United States Congress as the Act of June 9, 1949 (63 Stat. 159) following negotiations between the two States. Issues arose over the apportionment provision of the compact almost immediately after authorization. Following decades of contentious debate that included precedent-setting litigation before the United States Supreme Court, the State of New Mexico has fashioned an innovative compliance program to successfully fulfill its Compact obligations.

In 1974, New Mexico was sued by Texas for violating the Compact by failing to deliver water owed to Texas. This *Texas v. New Mexico* suit marked the onset of 14 years of litigation before the US Supreme Court which resulted in four Supreme Court opinions regarding Pecos River Compact liability and enforcement. The *Texas v. New Mexico* case was the first compact enforcement case in the United States. Texas originally claimed depletions of water of 1,200,000 **a**cre-**f**eet (AF) in its complaint and later filed an amendment increasing the claimed depletion for some 1.8 million AF. New Mexico was eventually successful in reducing its liability to Texas from claimed depletions of water of 1,800,000 AF to 340,000 AF for the period 1950-1983, a reduction of over 1.4 million AF. New Mexico paid Texas $14 million for those past over-diversions (depletions). Settlement of liability allowed New Mexico to fashion strategies to meet the now agreed upon delivery obligations to Texas.

The Compact compliance program is successful, having resulted in a 92,000 AF credit for New Mexico as of 2008. It is a model for upstream states to follow when facing shortages of water and compact compliance to deliver water to a downstream state.

This article will provide a brief overview of Compact history and describe the major elements of New Mexico's Compact compliance program.

BACKGROUND

GEOGRAPHY, HISTORY & DEVELOPED USES

The Pecos River rises in the mountainous regions of northern New Mexico, in the vicinity of Pecos, New Mexico, and is fed by numerous mountain tributaries.

Initial development of the Pecos River dates back to the efforts of Francis Tracy, a transplanted New Yorker, who sought to create a vast agricultural empire in the vicinity of

Pecos River Compact

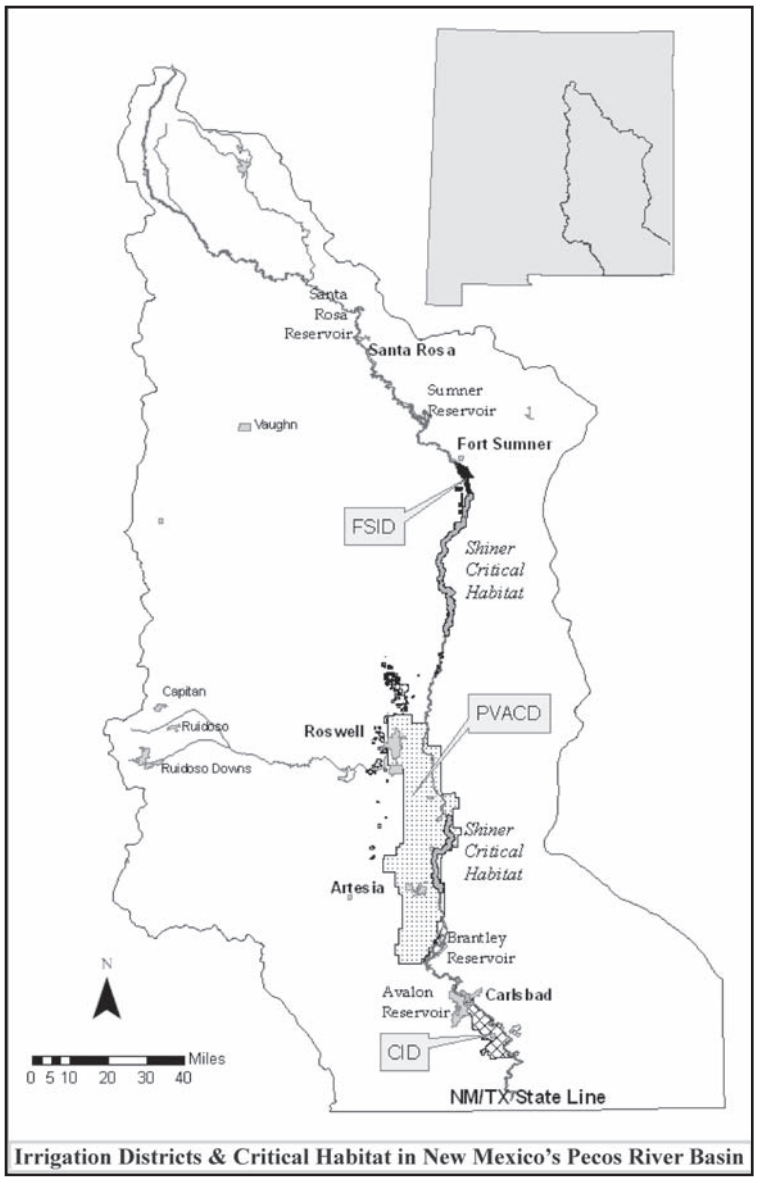
History

Carlsbad, in the New Mexico Territory of the 1890s. Francis Tracy was successful in obtaining funding from Chicago, and as far away as Switzerland, to create the beginnings of what ultimately became the Carlsbad Irrigation District (Hall, G. Emlen, *High & Dry: The Texas-New Mexico Struggle for the Pecos River* (Univ. of New Mexico 2002) at 30). By 1904, the storage and delivery structures on the river consisted of McMillan Dam and Reservoir, the Avalon diversion, and the Carlsbad flume. In October of 1904, a massive flood caused by runoff from a storm badly damaged most of McMillan Dam and Reservoir, and severely damaged the Avalon diversion and the Carlsbad flume. *Id.* at 29-36. The financial setback caused by this flood necessitated the sale of the Carlsbad Project to the United States in 1905. *Id.* at 35-37. Today, the Carlsbad Project stores water behind the Santa Rosa (a Corps of Engineers Dam), Sumner, Brantley, and Avalon Dams to provide water for about 25,000 acres within the Carlsbad Irrigation District (CID). The US Bureau of Reclamation is responsible for the operation, maintenance, and oversight of the Carlsbad Project. CID operates and maintains Sumner and Brantley Dams.

Surface Water Infrastructure

Today, water use in the upper Pecos River (above Fort Sumner Dam) consists of irrigation from numerous *acequias* (community ditches) of Hispanic origin.

The middle Pecos begins at Fort Sumner Dam and Reservoir (formerly Alamogordo Dam and Reservoir), which has a capacity of approximately 44,000 AF and is the most upstream storage reservoir on the system. Some 130 miles south of Fort Sumner Reservoir is Brantley Dam and Reservoir (formerly McMillan Dam and Reservoir), constructed in 1892-1893, which had a storage capacity of 138,000 AF of water when first constructed. That capacity has been greatly reduced by siltation. Between Fort Sumner Reservoir and Brantley Reservoir are the two principal cities in the basin, Roswell and Artesia.



Irrigation Districts & Critical Habitat in New Mexico's Pecos River Basin

The lower Pecos River begins at Brantley Reservoir. Six miles below Brantley Reservoir is Avalon Dam and Reservoir, which has a capacity of 4,600 AF. This facility serves to regulate water distribution and acts as an outlet for water going to the irrigated acres in CID. Below Avalon Reservoir are the town of Carlsbad and CID-irrigated acreage. Below CID, the river curves through the Malaga Bend before reaching the state line between Texas and New Mexico. Immediately south of the state line is Red Bluff Reservoir which serves irrigated acres above Girvin, Texas.

Groundwater Development

Groundwater development in the Roswell Artesian Basin, upstream of CID, began around the time the United States took ownership of the Carlsbad Project (*Geology and Ground-Water Resources of the Roswell Artesian Basin*, New Mexico, Fiedler, A.G, and Nye, S.S, USGS Water Supply Paper 639 (1933)). Local geology and hydrology allowed for artesian wells to be constructed and utilized for irrigation beginning shortly after the turn of the century.

The Water Report
(ISSN 1946-116X)
is published monthly by
Envirotech Publications, Inc.
260 North Polk Street,
Eugene, OR 97402

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Subscription Rates:
$249 per year
Multiple subscription rates available.

Postmaster: Please send address corrections to
The Water Report,
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Eugene, OR 97402

Pecos River Compact

Sources of Supply

Irrigation Districts

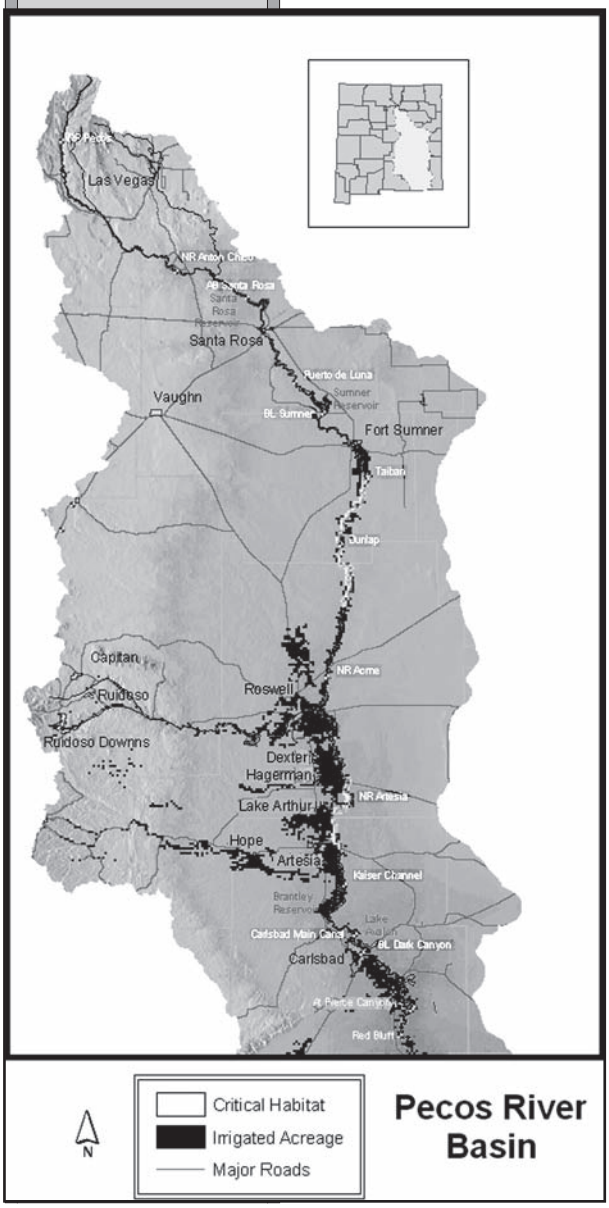
Conjunctive Administration

Groundwater use continued to increase in the Roswell Basin over the years, aided by technological developments such as turbine pumping engines. The Basin has both shallow and artesian groundwater which are considered separate sources of supply under New Mexico law. Surface water is another separate source of supply. The New Mexico Office of the State Engineer's website includes a definition for Tributary Ground Water: "Water below the Earth's surface that is physically or hydrologically connected to natural stream water so as to affect its flow whether in movement to or from that stream." In New Mexico, artesian groundwater is generally considered not to be hydrologically connected to surface water.

Irrigation

There are three major areas of irrigation along the Pecos River in New Mexico, as defined by the three irrigation districts (see map, page 2). In the far-northern portion of the middle Pecos lies Fort Sumner Irrigation District (FSID), with 4,100 acres of irrigated land. South of FSID is the Pecos Valley Artesian Conservancy District (PVACD), whose water users divert groundwater to irrigate approximately 115,000-125,000 acres from the shallow and artesian aquifers. PVACD's water users have junior priority water rights compared to downstream surface water irrigators. South of PVACD is CID with 25,025 acres of irrigated land served by surface water from the Pecos River. CID has the senior priority water rights from the river.

As development of the surface water and groundwater development continued, the State of New Mexico was developing a framework for water administration that focused on the administration of groundwater rights due to the declining artesian head in the Roswell Artesian Basin. New Mexico's first groundwater code, promulgated in 1927, was declared unconstitutional on legal technicalities. See *Yeo v. Tweedy,* 34 N.M. 611, 286 P. 970 (1929). These problems were addressed and the groundwater code was re-enacted in 1931. This enactment was subsequently declared constitutional and is still in existence today. New Mexico's groundwater code extends State Engineer jurisdiction to groundwater basins "having reasonably ascertainable boundaries." (NMSA 1978, § 72-12-1 (1931)). The Roswell Artesian Basin was declared by the State Engineer on August 21, 1931, and there have been subsequent extensions of that groundwater basin on various dates since. Since 1963, groundwater and surface water in New Mexico have been conjunctively administered where they are hydrologically connected. See *Albuquerque v. Reynolds,* 71 N.M. 428, 379 P.2d 73 (1963).



INTERSTATE APPORTIONMENT

THE PECOS RIVER COMPACT

The Pecos River Compact (Compact) established a procedure whereby the water in the Pecos River was apportioned between the States of New Mexico and Texas. This apportionment was not expressed as an absolute amount or as a percentage of flow. Instead, the Compact created an apportionment of the Pecos River based on what was deemed to be the "1947 condition" of the river (Act of June 9, 1949 (63 Stat. 159)). In simple terms, the Compact sought to preserve the two States' utilization of the river, relative to each other, as it existed in 1947, taking into consideration different identified flow conditions.

"1947 Condition" Basis

Compact Article III(a) states:

> Except as stated in paragraph (f) of this Article, New Mexico shall not deplete by man's activities the flow of the Pecos River at the New Mexico-Texas state line below an amount which will give to Texas a quantity of water equivalent to that available to Texas under the 1947 condition.

The exception in paragraph (f) apportioned "unappropriated flood waters" — i.e. river flow in excess of other Compact obligations — equally between the two states.

Pecos River Compact

Flood Waters

1947 Condition

Equal apportionment of "unappropriated flood waters"

Compact Article II(i) states:

> The term "unappropriated flood waters" means water originating in the Pecos River Basin above Red Bluff Dam in Texas, the impoundment of which will not deplete the water usable by the storage and diversion facilities existing in either state under the 1947 condition and which if not impounded will flow past Girvin, Texas.

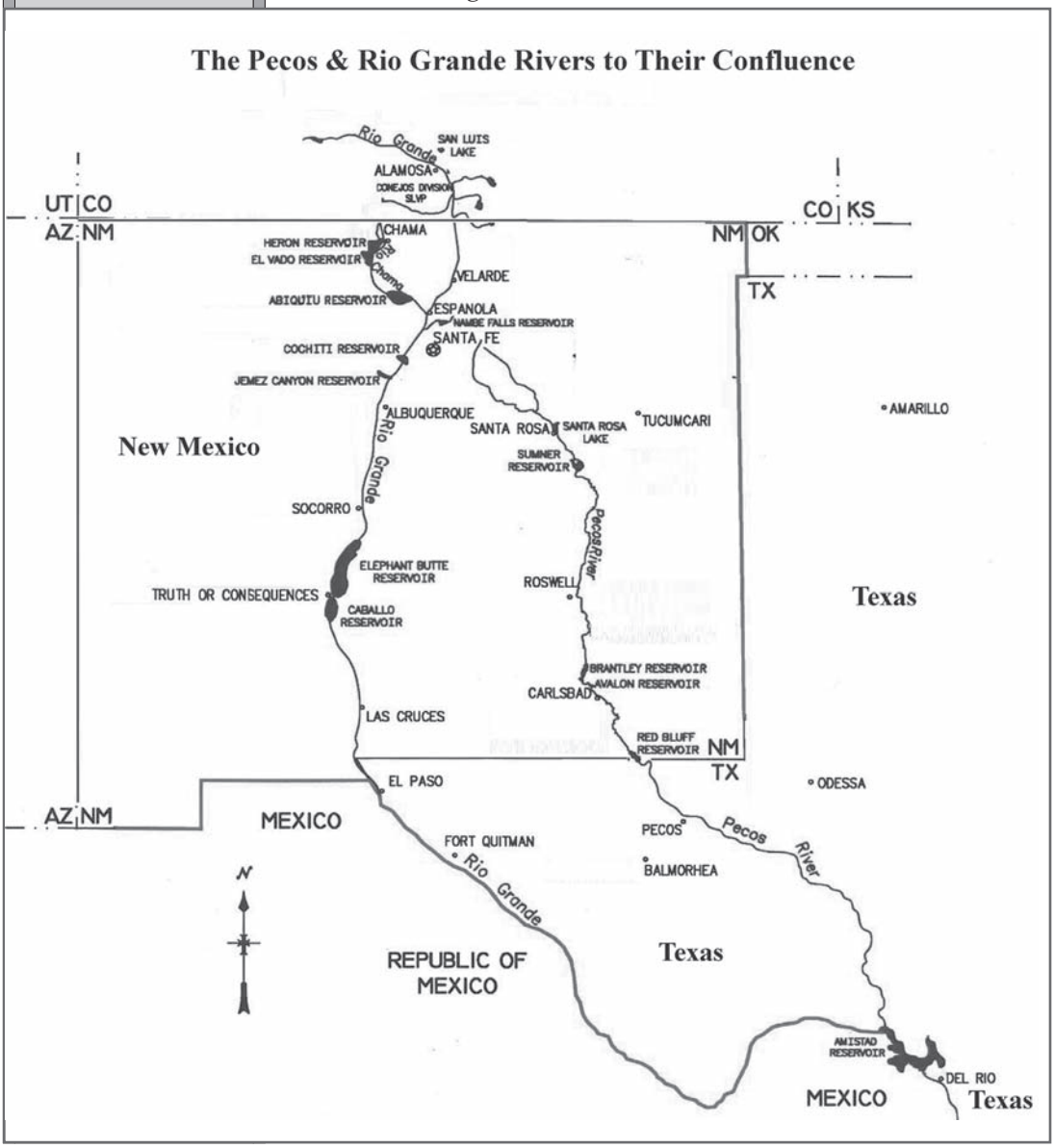
Compact Article III(f) states:

> Beneficial consumptive use of unappropriated flood waters is hereby apportioned fifty per cent (50%) to Texas and fifty per cent (50%) to New Mexico.

"1947 Condition" Elements

In Compact Article II(g), the "1947 condition" was defined as "that situation in the Pecos River Basin as described and defined in the Report of the Engineering Advisory Committee."

The Report of the Engineering Advisory Committee incorporated numerous technical studies going back to 1942. The National Resources Planning Board's 1942 survey of the basin, entitled *Regional Planning, Part X: The Pecos River Joint Investigation in the Pecos River Basin in New Mexico and Texas (Pecos River Joint Investigation)*, described the basin conditions in terms of stream flow, groundwater usage, and irrigation demand. The Compact Commission's engineering advisory committee, including Royce Tipton (quoted below) who served as the federal engineering representative, utilized data from the *Pecos River Joint Investigation* to prepare a series of routing studies. Tipton had also chaired the *Pecos River Joint Investigation*.



The routing studies were intended to show how much water would reach the New Mexico-Texas state line (Red Bluff) under six conditions applied to historical river flows. Condition No. 1 represented actual conditions on the River with Alamogordo, McMillan, Avalon, and Red Bluff Dams in place, and with existing irrigation demands in New Mexico and Texas — but with base flow in the Roswell area reduced by groundwater pumping from wells and with flood inflow reaching the river as it would under natural conditions. The remaining five conditions added and subtracted dams and varied salt loads in the river to approximate different versions of "man's activities" on the Pecos (*See* S. Doc. No. 109, 81st Cong., 1st Sess., 9-11 (1949)). The routing studies were accompanied by a *Manual of Inflow-Outflow Methods of Measuring Changes in Stream-flow Depletions (1948)* (*Inflow-Outflow Manual*) to be used in determining how much water Texas should receive over any particular period under the conditions prevailing in New Mexico in 1947.

Pecos River Compact

However ambiguous its apportionment provision, the Pecos River Compact attempted to impose a specific delivery operation upon the State of New Mexico. The deliverable amount of water to Texas was not intended to be fixed, unlike provisions in other interstate compacts. Under the terms of the Colorado River Compact, for example, the Upper Colorado River Basin has an obligation to deliver 7,500,000 AF of Colorado River water each year to the Lower Basin states at Lee Ferry (Colorado River Compact, Art. III(a)).

Delivery Operation

In comparison, Royce Tipton described Pecos River Compact apportionment thusly:

> There is apportioned to Texas the water which is equivalent to that which was being received by Texas under the 1947 condition. And on the other side of the picture, by implication, there is apportioned to New Mexico that which she was using under the 1947 condition. Article III states that New Mexico shall not deplete by man's activities the flow of the Pecos River at the New Mexico-Texas state line below an amount which would give to Texas a quantity of water equivalent to that available to Texas under the 1947 condition. That again does not mean that year in, year out Texas will receive or New Mexico will consume the average amount of water that New Mexico was consuming under the 1947 condition. That means…that with the water supply of a given year, whether the supply is low in that given year or whether it is high, Texas will receive essentially the same quantity of water that she received under 1947 conditions with the same type of year occurring.
> [Hall at 66-67, citing "Minutes" December 4, 1948, NMPRC 18-20.]

In other words, the apportionment provision in Article III(a) was intended to create a kind of proportion that would enable the two states to use the amount of water that they were using under 1947 river conditions applied to six different flow scenarios described by the Browning studies.

"Man's Activities"

"Man's Activities"

A principal component of the apportionment created by Article III(a) was that the depletions not occur due to "man's activities." This reference to "man's activities" was to distinguish them from naturally occurring water depletions, such as depletions arising from deep-rooted plants (phreatophytes) or salt cedars that consumed water from the Pecos in New Mexico. Thus, the Compact did not charge New Mexico with depletions in outflows that were due to the consumption of water by salt cedars.

INTERSTATE DISPUTES & SUPREME COURT DECISIONS

Texas' Concerns

Soon after the Compact was authorized in 1949 Texas became concerned about the amount of water it received at the state line. As the United States Supreme Court would later state: "[I]t became clear soon after the Compact went into effect that the 1947 Study and, more importantly, the tables in the Inflow-Outflow Manual did not describe the actual state of the river. In almost every year following adoption of the Compact, state-line flows were significantly below the amount that one would have predicted on the basis of the Inflow-Outflow Manual, with no obvious change either in natural conditions along the river or in 'man's activities.'" *Texas v. New Mexico,* 462 U.S. 554, 560 (1983).

Shortfall Discrepancy

In response to this problem, the Pecos River Compact Commission in 1957 authorized a "Review of Basic Data" to attempt to create a more accurate description of the "1947 condition." This led to the conclusion that there had been shortfalls of some 53,000 AF in the period 1950-1961. However, at the special meeting of the Pecos River Compact Commission in July of 1970, the Texas commissioner calculated that according to the original Inflow-Outflow Manual, there had been a cumulative shortfall in state-line flows of 1.1 million AF for the years 1950-1969, and that the Review of Basic Data was "incomplete and replete with errors." *Id.* at 561-62. All attempts at mediation failed. The Commission took no action because of its political voting formula, which required unanimous consent for Commission action. The United States was a non-voting member.

Texas' Lawsuit

Lack of agreement led the State of Texas to file suit against the State of New Mexico in the United States Supreme Court (Court). Beginning in 1974, various Compact issues were litigated before the Court over a period of fourteen years. This litigation resulted in several reported opinions from the Court, including: *Texas v. New Mexico,* 446 U.S. 540 (1980); *Texas v. New Mexico,* 462 U.S. 554 (1983); *Texas v. New Mexico,* 482 U.S. 124 (1987); and *Texas v. New Mexico,* 485 U.S. 388 (1988). These reported opinions established several key principles for future original actions in interstate water disputes.

Pecos River Compact

Compact Enforcement

***Texas v. New Mexico*, No. 65, Original**

Texas filed suit against the State of New Mexico in June of 1974, alleging that New Mexico had breached its obligations under Article III(a) by "countenancing and permitting depletions by man's activities within New Mexico to the extent that from 1950 through 1972 there has occurred a cumulative departure of the quantity of water available from the flow of the Pecos River at the Texas-New Mexico State Line in excess of 1,200,000 acre-feet from the equivalent available under the 1947 condition… ." *Texas v. New Mexico,* 462 U.S. 554, 562 (1983). Texas sought a decree committing New Mexico to deliver water in accordance with the Pecos River Compact. The United States intervened. Leave to file the complaint was granted and a Special Master was appointed. *Texas v. New Mexico,* 446 U.S. 540 (1980).

Jurisdiction

***Texas v. New Mexico*, Second Opinion**

In the Court's second opinion in *Texas v. New Mexico,* 462 U.S. 554 (1983), the Court overruled New Mexico's objections that the Court's jurisdiction was limited to determining if the Compact Commission action was arbitrary or capricious. The Court concluded that its original jurisdiction "to resolve controversies between two States, U.S. Const., Art. III, § 2, cl. 1; 28 U.S.C. § 1251 (a)(1), extends to a properly framed suit to apportion the waters of an interstate stream between States through which it flows, *e.g., Kansas v. Colorado,* 185 U.S. 125, 145 (1902), or to a suit to enforce a prior apportionment, *e.g., Wyoming v. Colorado,* 298 U.S. 573 (1936)," including rights under a compact. *Id.* at 567. The Court ruled that: "If there is a compact, it is a law of the United States…and our first and last order of business is interpreting the compact." *Id.* at 567-68. The Court noted that "if all questions under the Compact had to be decided by the Commission in the first instance, New Mexico could indefinitely prevent authoritative Commission action solely by exercising its veto on the Commission." *Id.* at 568.

Remedy for Shortfalls

***Texas v. New Mexico,* Third Opinion**

In its 1987 opinion in *Texas v. New Mexico,* 482 U.S. 124 (1987), the Court addressed the Special Master's finding that New Mexico had defaulted by 340,000 AF for the period 1950-1983, and his recommendation that the Court order New Mexico "to make up the accumulated shortfall by delivering 34,010 acre-feet of water each year for 10 years, with a penalty in kind, *i.e.,* 'water interest,' for any bad-faith failure to deliver these additional amounts." *Id.* at 127-28. The Court held that there was no merit to New Mexico's contention that the Court may order only prospective relief and may not provide a remedy for past breaches of the Compact. *Id.* The Court held that "[w]e find no merit in [New Mexico's] submission that we may order only prospective relief, that is, requiring future performance of compact obligations without a remedy for past breaches. If that were the case, New Mexico's defaults could never be remedied." *Id.* at 128.

New Mexico contended that it be afforded the option of paying monetary damages rather than paying in kind, *i.e.,* in water. The Court noted that "this possibility was discussed to some extent in hearings before the Master, who more than once stated that damages might be best for both parties." *Id.* at 129-130. The Court concluded that a remedy, either in water or money, was appropriate. *Id.* at 130. This issue was remanded to the Special Master for further proceedings.

River Master

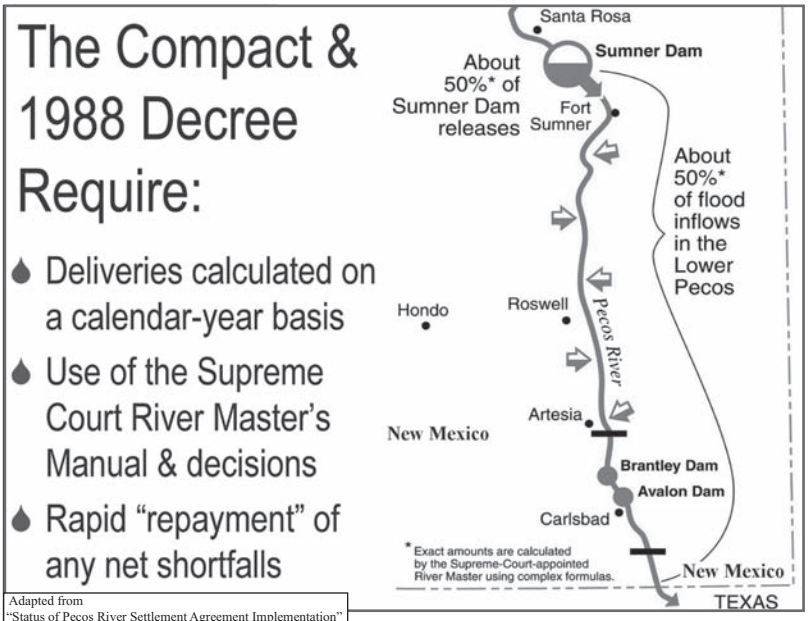
***Texas v. New Mexico*, Fourth Opinion**

Upon remand, a stipulated judgment was entered under which New Mexico agreed to pay $14 million to Texas. In the Amended Decree that was contained in the fourth opinion, *Texas v. New Mexico,* 485 U.S. 388 (1988), New Mexico was enjoined "to comply with Article III(a) of the Pecos River Compact and to meet the obligation thereof by delivering water to Texas at state line as prescribed in this Decree." *Texas v. New Mexico,* 485 U.S. at 389, ¶ II(A)(1). The Court retained jurisdiction "for the purpose of any order, direction, or modification of the Decree, or any supplementary decree, that may at any time be deemed proper… ." *Id.* at 394, ¶ V.

The Court adopted the Special Master's recommendation that a River Master be appointed in this case, and held that on remand the River Master:

1) Calculate in accounting year 1988, beginning with water year 1987, and continuing every year thereafter, pursuant to the methodology set forth in the Manual:
   (a) The Article III(a) obligation;
   (b) Any shortfall or overage, which calculation shall disregard deliveries of water pursuant to an Approved Plan;
   (c) The net shortfall, if any, after subtracting any overages accumulated in previous years, beginning with water year 1987.

Id. at 391, ¶ III(B).



Adapted from
"Status of Pecos River Settlement Agreement Implementation"
Presentation to the Association of Western State Engineers
By Gregory Ridgley, Chief Deputy Counsel,
NM Office of the State Engineer, May 17, 2005

A "shortfall" is defined as "the amount by which the water delivered by New Mexico in any water year fell short of the Article III(a) obligation for that year." *Id.* at 389, ¶ I (A)(4). An "overage" is defined as "the amount of water delivered by New Mexico in any water year which exceeded the Article III(a) obligation for that year." *Id.* at 389, ¶ I (A)(3).

In the event of shortfalls of water delivered to Texas, the Amended Decree required New Mexico to propose a plan for increasing the amount of water at the state line by March 31 of the following year by the amount of the shortfall. *Id.* at 390-391, ¶ II(A). The criteria for a shortfall plan are set forth in the Amended Decree.

Overages of water delivered to Texas may be cumulative, i.e. they may be accrued over several years and used to offset annual shortfalls. *Id.* at 391, ¶ III(B)(1)(c). In other words, the Amended Decree allows New Mexico to accumulate credits, but not debits.

PECOS RIVER COMPACT COMPLIANCE PROGRAM

Pecos River Compact

New Mexico's Choice

As is true throughout the American West, in New Mexico rights to the use of water are administered by the State under the Prior Appropriation Doctrine. Simply put, this doctrine gives "senior" rights prioritized access to use set amounts of water dependent upon how early-in-time individuals or entities first put the water to beneficial use. Thus, "junior" rights can be curtailed to insure the full entitlement of senior rights during dry years. However, interstate compact obligations are not necessarily subject to such time-dependent prioritization and a State's obligations under a compact may supercede claims to water established prior to a compact. Thus, a State might fulfill its interstate compact obligations by simply curtailing junior water rights under the Prior Appropriation Doctrine, i.e. using the water represented by those rights to insure the required amount of water flows through to the downstream state. As described below, New Mexico decided on a less disruptive course and established a compliance program that is expressly designed to better protect its citizen's interests.

Legal Authority to Ensure Compliance

New Mexico's authority to administer the Pecos River to meet interstate compact obligations is established in federal law. In *Hinderlider v. La Plata & Cherry Creek Ditch Co.,* 304 U.S. 92 (1938), the Supreme Court affirmed that:

Compact Apportionment

> Whether the apportionment of the water of an interstate stream be made by compact between the upper and lower States with the consent of Congress or by a decree of this Court, the apportionment is binding upon the citizens of each State and all water claimants, even where the State had granted the water rights before it entered into the compact. That the private rights of grantees of a State are determined by the adjustment by compact of a disputed boundary was settled a century ago in *Poole v. Fleeger*, 11 Pet. 185, 209, 9 L.Ed. 680, where the Court said: "It cannot be doubted, that it is a part of the general right of sovereignty, belonging to independent nations, to establish and fix the disputed boundaries between their respective territories; and the boundaries so established and fixed by compact between nations, become conclusive upon all the subjects and citizens thereof, and bind their rights; and are to be treated, to all intents and purposes, as the true and real boundaries. This is a doctrine universally recognized in the law and practice of nations. It is a right equally belonging to the states of this Union… ." *Id.* at 106-07.

Compliance Program Overview

Dual Purposes

New Mexico's compact compliance efforts on the Pecos have been intended to keep its irrigators fully compensated for investments that they made in their farming enterprises under color of New Mexico state law while also meeting interstate compact delivery obligations to Texas.

Pecos River Compact

Key Components

Primary components of the compliance program include:

- the early lease of surface water rights to prevent an initial under-delivery to Texas
- the later purchase of surface water and groundwater rights for fair market value from willing sellers to establish a sustainable balance between New Mexican water use and Compact delivery obligations
- the construction and use of well fields that divert artesian groundwater, when necessary for river augmentation using purchased water rights to prevent under-deliveries

Compliance Efforts in the 1980s and 1990s

Adjudication

As the Supreme Court cases noted above continued to progress, New Mexico began preparing for aligning its administration of water use under the Prior Appropriation Doctrine with its obligations under the Compact. Water right claims undergo judicial review (adjudication) to finally determine the extent and priority date of the rights. Adjudication is typically a lengthy process. The adjudication of the Pecos River Basin began in 1956 and continues to this day (see *State ex rel. Reynolds v. Lewis,* 84 N.M. 768, 508 P.2d 577 (1973)). This incomplete adjudication added to the complexity of the situation.

CID's Priority "Call"

In 1976, the Carlsbad Irrigation District (CID) placed a priority call on the Pecos River. [Editor's note: a "call" on the river is a request by a senior water user for the regulating authority to shut off junior water users so that the senior can obtain the full amount of their water rights.] With Supreme Court litigation pending, the New Mexico State Engineer sought to revise the usual adjudication procedure to allow the adjudication court to curtail water users with priorities junior to January 1, 1947, even though the Basin's adjudication process was incomplete. This process required junior users to show cause in individual proceedings as to why their water use should not be curtailed. Water right claimants were also allowed to challenge the water rights of the downstream, senior surface water user, i.e. CID. Due process challenges to this revised adjudication procedure were dismissed by the New Mexico courts. *State ex rel. Reynolds v. Pecos Valley Artesian Conservancy District*, 99 N.M. 699, 663 P.2d 358 (1983). While this revised approach to the New Mexico Pecos River adjudication was legally validated, New Mexico did not immediately institute this procedure, seeking less problematic solutions instead.

Curtailment Alternative

State Engineers Steve Reynolds and Eluid Martinez were responsible for the early formulation of a compliance program alternative to curtailment of junior rights. Both of these State Engineers contemplated the purchase of upstream groundwater rights that entailed diversion (pumping) close to the river. Suspending this pumping would increase river flow to CID. They reasoned that if CID received its full entitlement (i.e. all of the water they were entitled to by virtue of their senior water rights) that the return flows from CID's irrigation would be sufficient to meet Compact delivery requirements to Texas. If necessary, leased water rights could then be used to avoid any potential compact delivery shortfalls on an annual basis.

Economic Impact of Call

In 1991, not long after New Mexico paid Texas the $14 million as a remedy for past over-diversions and before a long-term compliance program could be initiated, New Mexico was faced with the immediate prospect of under-delivery to Texas. The New Mexico State Engineer commissioned a study regarding the technical and economic feasibility of instituting a priority call on the river. The study indicated that curtailment of junior priorities on the river would result in $ 0.5 billion economic loss to the State of New Mexico. Moreover, the only feasible way to increase river flows quickly was to curtail diversions from CID, the downstream, senior surface water user. The Pecos River would not experience immediate hydrologic gains by curtailing diversions of junior, upstream groundwater users. To avoid an under-delivery to Texas in 1991, the New Mexico State Engineer reached an agreement with CID to lease surface water and the New Mexico Legislature agreed to fund the lease (NMSA (1978), § 72-1-2.2 (1991)).

Legislature's Intent

When funding the 1991 lease legislature specifically stated that:

- This shortage of water and the state's obligation to Texas…is a statewide problem affecting all the citizens of the state.
- The state's obligations extend not only to Texas but also to the citizens of New Mexico and their future generations to ensure adequate water supply. If unfulfilled, the obligations of the state to Texas could cost the state millions of dollars in lost revenues, employment and economic productivity.

NMSA (1978), § 72-1-2.2 (1991)

These initial compliance efforts were critical to avoid an early under-delivery to Texas under the Pecos River Compact.

Pecos River Compact

Leased Stored Water

Consensus Plan

Purchases

Augmentation Wells

Legislative Conditions

Compliance Purpose

Land & Water Rights

Compliance Efforts in the 2000s

Pecos River Ad Hoc Committee & Consensus Plan

In 2001, the New Mexico Interstate Stream Commission (ISC) established a Pecos River Ad Hoc Committee. The membership included representatives from the Pecos River basin irrigation districts, cities, mining, dairy, and oil and gas industries, and state agencies. The objectives of the Ad Hoc Committee were to develop a plan to avoid compact delivery shortfalls to Texas in 2001 — which were imminent — and to develop a long-term plan for New Mexico to achieve compliance with the Pecos River Compact.

With the support of two unanimous resolutions of the Pecos River Ad Hoc Committee in 2001, the State of New Mexico leased 9,000 AF of water stored by CID in Brantley Reservoir to prevent a shortfall in that year. This short-term objective was achieved because of the commitment of all parties to craft a long-term plan to ensure compact compliance.

In early 2002, the Pecos River Ad Hoc Committee reached a Consensus Plan for bringing the Pecos River into balance and ensuring New Mexico's compliance with the Pecos River Compact. The Ad Hoc Committee agreed that "priority" administration of the Pecos River would cause too much hardship and inequity.

In short, the major components of the Consensus Plan were the purchase and retirement of groundwater and surface water rights and the utilization of augmentation well fields.

The solution set forth by the Ad Hoc Committee included:

1) the purchase of 6,000 acres of irrigated farmland within CID and delivery of the related water rights to the state line for compact compliance
2) the purchase of water rights appurtenant to 12,000 acres of irrigated farmland above Brantley Reservoir (within PVACD) to reduce depletions of water and to bring the Pecos into permanent balance with New Mexico's entitlement to water
3) the construction and operation of augmentation well fields to divert 20,000 AF per year from artesian wells within the Roswell Artesian Basin to supplement the water supply for downstream senior water users and for compact compliance

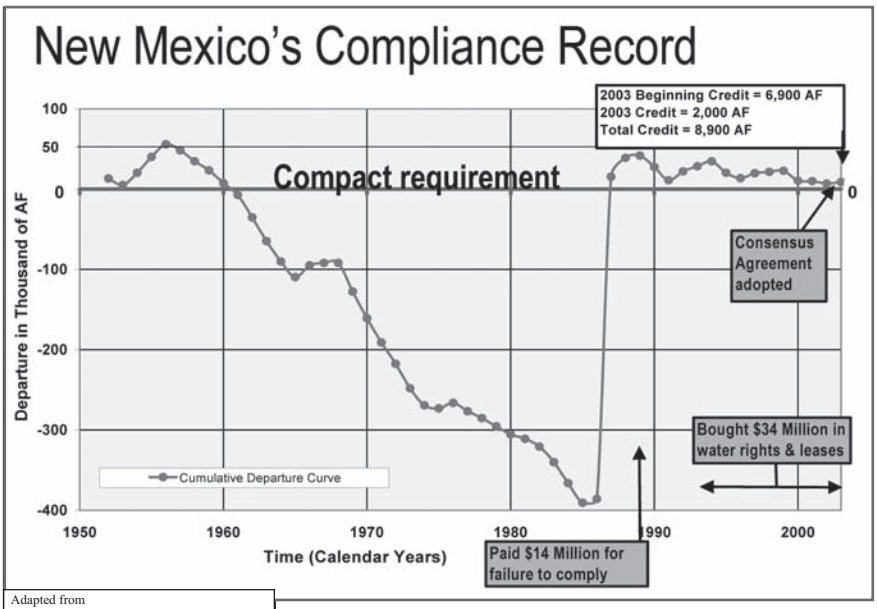
The estimated cost of the Consensus Plan was $68 million. The Plan also included a provision that if New Mexico achieved a delivery credit of 115,000 AF, some of the purchased water rights should be returned to beneficial use. This Consensus Plan was taken to the New Mexico Legislature in 2002.

Pecos River Compact Compliance Program

In 2002, the New Mexico Legislature passed a law authorizing the Consensus Plan, with additional conditions (NMSA 1978, § 72-1-2.4 (2002)). First, before money was expended, it required that contracts be entered with CID, PVACD, and FSID, to ensure that the agreed upon program would result in effective and permanent compliance with New Mexico's obligations under the Pecos River Compact. Second, another condition precedent to spending money was the adjudication of CID's water rights. Third, the Legislature required the purchase of land and not just the appurtenant water rights separated from the land. The Legislature authorized the purchase of up to 6,000 acres of assessed land with appurtenant water rights in CID and 12,000 acres of land with appurtenant water rights above Brantley Reservoir (within PVACD). With these additional conditions, the resulting program became known as the Pecos River Compact Compliance Program (Compliance Program).

The authorizing statute states that the Compliance Program's purpose "is to achieve compliance for the Pecos River Compact, establish a base flow of the Pecos River of 50 cubic feet per second at the Artesia Bridge, and provide a reliable annual irrigation supply of 90,000 acre-feet of water for delivery of three acre-feet per acre of irrigated land in the Carlsbad Irrigation District, and for adequate water to fulfill delivery requirements to the Texas state line pursuant to the Pecos River Compact." *Id.*

In 2006, the New Mexico Legislature created a Pecos River Basin Land Management Fund to manage the land that was purchased under the Compliance Program (NMSA 1978, § 72-1-2.5 (2006). Importantly, in 2008, the New Mexico Legislature removed the requirement that the ISC buy and maintain the land with appurtenant water rights, allowing ISC to buy only water rights and to sell land that it had already purchased under the original statute (NMSA 1978, § 72-1-2.6 (2008)). The 2008 statute required that where water rights were severed from the land, the tract of land contain a deed restriction to ensure that no new water use or development occur without a transfer of valid and existing water rights.



Adapted from
"Status of Pecos River Settlement Agreement Implementation"
Presentation to the
Association of Western State Engineers
By Gregory Ridgley, Chief Deputy Counsel,
NM Office of the State Engineer, May 17, 2005

Pecos River Compact

Program Details

CID Water Rights

Purchase Criteria

Fair Market Value

Settlement Agreement and Partial Final Decree

To satisfy the conditions precedent for the funding of the Compliance Program, a Settlement Agreement was negotiated and entered into on March 25, 2003, among ISC, PVACD, CID, and the United States (which has an interest in CID as a federal reclamation project). A separate agreement was entered that same day between ISC and FSID. The parties also agreed upon a Partial Final Decree adjudicating the water rights of CID. CID was recognized as having 25,055 irrigated acres, with an initial priority date of 1888.

The parties to the Settlement Agreement set forth conditions precedent to the agreement. One condition precedent was the acquisition of 4,500 acres of land on the assessment rolls of CID entitled to the delivery of Project water and 7,500 acres of irrigation water rights in the Roswell Artesian Basin (PVACD). In other words, these acreage figures are minimums that trigger implementation of the Settlement Agreement as the State continues to progress toward the ultimate acreage figures set forth in the statute. In addition, the New Mexico Interstate Stream Commission (ISC) was to construct or purchase wells sufficient to augment the flows of the Pecos River up to a minimum capacity of 15,750 AF per year.

The Settlement Agreement contains substantial details that further define the Compliance Program, including provisions related to: 1) pumping of supplemental wells within CID; 2) ISC water right acquisition, sale back, and lease back; 3) status of ISC-owned CID surface water delivery rights; 4) transfers of allotments within CID; 5) the parties agreement on *inter se* challenges; 6) augmentation pumping; 7) limitations on CID's and the United States' priority calls pursuant to the Partial Final Decree; 8) Pecos River Decree shortfall conditions; 9) proposed revisions to the duties of the River Master; and 10) interim measures.

To facilitate the basin-wide approval of the Settlement Agreement and Partial Final Decree adjudicating CID's water rights, the adjudication court entered an Order to Show Cause, initiating a process whereby those with objections could argue why those agreements should not be accepted by the court. Five objections were filed by water users in the basin and three of those were ultimately settled. The remaining two objectors to the Settlement Agreement and Partial Final Decree had their challenges resolved by the district court on motions for summary judgment, which were upheld on appeal. *State ex rel. Reynolds v. Lewis*. 2007-NMCA-008, 414 N.M. 1, 150 P.3d 375.

Implementation of Purchase Program

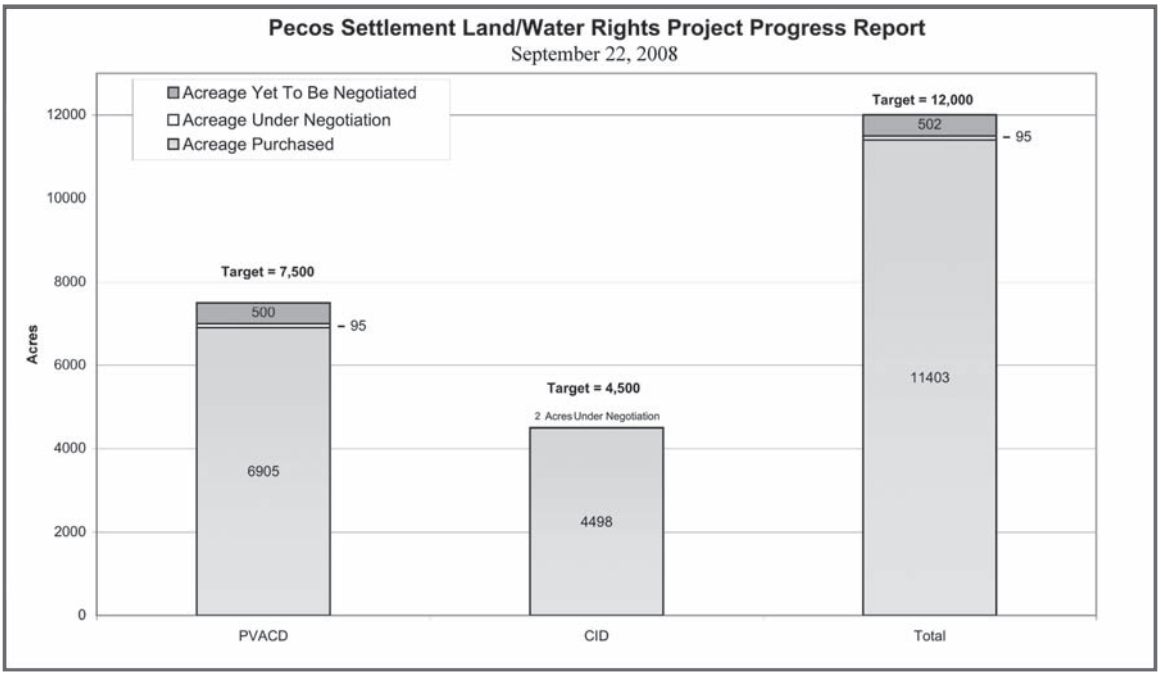
The ISC undertook a very complex and detailed program to purchase land and appurtenant water rights pursuant to the Compliance Program and Settlement Agreement. The process was initiated, according to the statute, with the ISC preparing "a comprehensive request for bids from owners of land with appurtenant water rights or rights to the delivery of water [who] shall evaluate and compare the bids and shall make offers to contract in response to the bids." NMSA 1978, § 72-1-2.4 (2002).

Criteria contained in the requirements for the bids included:

- providing for competition among the owners of land from whom bids were requested
- criteria to address the priority of the purchases based on the effectiveness of the purchased land with appurtenant water rights or rights to the delivery of water in increasing flows of the Pecos River and to address the different value of water rights associated with the degree of seniority of the water rights
- providing for the purchase of water righted land assessed by CID
- providing for the purchase of land upstream from CID in amounts necessary to comply with the statute

The ISC had a consultant conduct a study to determine fair market value for various categories of water rights. Different prices were established for various categories of water rights. Distinctions included: whether water rights were surface water rights or groundwater rights; whether groundwater rights were artesian groundwater rights or shallow groundwater rights; priority; proximity to the Pecos River; whether there were supplemental wells associated with surface water rights; and the size of the parcel.

Pecos River Compact



Due Diligence

Once price guidelines were established, purchase agreements were negotiated and due diligence reviews were undertaken. Preliminary analysis was done on each water right to ensure that there were no "fatal flaws" to their validity before additional due diligence work went forward. Final due diligence analyses were made of all water rights, including any corrective actions that were necessary. Ultimately, each transaction went before the governing body of the ISC for approval prior to closing.

Purchases Status

To date, New Mexico has purchased 4,498 irrigated acres with appurtenant water rights in CID and 6,995 acres in PVACD. Accordingly, New Mexico has reached the minimum acreage required to be purchased as a condition precedent in the Settlement Agreement within CID and is within 500 acres of reaching the minimum in PVACD.

The State has constructed the Seven Rivers augmentation well field and it is operational. The other sites for delivery of augmentation water into the Pecos River are the Lake Arthur Well Field and delivery through the Hagerman Canal.

CONCLUSION

Delivery Credit

The New Mexico State Legislature has appropriated approximately $100 million for the Compliance Program and New Mexico now has a credit of 92,000 AF. Since New Mexico's debt to Texas based on Compact compliance was extinguished, the State has not been in default in its water delivery obligations to Texas. As the program progresses, New Mexico's objective must be to bring the Pecos River into balance to avoid under-deliveries to Texas. At the same time, for the benefit of the State, New Mexico must ensure that it fully beneficially uses its entitlement under the Pecos River Compact.

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New mexico state engineer's pecos river compact website: www.ose.state.nm.us/isc_pecos_river_compact.html

An earlier version of this article was presented at ABA's 27th Annual Water Law Conference on February 19, 2009 and is being reprinted with the permission of the American Bar Association.

James C. Brockmann is a shareholder in the firm of Stein and Brockmann, P.A., located in Santa Fe, NM. The firm's practice is limited to water law. Members of the firm have participated in five original actions related to interstate water disputes, including both interstate compacts and equitable apportionment court decrees. Other areas of expertise within the firm include federal reserved water rights, regional water planning, transactional work involving water rights, water rights adjudications in state and federal court, water rights transfers, applications for new or supplemental water rights, applications for return flow credits, water rights planning studies, 40-year regional water plans, 40-year municipal water plans, water/wastewater regulatory issues, abstracting water right files, water rights opinion letters, Endangered Species Act/water issues, Clean Water Act and Safe Drinking Water Act issues, water rights legislation, international water issues, and water rights mediation. The firm represents many of the major municipalities in New Mexico. Mr. Brockmann has written and spoken extensively on New Mexico water rights matters.

Colorado Water

Colorado Water Congress

Funding Availability

Vulnerable Programs

Water Education

WATER PLANNING & UNCERTAINTY

COLORADO PERSPECTIVES

AN UPDATE FROM THE COLORADO WATER CONGRESS' ANNUAL MEETING

by Dr. Cat Shrier, Watercat Consulting (Washington, DC)

Introduction

More than 500 water providers, agency personnel, policymakers and other water stakeholders, gathered in Denver, Colorado, January 29-30, 2009, to explore issues and alternatives to Colorado's pressing water needs under conditions of uncertainty. Referring to the nickname for large water providers as the "water buffaloes," the Colorado Water Congress chose the theme of "Water Buffaloes in the Mist" for their 51st Annual Convention — a theme that reflects the experience of western states in addressing water planning issues during this uncertain financial, political, and hydrologic climate. To gain a better understanding of economic and political constraints on water planning and development, the attendees heard presentations from state and federal legislators and agencies, as well as representatives from advocacy organizations representing western water interests in Washington, DC. Attendees shared their experiences with, and perspectives on, water planning under conditions of uncertainty through 14 concurrent sessions that featured more than 40 individual presentations and discussion panels.

State and Federal Legislators

Several state and federal legislators addressed the conference, including a panel led by the Colorado Water Resources Review Committee Chairs, Representative Kathleen Curry and Senator Jim Isgar, who were joined by Representatives Sal Pace and Randy Baumgardner. One overriding concern of the legislators, a concern which was evident throughout the conference, was the current economy's impacts on the availability of funding for the State of Colorado's (State's) water agency programs.

Like many states, Colorado requires a balanced State budget and forbids the State from taking on debt. This requirement has resulted in the need for the current legislative session to reduce the current fiscal year 2009 budget — reflecting the shortfall in state revenues — at the same time as it is developing the fiscal year 2010 budget. As often occurs during economic downturns, State funds created for long-term planning and development of water projects, including monies collected from the Severance Tax on extractive activities such as mining, become viewed as potential sources for covering the shortfall in general fund revenues. Constraints on the State's spending flexibility — such as those created by the "Taxpayer Bill of Rights" or "TABOR" laws — create limitations on funds available for water planning, water rights administration, species conservation, and other Colorado Department of Natural Resources programs.

Water programs seen as funding-vulnerable include:

- Administration of water rights by the Colorado Division of Water Resources, which is largely paid for under the General Fund
- Technical and financial support for water planning, provided through the Colorado Water Conservation Board (CWCB) to the Basin Roundtables, through which water users work collectively to identify water use priorities and opportunities to work across basin lines through Colorado's Interbasin Compact Committee
- CWCB Construction Fund loans and grants for individual water projects throughout the State, which largely receive funds from the Severance Tax

While the Legislative Breakfast highlighted the water knowledge embodied in select members of the Colorado General Assembly, the keynote address by Colorado House Speaker Terrance Carroll emphasized the importance of more general water education for members of the legislature, who still struggle to understand the complexities of Colorado water law and water history. As is true for many members of the legislature, and Colorado's population as a whole, Speaker Carroll found the State's approach to water law to be "messy" and the fights to be "vicious," with individual water issues creating alliances that tend to be based less on party politics than on regional concerns. Depending upon the issue, water bills may result in changing alliances, such as the teaming up of the West Slope with the Front Range against the Eastern Plains, or the Eastern Plains with the San Luis Valley. Despite the temptation for legislative leadership to stay out of these issues and let the water interests "figure it out themselves," the Speaker recognized the impact water issues have on all aspects of State government, such as the budgetary impacts of expenditures required by Colorado for litigation with other states on interstate compact issues. Speaker Carroll stressed the need for the State to come together and find common ground, and the need for the water community, through the Colorado Water Congress, to continue to work with all legislators to help clarify these complex water issues.

Colorado Water

Stimulus Bill

US Congressman John Salazar addressed the group and discussed the federal stimulus package as it pertains to Colorado's economic crisis. The American Recovery and Reinvestment Act ("Stimulus Bill"— since passed) includes funds to support "shovel-ready" water projects in Colorado. Communicating the new administration's concerns regarding transparency and accountability in spending, Representative Salazar noted that the recovery process will take several years but that there is "a big difference between throwing money down a bottomless pit and taking money to invest in America." He discussed the need for job creation through projects, particularly on infrastructure. He emphasized the opportunity for the debt incurred from recovery spending to be paid back through income taxes when jobs are created. Funds for local water projects would be available for grants, without matching or loan requirements, through state revolving loan funds using existing formulas. The avoidance of earmarks would benefit rural populations with fewer representatives in Congress. Representative Salazar recognized that, in representing the third district of Colorado, he is "filling big shoes" by holding the seat once held by House Interior and Insular Affairs Committee Chairman Wayne Aspinall.

Aspinall Award

Chairman Aspinall's importance to water issues in Colorado and throughout the West was recognized again during the closing luncheon, where the annual Aspinall Award was presented by former Commissioner of Agriculture Don Ament to Former Colorado State Senate President Pro Tem Tillman "Tillie" Bishop, in recognition of his contributions in water and natural resources development during his many years in the State legislature. Senator Bishop, as well as Former State Senator Lewis Entz, recognized the wisdom and political acumen of Chairman Aspinall, who stressed the importance of leveraging the political system, maintaining a good relationship between the east slope and west slope of Colorado, recognizing the regional nature of water, and paying attention to the "citizen on the street" and concerns of grassroots water users. Outgoing CWC President Steve Fearn and incoming CWC President Sara Duncan were also recognized for their role in continuing Colorado's water heritage.

Planners' Foresight

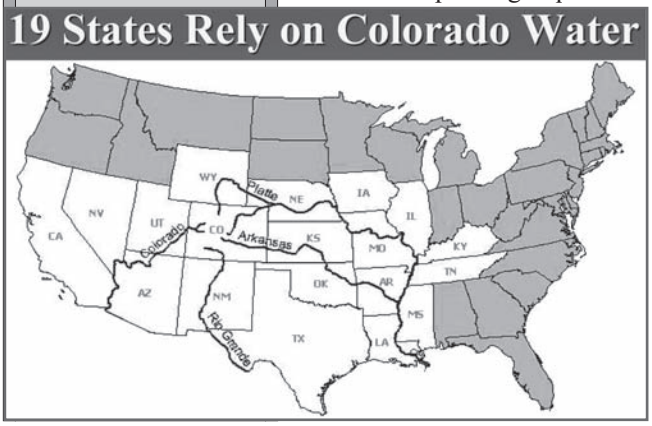
Former US Senator Hank Brown reminded the audience of the critical role that planners with "great foresight" had played in transforming Colorado's landscape. He noted that many who have called for Colorado's rivers to "go back to nature" are not aware of the history of Colorado's natural resources, stating that in the original landscape, "there weren't any trees, bushes, or vegetation — it was a land that only its mother could love." He described the heroes of Colorado's water history as making the land "more beautiful and environmentally friendly" than before, and called for continued forethought in approaches to alternative energy sources, such as hydropower, in order to leave the world a better place.

Forests' Role

Federal Directions

With more than 35% percent of Colorado comprised of federal lands, the Colorado Water Congress invited several federal agencies to provide their insights. Rick Cables, Regional Forester for the US Forest Service (USFS), cited USFS founder Gifford Pinchot's quote — "no forests, no rivers" — in recognizing the role of forests in capturing snow, filtering water, and delivering water to streams. The impact of forests on water supplies will be more deeply felt as "our forests are in trouble; our water supplies and water quality are in trouble as a result." Describing the forests as "the water towers of the West," Cables noted that the populations of 140 counties in 10 states receive water supplies that originate in Colorado's forested headwaters. USFS forested lands yield one in five gallons of US water supplies, and 68% of Colorado's water supplies. Cables noted the commitment to increased partnerships between USFS and the communities that benefit from waters that originate in the forests. While funds may be available from federal stimulus spending, he noted that contributions from water users who receive their supplies from rivers that originate in forested headwaters — such as Denver, Phoenix, and Los Angeles — can offset much of the spending required for maintenance of forests that impact water supplies.

Beetle Kill



Adaptation of forest management practices to address climate change is being addressed by USFS, but there are several other water issues facing the agency as well. In particular, Cables recognized the massive impact to forested lands in Colorado from over two million acres of dead trees killed by mountain pine beetles that "will soon fall to the forest floor and, at some point, catch on fire, baking the soil, killing every organic thing in the soil, and removing the top level minerals in the soil through intense fires" like those seen during Colorado's 2002 drought. He foresaw further impacts on water supplies from reduction of winter snowpack, with no trees to hold and shade it. Spring rains may also race down denuded slopes, flooding communities at lower elevations. While similar events have happened in the past, Cables noted that the current amount of acreage of dead trees is at a scale not previously seen

Colorado Water

in the State's history and stressed the need for forest management changes. Recent studies by USFS have recognized that the blood of the pine beetles "turns to antifreeze" enabling them to survive under the bark for short cold periods. As this generation of pine trees (the beetle's food source) disappear and a new generation of trees grow, Cables said that USFS is looking ahead to management approaches to prevent the hazards of having another generation of trees that are all the same age. In response to questions from the audience, Cables also addressed the need for financing to support the development of businesses for harvesting and processing of timber created by pine beetle kills. The wood product industry's infrastructure needs to be in place to process the timber quickly before the wood becomes rotten.

BLM Issues

Another federal agency that plays a large role in land and water management is the Bureau of Land Management (BLM). BLM has the responsibility nationally for more land and resources than all other natural resource agencies combined, including 260 million surface acres and 70 million acres of subsurface mineral rights. As noted by Colorado's State Director for BLM, Sally Wisely, BLM is responsible for 8.5 million surface acres and 30 million acres of mineral estates within Colorado. She noted that, while most often not serving as "water towers" like USFS lands, BLM lands include 648 miles of floatable rivers, and many popular recreation lands. An important task facing BLM is the remediation of historic mining sites and the associated degradation of water quality. To address abandoned mines, BLM is leveraging resources with local communities, as is the case with the Town of Silverton and the mining impacts on the Animas River. Management of riparian health along rivers that run through BLM lands is another high priority, with $2.2 million annually having been spent on management actions and projects to improve riparian health (such as elimination of tamarisk and Russian Olive trees). BLM's Healthy Lands Initiative takes a "landscape" look at land management, focusing on projects to improve conditions in watersheds and waterways. BLM has other programs to address water quality, such as the regional watershed monitoring efforts in the Piceance Basin, and programs to reduce salinity. Emergency stabilization projects are also critical following fires to prevent erosion and invasive species. BLM has worked in conjunction with permit holders of range land in the Front Range to manage grazing, perform watershed assessments on 500,000 acres, and ensure that grazing routines maintain the health of the watersheds.

Mining Remediation

Oil Shale Water Needs

Wisely noted that a framework exists for land management agencies to address the needs of energy, recreation, and livestock grazing — while taking into account water, soil, wildlife, cultural resources, and other resource values. The 2005 Energy Policy Act directed development of oil shale land leases, and environmental impact statements have been initiated for five projects on public lands. Questions have arisen regarding the water needs for these projects. The environmental impact assessments are designed to address the impacts of oil shale and determine if development is feasible. Research and development activities for oil shale currently underway in Colorado will investigate water demands needed for full scale development, which will be an important factor considered when determining whether or not commercial developments will be feasible. Alternative energy resource development on BLM lands is also a major consideration. There are 2.3 million acres nationwide scheduled just for solar projects, and many other interested parties are approaching BLM for wind and geothermal projects. BLM will conduct the same analysis for these projects as for traditional energy projects, and will also consider the impacts associated with additional energy transmission lines to be developed on BLM lands.

Alternative Energy

Reclamation's Perspective

The US Bureau of Reclamation (Reclamation) also plays a critical role in Colorado's water supplies, particularly with respect to the Colorado River — which supplies both the western and eastern portions of the State. Larry Walkoviak, Upper Colorado Regional Director for Reclamation, identified three priorities from his agency's perspective. Reclamation's first priority is proper maintenance of existing projects. While the Animas La Plata Project in southwestern Colorado is one of Reclamation's newest projects, much of Reclamation's other infrastructure was built in the 1950s or earlier, and a reliable funding base is critical to ensuring that these facilities are adequately maintained. Another critical concern for Reclamation is the day-to-day operation of projects and the need for the agency to adapt its operational approaches to stay current with contemporary needs and issues. The best solution to many of the challenges facing Reclamation is an adequate water supply, and the agency is waiting to see whether this year's above-normal snowpack will remain long enough in the right places to provide runoff at the right time of year.

Climate Change

As with the other federal agencies, Reclamation is working with climate change adaptation modeling. Reclamation is partnering with universities and contract holders to refine global climate models to the Colorado River Basin and subbasins, such as the watershed above the Aspinall Unit in Colorado. These models are used in current operations and in National Environmental Protection Act (NEPA) studies that have been completed for some of the Colorado River's large projects (e.g. Flaming Gorge), or are underway (e.g. the Aspinall Unit, with a draft environmental impact statement to be released for comment in early 2009). Because of the need for rapid consideration and integration of weather information into Reclamation's operational decisions, the agency has had an employee working at the National Weather

Colorado Water

Lakes Mead & Powell

Service since the mid-1990s, who reviews river forecasts and snowtel (snowpack) readings daily. This close working relationship has become even more critical with the integration of climate change considerations.

Reclamation is also incorporating the new equalization rules for joint operation of Lake Powell and Lake Mead. The equalization rules consider storage and elevation in both Lake Powell and Lake Mead, and based upon the April 1 forecast additional water may be released from Lake Powell for storage in Lake Mead. When these rules were developed, modeling studies had projected that the rules would be used in a relatively small portion of annual reservoir operations; however, above normal run-off in 2008 resulted in the use of these new rules the very first year they went into effect. The latest 24-month study of flows indicates that the equalization rules are likely to be put into effect this year as well. [See Reclamation website: www.usbr.gov/lc/region/programs/strategies/news.html]

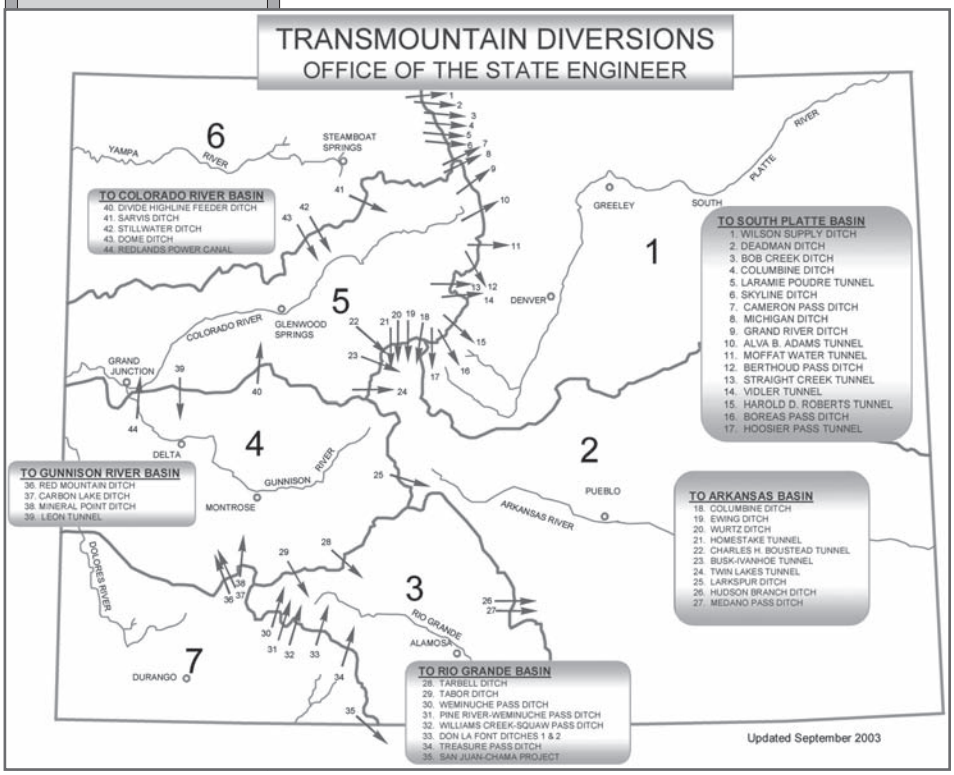
Public Opinion on Water Issues

Insights into the Political and Public Opinion Landscape

An understanding of current public opinion was provided by Colorado pollster Floyd Ciruli. Providing perspective on the public concerns regarding water supplies in this political climate, Ciruli provided a presentation of "What Coloradans Think About Water." Ciruli has presented a series of polls since 2002 on water issues in Colorado in the face of the changes in the political environment of water since the drought Colorado experienced earlier in the decade. In general, the public believe water — its supply and quality — is extremely important. They also support a number of important principles of good water management and investment. The importance of water was reflected by 2008 Colorado poll data indicating that a dependable water supply was considered to be the number one policy needed to maintain jobs and a strong economy. In fact, water supply concerns rated higher than K-12 education, highways, and higher education. An adequate water supply was identified by 98% of those surveyed as the most important priority for maintaining a strong economy.

Colorado River Compact

Although the general public is not knowledgeable about the details of water policy, they do have strong opinions about the Colorado River. An important aspect of ensuring dependable water supplies is storage of Colorado's entitlement to water under the Colorado River Compact. Ciruli relayed a clarification of Senator McCain's recent comments regarding the Colorado River Compact (as told in a phone interview with the Pueblo Chieftain), in which McCain explained that he was referring to the need for other states, like Colorado, to come together to create projects for their own entitlements, similar to the approach taken in his home state of Arizona with the Central Arizona Project, possibly with support from federal funding. Opinion polls show statewide support for storage for Compact water. More than 70% of Coloradans support additional storage and 82% believe if any of the State's allotment of Colorado River water is flowing out of the State it should instead be kept and used in Colorado.



Interest in water within the State has increased as a new "water ethic" has developed. In surveys of several parts of the Front Range, between 63-78% of Coloradans stated that they felt the State was still in a drought, and 2/3 attempted to reduce their water use. Northern Colorado residents felt that water projects were also needed to preserve agriculture and remain sustainable, with agricultural lands seen as an important means of preserving open space as well as having economic value. [Editor's Note: Ciruli's website also noted that when asked whether "the State of Colorado should build additional water storage projects to store runoff water for later use" nearly three-quarters (73%) of voters answered in the affirmative, while thirteen percent indicated that they believed Colorado already had sufficient storage. See Ciruli Associates: www.ciruli.com]

In the Denver suburbs of Douglas County, which has relied on agriculture-to-urban transfers to meet some of its

Colorado Water

Cooperation with Agriculture

water needs, public opinion has heavily favored working with agricultural communities to share water, through methods such as rotating fallowing of croplands, rather than transferring water permanently from agricultural lands. Water cooperation was also seen as important within Northern Colorado, where roughly 80% of people surveyed in Larimer and Weld Counties felt that the cooperation between urban areas and agricultural communities was an important benefit of the Northern Integrated Supply Project (NISP). Sharing water among towns and farms, businesses and recreation, and regional cooperation and a sense of collaboration among water providers are highly supported by Coloradans.

Western Water Organizations

For ongoing insights into legislative and administration issues at the state and federal level, several organizations that represent western water interests in Washington, DC were invited to present at the conference.

National Water Resources Association (NWRA)

NWRA Executive Director Tom Donnelly described the activities of NWRA, which is a federation of state associations and caucuses, principally in the western US (including the Colorado Water Congress (CWC)).

NWRA has focused on policies that impact water supply in the western states.

CWA Amendment

Aquatic Herbicides

Aging Infrastructure

NWRA's HIGH PRIORITY CONCERNS INCLUDE:

- Potential amendments to the Clean Water Act, including companion bills by Chairman Oberstar and Senator Feingold that address the definition of "waters of the United States" covered under the act
- Review by the new administration of rules promulgated throughout the Bush administration, including rules developed to address the use of aquatic herbicides following extensive work by NWRA and other organizations with Congress and the US Environmental Protection Agency (EPA)
- Funding for maintenance and repair of ageing infrastructure, including major rehabilitation that is needed for Reclamation projects. Concerns include funding for projects in regions where partner water districts cannot afford to pay for repairs, and a funding mechanism through which contract holders can pay back federal allocations on rehabilitation projects.

WESTCAS

The Western Coalition of Arid States (WESTCAS) is providing a voice for the arid west regarding water quality and quantity issues, according to their President Charles Nylander. WESTCAS includes more than 125 member agencies from water and wastewater agencies, districts, consultants, and attorneys, from eight western states. One WESTCAS goal is advocacy for laws, regulatory standards and policies that provide for environmentally sound, science-based protection and wise use of water resources in the unique arid west ecosystems. The organization also provides Washington, DC-based legislative advocacy for federal funding for water quality and quantity issues, programs, and infrastructure in arid west states. To support these efforts, WESTCAS' volunteer membership with water, wastewater and reclaimed water experience, provide focused white papers and congressional testimony.

WESTCAS Activities

WESTCAS'S WORK HAS INCLUDED:

- Drafting proposed amendments to the federal Clean Water Act
- Settling a lawsuit against EPA regarding the Whole Effluent Toxicity (WET) Test
- Filing a lawsuit against EPA regarding the arsenic standard for drinking water
- Submitting testimony on numerous congressional authorization and appropriation bills
- Providing comments on proposed EPA regulations and standards

Sustainable Supply & Infrastructure

In particular, WESTCAS has supported a recently completed EPA-funded study on ephemeral and effluent dominated streams found in the West. With five of the nation's fastest growing states located in the West, WESTCAS expects increasing pressures on water supplies — pressures exacerbated by climate change and long-term drought. Thus, WESTCAS is working on policy development for sustainable water supply beyond the 21st century. Nylander highlighted the need for infrastructure for water supply and wastewater treatment. According to the General Accounting Organization (GAO), $500-800 billion in construction is needed, with $40 billion requested but only $8 billion funded in the latest federal Stimulus package. [For additional information, see www.westcas.org]

Western States Water Council (WSWC), Western Governors Association (WGA) & Western States Federal Agency Support Team (WestFAST)

WSWC was created in 1965 in response to a resolution of the Western Governors Conference, now the Western Governors Association (WGA). Its members are appointed by their respective governors and include representatives from the water quantity and water quality agencies of the 19 western states. WGA Executive Director Pam Inmann, Shaun McGrath, Program Director for Water, Wildlife and Climate Change Adaptation, and WSWC Deputy Director Tony Willardson provided insights into recent work

Colorado Water

by WSWC and WGA on water issues. Inmann noted the pressures on water from population growth in Western states — projected to increase by 42 million people to a total population of 135 million by 2030.

Energy Production

Additional pressure will occur due to energy production. Inmann noted that the West is the nation's energy leader, providing 66% of US coal, 94% of US onshore oil (not including oil shale), and is also leading the nation in production of renewable energy (including 90% of US wind energy, 82% of US solar from photovoltaic cells, 100% of US solar thermal energy, and 100% of US geothermal energy). Several western states, including New Mexico and California, have moved towards increasing requirements for renewable energy from their utility companies. WGA has noted that there are several areas that have a huge potential for renewable energy. However, those areas are remote from Land Serving Entities (LSEs) and available transmission lines. It is the intent of the Renewable Energy Zones (REZ) project to identify those areas and work with the LSEs so that transmission corridors can be identified and transmission capabilities can be built. WGA has also worked extensively on wildlife corridor identification and mapping in the REZ, which are impacted by both growth and energy development, and WGA will continue to do so for the transmission phase.

Demand Challenges

In 2006, WGA and WSWC worked together to determine how best to meet water demands for future sustainability. WGA adopted a report which laid out strategies to address key water demand challenges. Key water sustainability challenges identified by WGA include:

- Growth and water resources planning
- Water data collection, management and presentation
- Indian water rights settlements
- Climate change and variability
- Water infrastructure needs, including emerging water supply strategies such as underground water storage, water reuse, desalinization and weather modification
- Needs of endangered species
- Related issues facing western states due to increasing demand and decreasing water availability

[See *Water Needs and Strategies for a Sustainable Future*; Western Governor's Association, June 2006; available at www.westgov.org/wga/puclicat/Water06.pdf]

Sustainable Future

In June 2008, WSWC prepared a progress report for WGA that included further recommendations for achieving a sustainable water future that was adopted by the governors. This "Next Steps" report (with the same title as the original report) highlighted dozens of "next step" recommendations. The report's #1 recommendation led to the creation of a Western States Federal Agency Support Team (WestFAST), formed through a declaration of cooperation signed by nine federal agencies — US Army Corps of Engineers; Reclamation, US Geological Survey, US Fish and Wildlife Service, and BLM (all in the Department of the Interior); the National Oceanic and Atmospheric Administration (NOAA), EPA; and, within the US Department of Agriculture, both the USFS and the Natural Resources Conservation Service. WestFAST will work with WGA and WSWC to implement the Next Steps report recommendations and to ensure greater coordination among the federal agencies themselves. The WestFAST agencies are also providing support for a Federal Liaison officer, Ms. Jonne Hower, who is working out of WSWC's offices in Utah.

Recommended "Next Steps"

Other WGA next steps recommendations included:

#2) Urge Congress to require federal water resources agencies to include "integrated water resources planning and assistance" in their mission

#3) Federal agencies should use state water plans to help determine national water policy and priorities that best align federal agency support to states, and inform decision-making regarding regional water issues

Supply & Use Data

WSWC has continued to work to provide advice and analysis for the western governors, and support federal programs and activities needed to ensure western water supplies — including USGS and state programs to gather water supply and use data through snow surveys, streamgaging, and information on evapotranspiration and consumptive water use provided through a thermal infrared sensor on Landsat 5 and 7 (and proposed for Landsat 9). WSWC has worked with WGA to develop the National Integrated Drought Information System, a web portal for state and local decision makers. Integrated water resources planning has been a priority, including integration of and research on emerging technologies (including desalination, water reuse, and weather modification). Another important issue has been the use of Reclamation Fund revenues for construction of projects as part of settlement of Indian water right claims. Reclamation Fund revenues come from oil and gas royalties, and water and power sales, as well as the sale of public lands. WSWC organized a recent conference on climate change, which explored the challenges of scaling global models to local areas. Another important area of coordination with the federal government through WSWC has been exploring the use of state instream flow programs and other tools to address endangered species water needs, in cooperation with USFWS and NOAA Fisheries' programs.

Integrated Planning

Colorado Water

Urban Needs

Water Quality Issues

Water Efficiency

Transmountain Diversions

Front Range Issues

Municipalities and Water Providers Perspective

The concerns of the larger western cities were expressed by City of Aurora Water Director Mark Pifher, speaking on behalf of the Western Urban Water Coalition (WUWC). Urban centers in the West provide water for more than 35 million people. Issues of concern to these cities include providing reliable, sustainable water supplies to enhance western public trust resources and their values. The purpose of these water supplies include not only drinking water, lawn irrigation and other municipal water uses, but also water-dependent recreation, including fisheries, which are an important part of quality of life considerations for urban residents. WUWC members recognize the extensive funding that will be required to replace underground pipes and other aging water infrastructure, and the need to work cooperatively with agricultural interests to find mutually beneficial uses of scarce water resources.

Large municipal water suppliers also have many concerns related to the regulation of water quality. Of special interest are the steps which must be taken to address emerging contaminants, which are not currently regulated but are issues of concern to the public. Endangered Species Act (ESA) issues have also been important for western cities, including the impact of climate change on the location of species habitats, and the impact of the endangered species protections in California's Bay-Delta region on the availability of water supplies. WUWC has also monitored efforts by federal agencies to address how climate change may impact approaches to regulation, as evidenced by EPA's 2008 report on that topic. Several significant issues related to the Clean Water Act have also recently emerged and are being tracked, including the definition of "waters of the United States;" federal agency responses to recent court decisions on NPDES permitting requirements for water transfers; and, under the Safe Drinking Water Act, changes to the long-term disinfection rule and ground water rule.

Through various committees, WUWC members have focused on a wide range of additional issues, such as approaches to increasing water efficiency, including water conservation and reuse. With the current focus on "shovel-ready" water infrastructure projects in a time of scarce financial resources, funding for many "soft" projects such as water conservation may be scaled back. This could have long-term impacts on water supplies. Pifher also noted, on the flip side, that the current economic situation creates excellent conditions for building water infrastructure, since reduced costs for fuel, pipe, concrete, and contracting services will enable cities to stretch their water infrastructure dollars.

Providing a Colorado perspective on urban and other large water providers was Eric Wilkinson, General Manager of the Northern Colorado Water Conservancy District, representing the Front Range Water Council (FRWC). This new organization, formed as an unincorporated nonprofit in 2008, is comprised of member agencies that are all owners, operators, or beneficiaries of transmountain diversions from the mainstem basin of the Colorado River. Its members include Aurora Water, Colorado Springs Utilities, Denver Water, Northern Water, the Pueblo Board of Water Works, Southeastern Colorado Water Conservancy District, and Twin Lakes Reservoir and Canal Company. Members of the FRWC supply water to more than 2/3 of the State's population. While these individual entities have often encountered one another in the "heat of battle in court cases," FRWC enables these entities to work collaboratively toward solutions in areas of common interests (see map, page15).

The challenges of meeting water demands of these populations served by members of FRWC have been compounded by the fact that the members are dealing with issues in the basins where they are located (the South Platte and Arkansas River basins) as well as in the Colorado River basin. Issues they continue to deal with include endangered species, Wild and Scenic Rivers designations, USFS forest management and permitting, and potential issues associated with the Colorado River Compact. Several members of FRWC are developing or have just completed large infrastructure projects to meet current and future water demands. Members are also actively working with Colorado's Inter Basin Compact Committee and the individual Basin Roundtables, and are also very active in exploring alternatives to the potential Wild and Scenic Rivers designation on the mainstem of the Colorado River. FRWC has provided review and comment on rulemaking for the Colorado Water Conservation Board's instream flow program. FRWC members have the experience, and will continue to face the future challenge of meeting water demands for ever-growing populations along the Front Range.

Concurrent Sessions

In the Colorado Water Congress' largest annual convention to date, concurrent sessions provided information on a wide range of water issues and practices in Colorado. One feature that was added this year was a set of facilitated dialogues organized between state water leaders on various topics to provide interactive discussions on water issues.

Colorado Water

Water Transfers

2050 Demands

Energy Impacts

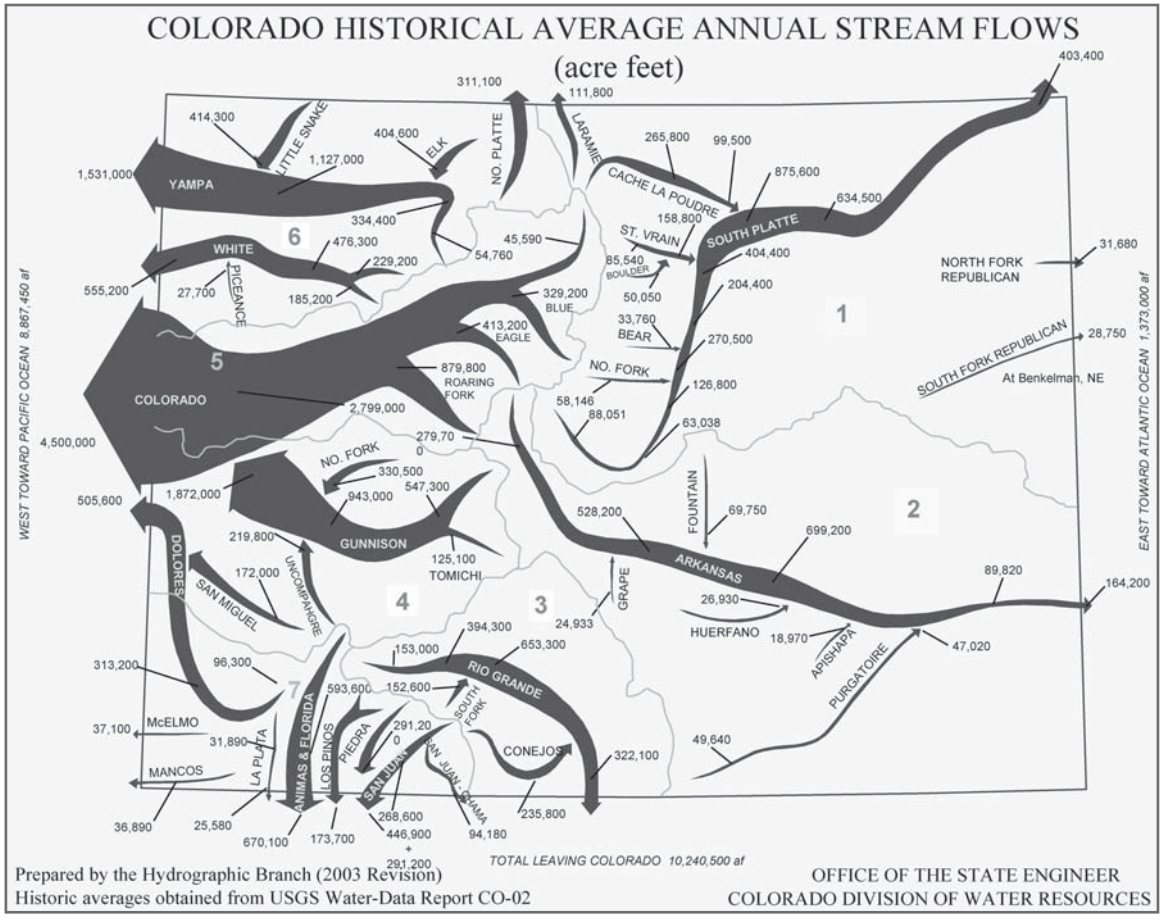
Non-Consumptive Needs

Topics addressed by these roundtable dialogues included:

- Alternative water transfer methods for agricultural rights in the Arkansas and South Platte Basins, which included representatives from several sponsors of projects approved under the CWCB grant program provided under Senate Bill 07-122
- The "Transition to Green," featuring several representatives of environmental organizations who discussed national environmental priorities and how they are being pursued in Colorado
- Agriculture-to-urban water transfers, featuring urban and agricultural representatives responding to a report on this topic recently released by a committee of the Arkansas Basin Roundtable. Participants in this session emphasized opportunities for more regional perspectives on water planning.

Water supply planning issues were also addressed in presentations concerning the ongoing Statewide Water Supply Initiative (SWSI) studies. CWCB's Eric Hecox provided an overview of the latest steps in Colorado's Visioning Process, which incorporates input from each basin on strategies to meet water demands through 2050, in alignment with 13 goals previously identified within the State. Additional studies are under way to assess the tradeoffs between different water supply strategies and how they meet the goals. One recently completed study was an assessment to research and quantify the water needed for the energy production and extraction process in the Colorado and Yampa/White basins. As presented by former Colorado Deputy State Engineer Ken Knox (now with URS), this study considered the direct and indirect impacts on water availability from energy production for natural gas, coal, uranium, and oil shale.

Another major planning effort by CWCB as part of the Interbasin Compact Process is the Non-Consumptive Needs Assessment (NCNA). As explained by The Nature Conservancy's John Sanderson, non-consumptive uses include environmental and recreational water uses — such as supporting endangered fish species or boating and fishing. Though not part of the NCNA, Dr. Sanderson noted that flowing rivers provide substantial indirect benefits such as maintaining water quality through dilution of effluent and nutrient cycling. As reported by Nicole Rowan of CDM, the non-consumptive flow needs of each basin are being studied and quantified, and then incorporated into the water supply strategies for each basin. Maps of stream reaches with important environmental and recreational attributes are complete or nearly complete for all basins, and an effort to quantify non-consumptive flow needs has begun in the Colorado Basin.



Colorado Water

Cat Shrier, Ph.D., P.G., has a broad background in public policy, hydrogeology, water planning and systems engineering. Cat is President of Watercat Consulting, LLC (www.watercatconsulting.com), which is an international consulting practice created to enlighten, support, and facilitate communication and understanding among policymakers, regulators, scientists, engineers, stakeholder groups and the general public on water issues. She previously served as a Senior Water Resources Planner, Engineer and Hydrogeologist with environmental consulting firms in Calgary, Denver, Raleigh, and Richmond. Since 1984, Cat has worked with and for federal and state legislative offices and regulatory agencies in Washington, DC; New Jersey; Virginia; North Carolina; Colorado; and the Province of Alberta. Cat has lead numerous efforts on water resources regulatory interactions and public involvement on water resource management issues. Her work has involved conjunctive use of groundwater and surface water resources; environmental impact assessments; water and wastewater reuse; multi-criteria decision analysis incorporating spatial analysis and knowledge bases; water and watershed planning programs; and energy and water policy. Dr. Shrier served on the National Academy of Sciences Study Committee on Managed Underground Storage of Recoverable Water (e.g. Aquifer Storage Recovery, recharge basins), which published its report in January 2008.

The integration of climate change and planning for various projected climate scenarios was addressed in another session, with Mark Waage and Laurna Kaatz from Denver Water. Kaatz presented the method water providers in Colorado's Front Range are working with to evaluate climate impacts on their future water supplies. Lessons learned from this collaborative approach will be used to encourage and establish other regional efforts throughout the country. Waage provided insights into several promising approaches emerging that incorporate climate uncertainty into short and long-term water planning. This is particularly important since traditionally-used planning methods fail to properly address the uncertainties associated with changing climate.

Tracy Boyd, of Shell Exploration and Production Company (Shell), provided an overview of Oil Shale and Potential Water Use in Colorado. Shell has been developing its In situ Conversion Process (ICP) with a series of demonstration projects, including those conducted at the Mahogany site in Colorado, in which electric heaters inserted into the ground gradually heat shale to 650-700 degrees for three to four years, converting kerogen to producible hydrocarbons that can be brought to the surface. To protect the surrounding aquifers, Shell has been testing ways to develop a "freeze wall" or curtain of ice around the heaters to isolate the area to be heated and protect the surrounding aquifers. As Shell's approach to commercial application of this technology is being studied, Shell is evaluating the water demands associated with different aspects of the project, including: initial construction and drilling; production; processing; power generation; domestic use of water on-site; and site reclamation.

Shell's water supply strategy to meet the various oil shale water demands includes:

- Maintenance of a diverse portfolio of water rights from different basins, providing the flexibility of alternative sourcing to avoid impacts to traditional and existing users
- Optimization of oil shale recovery and processing technologies to reduce the quantity of water required, using water quality impacts as the primary consideration in determining water use
- Application of best water management practices in operations such as water treatment, storage and reuse wherever practicable to minimize water use

Several sessions featured presentations on legal issues impacting water supplies. Carolyn Burr, of the law firm of Ryley, Carlock & Applewhite, presented a study on rainwater harvesting, and how court interpretations of rainwater harvesting and other forms of "salvage water" (including phreatophyte control) has prevented the use of rainwater harvesting in Colorado. Your author provided a presentation on agency approaches to aquifer storage regulation and policy in various western states, and issues related to aquifer storage in Colorado's various aquifer types, as defined under Colorado law pertaining to groundwater. The use of riverbank filtration, and artificial recharge and recovery for pre-treatment of water at Aurora's Prairie Waters Project (North Campus) was discussed by Richard Tocher from Tetra Tech. The project consists of an alluvial wellfield along the South Platte River that can produce 12 million gallons per day, taking advantage of river bank filtration. Water is then treated in an alluvial aquifer recharge and recovery site before being pumped 40 miles to the City of Aurora.

Presentations were also provided on the Great Lakes-Saint Lawrence Basin Water Resources Compact, by Council of Great Lakes Governors Executive Director David Nafzinger, and how that compact compares with the Colorado River Compact, as presented by Colorado Supreme Court Justice Greg Hobbs.

Several other presentations were provided on emerging technologies and studies in Colorado, as well as new policies and approaches to water management. In addition, three pre-conference workshops were held the day before the conference on the Colorado River Compact and the "Law of the River," Financial, Decision, and Risk Analysis for Ditch Companies, and Colorado Water Quality. Many of these presentations are available on CWC's website under a link to the Annual Conference.

Conclusion

Through this packed agenda, over one-and-a-half days of general and concurrent sessions as well as a day of workshops, the 2009 Annual Convention of the Colorado Water Congress provided some guiding lights for water providers and other stakeholders as they move forward on water planning issues during these uncertain times.

Many of these presentations are available on CWC's website under a link to the Annual Conference. [Colorado Water Congress website: www.cowatercongress.org]

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Federal Stimulus Bill

$110 Billion

Conference Report

Understanding the Process

Existing Channels

Wind, Solar & Others

Qualifying Projects

Loan Guarantee

Up-Front Costs

STIMULUS BILL INFRASTRUCTURE FUNDS

ENERGY, TRANSPORTATION & WATER PROJECTS

by Svend Brandt-Erichsen, Marten Law Group (Seattle)

Introduction

As has been widely reported, there is over $110 billion for energy, transportation and water infrastructure projects in the federal stimulus bill recently signed by President Obama. The "American Recovery and Reinvestment Tax Act of 2009" (stimulus bill) includes various and varied energy generation and efficiency projects, transportation projects, and monies for environmental cleanup and restoration. The Conference Report that makes up the final stimulus bill has been issued in two parts: the appropriations provisions are contained in Division A; the tax provisions are in Division B. [See House Rules Committee websites: www.house.gov/billtext/hr1_legtext_cr.pdf (Division A) and www.house.gov/billtext/hr1_legtext_crb.pdf (Division B) — each document is about 500 pages and about 13 MB in size.]

For those who are looking for a piece of the pie — and there are many — the key is understanding the process that will be used to award the funds, who decides, and the timelines for these decisions.

Most importantly, the stimulus monies are mainly being channeled into existing programs. For example, in the energy sector, the Department of Energy already administers federal loan guarantees, and is expected to apply its existing procedures in making decisions on projects funded with stimulus monies, including "renewable energy transmission projects." States will control new stimulus funds for roads, transit, clean water and drinking water projects. There is no "national process" for prioritizing projects, nor a lottery or any other "new" formula. Infrastructure funds are being distributed to the States through existing formulas — although highway funds and some of the other funds will be redistributed among the States if not committed within a few months. There is additional funding for existing federal infrastructure projects, such as harbors and flood control projects funded by the US Army Corps, and dams and water projects funded by the federal Bureau of Reclamation. There are, however, few truly "new" construction projects funded by the stimulus bill.

Renewable Energy

Federal tax credits have long supported the financing of wind, solar, and other renewable energy projects. But at a time when many potential financial backers have suffered significant losses, investors and lenders do not have enough profit to make use of them. Tight credit markets also have taken their toll on financing of renewable energy projects. The stimulus bill offers relief for both problems.

First, the stimulus bill allows qualifying renewable energy projects, including wind, solar, and fuel cell projects, to obtain a grant for 30 percent of project costs, in lieu of tax credits. Stimulus Bill (SBill) Sec. 1605. Projects involving geothermal power, geothermal heat pumps, microturbines, and cogeneration can qualify for a grant for 10 percent of project costs. *Id.* To qualify, a project must be put in service in 2009 or 2010, or for certain projects, at least begin construction before the end of 2010. This grant program will be administered by the US Treasury Department, which will have to develop rules for implementing the program. Accordingly, the details of the application process may not be known for several months. However, facilities that would qualify for a renewable energy tax credit under the existing tax code provisions should qualify for grant assistance under this program.

Second, the stimulus bill also creates a temporary federal loan guarantee program for renewable energy and electric transmission projects. SBill Sec. 406. The same program also allows loan guarantees for commercialization of innovative biofuel technologies with substantially reduced life cycle greenhouse gas emissions. *Id.* The bill authorizes $6 billion for this program, available through 2011, and limits the amount that may be allocated to biofuel projects to $500 million. SBill Title IV. This federal loan guarantee program will be administered by the US Department of Energy.

This temporary program was created by adding a section to a federal loan guarantee program that was created by the Energy Policy Act of 2005 for innovative coal and nuclear projects (Title XVII of Pub. L. 109-58). It took the Department of Energy several years to implement the loan guarantees authorized by the 2005 Act, as it had not developed rules to guide that program. In fact, while several innovative coal projects are participating in the program, none have yet closed their financing. The rules ultimately developed by the Department of Energy for this loan guarantee program, which appear at 10 CFR Part 609, are generic, and so are likely to be used for this temporary renewable projects loan guarantee program.

There are substantial up-front costs for participating in the federal loan guarantee program. The largest is the "credit subsidy cost," an estimate of the net present value of the federal loan guarantee, taking into account default risk (10 CFR 609.2). The applicant must pay this cost at loan closing. In theory, the cost is recouped over time from the spread in interest rates between what would have been charged by a commercial lender versus the lower rate on a federally backed or federally issued loan. (The existing

Federal Stimulus Bill

Department of Energy loan guarantee program has evolved from relying on private lenders to the current plan, which is for loans to be directly issued by the federal government. That same approach may be used for the renewables loan guarantee program.) Applicants also will be required to pay a significant processing fee at the time of application (10 CFR 609.6(b)(2)) and an additional processing fee if they are offered a term sheet (10 CFR 609.8(e)).

Web-Based Program

The Department of Energy uses a web-based program for its grant and loan programs (see website: http://e-center.doe.gov/). The Department is likely to make the loan guarantees available through a notice of funding opportunity issued through this system. Such a notice will specify application requirements and deadlines. It may take the Department several months to put together the application criteria. Parties interested in loan guarantees could get a jump start on the process by looking at the types of information the Department has required to support other loan guarantee applications.

Electricity Transmission

Grid Modernization

"Smart Grid"

The stimulus bill provides the Department of Energy with $4.5 billion for electricity delivery and reliability programs. SBill Title IV. These funds are to be used to "modernize the electric grid, to include demand responsive equipment," fostering development of a so-called "smart grid." The "smart grid" concept is a shift from systems that currently are manually or electro-mechanically controlled to digital control over transmission systems. A "smart grid" may be able to monitor the time and nature of electricity use, prices, and other information, allowing utilities and consumers to optimize electric power usage (*see* 42 U.S.C. § 17386(d)). For example, electric equipment could be programmed to lower its operating costs by only operating during off-peak demand periods, which could be determined through information channeled to it through the smart grid.

Demonstration Projects

In addition to providing funding, the stimulus bill also amends some of the smart grid provisions of the Energy Independence and Security Act of 2007 (Pub. L. 110-140) which authorized federal assistance in developing smart grid projects. The 2007 Act authorized smart grid demonstration projects, and the development of the protocols and other measures needed to define and implement a "smart" and responsive electric grid (42 U.S.C. § 17384). The stimulus bill increases the potential federal share of demonstration projects to 50 percent. SBill Sec. 405(2).

Devices

Appliances

The 2007 Act also authorized a 20 percent federal match for utility expenditures on the sensors, meters and other devices needed to make an electric grid responsive, and also for certain non-utility investments, such as for appliance manufacturers to design appliances that will respond to signals from the grid, and commercial and industrial facilities that install "smart grid" responsive equipment (42 U.S.C. § 17386). The stimulus bill increases the federal match to 50 percent. SBill, Sec. 405(5). The stimulus bill also directs the Department of Energy to develop rules within 60 days of enactment setting procedures for grants to qualifying entities with documented "smart grid" costs. SBill Sec. 405(8). As with other Department grant programs, any funds are likely to be distributed through notice of a funding opportunity and solicitation of applications, using the Department's on-line application system.

Transmission Agencies

The stimulus bill also authorizes new electric transmission projects to be carried out by two federal agencies that market power in the western states. The bill increases the borrowing authority of the Bonneville Power Administration (BPA), which serves the Pacific Northwest, and the Western Area Power Administration, which serves all or parts of 15 western states, by $3.25 billion each. SBill Secs. 401 & 402. The agencies are directed to use this authority to construct new electrical transmission projects. *Id.*

BPA Priorities

BPA, which sells electric power from assets (mostly hydroelectric dams) with a peak generating capacity of 14,000 **m**ega**w**atts (MW), plans to use this new authority to build transmission lines that will connect to 4,000 MW of wind turbines. But the first projects on BPA's drawing board will address the significant constraints on transmission across the Cascade Mountains that bisect Washington and Oregon.

Transmission

BPA has one project expected to begin construction within the year: a 79-mile, 500kV line in the Columbia Gorge (interview, Doug Johnson, BPA). Major construction also may begin in 2010, and continue to 2013, on BPA's West of McNary [Dam] Reinforcement project, which will add more than 2000 MW of transmission capacity. *Id.* BPA also has four other transmission projects planned, but they are all at least 18 months away from construction. *Id.*

Western Area Power

It is less clear how the Western Area Power Administration will use its new borrowing authority. For both agencies, the funding for new transmission lines takes the form of a federal loan, which is repaid through fees charged for use of the transmission lines. BPA already had borrowing authority for transmission projects, and so the stimulus bill's new funds simply augmented an existing program. SBill Sec. 401. But for the Western Area Power Administration, which did not have a similar program, the stimulus bill includes new statutory provisions granting it borrowing authority, with the funds to be used to build transmission lines. SBillSec. 402.

Federal Stimulus Bill

Jobs Now

Savings Continue

Weatherization

Block Grants

State Energy Programs

Matching Funds Waived with Conditions

Residential Investments

New Highway Funds

Time Limit

Energy Efficiency

Energy efficiency improvements for public and private buildings are in many ways the perfect target for stimulus spending. They produce short term spending on labor, plus windows, insulation, and other goods, while generating long-term savings in energy costs. The stimulus bill recognizes the potential value of energy efficiency investments, providing new federal funds as well as tax credits.

The stimulus bill appropriates $16.8 billion to the Department of Energy for energy efficiency and renewable energy programs. SBill Title IV. Of the total, $5 billion are for weatherization assistance for low income households. This is additional funding for an existing program that makes grants to States and Indian tribes to weatherize low income housing, with a particular emphasis on housing for the elderly and handicapped (42 U.S.C. § 6863). States and Tribes apply annually for funds under the weatherization program, describing the number of low income persons and dwellings they are prepared to serve (42 U.S.C. § 6864). Presumably, the Department of Energy will hold a special round of applications for the additional funds made available by the stimulus bill.

Another $3.2 billion is allocated to energy efficiency and conservation block grants. These block grants were created by the Energy Independence and Security Act of 2007 and are also administered by the Department of Energy (Subtitle E of Title V of Pub. L. 110.140). The 2007 Act provides that 68 percent of the grant funds are to be directed to local communities, 28 percent to states, 2 percent to Indian tribes, and 2 percent for competitive grants (42 U.S.C. § 17153). The stimulus bill provides that $2.8 billion is to be distributed using this formula, and that $400 million is to be made available for competitive grants. The funds are to be used for projects that increase energy efficiency in the transportation or building sector, reduce energy use, or reduce emissions from fossil fuel use (42 U.S.C. § 17152). As these funds are for an existing Department of Energy grant program, the grant application process is likely to remain unchanged.

The bill allocates $3.1 billion of these funds to State Energy Programs. These programs were created under a 1975 law that provided federal assistance to States in formulating energy plans (42 U.S.C. § 6322). The State plans include measures such as promoting car pools and mass transit, setting state procurement standards, and establishing building insulation standards. *Id.* The law authorizes federal assistance to states in developing, modifying, and implementing their plans (42 U.S.C. § 6323), with a 20 percent State match to the federal grant funds (42 U.S.C. § 6323a). A 2005 amendment requires that State plans incorporate an objective of increasing energy efficiency in their State by 25 percent by 2012, compared to a 1990 baseline (42 U.S.C. § 6324).

The stimulus bill waives the State match requirement for energy program grants, but requires States that receive additional funds under this program to make several commitments, including an upgrade of building code energy efficiency standards for residential and commercial buildings. SBill Sec. 410. The States also will have to commit that their utility regulatory authority (public utility commission) will seek to align utility financial incentives with helping their customers use energy efficiently. *Id.* In other words, they must allow utilities to recover the revenue they lose from promoting energy efficiency. This provision is likely to prove quite controversial, and may prevent some states from taking advantage of this program.

The tax provisions of the stimulus bill modify credits available for residential investments in energy efficiency, such as exterior windows, doors, skylights, and insulation, as well as natural gas, oil, or propane furnaces, heat pumps, air conditioners, or water heaters. SBill Sec. 1121. The Internal Revenue Service will provide a 30 percent tax credit, up to $1,500, for investments made in tax years 2009 and 2010. *Id.*

Transportation Infrastructure

The stimulus bill provides $27.5 billion in new highway funds, to be allocated among the States using existing formulas. SBill Title XII. In order to encourage rapid commitment of these funds, the bill requires the federal Department of Transportation (DOT) to apportion the funds to the States within 21 days of enactment, and provides for withdrawal of funds from States that do not commit the funds quickly. DOT is directed to withdraw 50 percent of any funds that a State has not obligated within 120 days of DOT's initial allocation of the funds to the States, and to redistribute those funds among States that have obligated all of their money. *Id.* If any state has unobligated funds left a year after enactment, these would be withdrawn and reallocated. *Id.* State funds are treated as obligated for purposes of these claw back provisions if they have been allocated to a State's urban areas for their road projects.

The imperative to commit the funds within 120 days (of the allocation of the funds among States, not of enactment) will dictate the types of projects that get built. Any project that has not already completed the design and permitting process probably will not be "shovel-ready" in time to receive funds from the stimulus bill. Indeed, the procurement rules in most States consume enough time that most projects will have to go out to bid quite rapidly if funds are to be obligated before the first deadline. This means the funds are likely to be used mainly for repaving, pedestrian/bicycle improvements, bridge maintenance,

Federal Stimulus Bill

Competitive Bid Grants

Grant Criteria Coming

Transit & Rail

Transit Capital

Airports

Water Project Funding

Public Works

safety improvements, culvert replacements, and similar projects that are already scoped out, require minimal design, or are exempt from extensive environmental review and permitting.

The one major exception to formulaic distribution of highway funds in the stimulus bill is $1.5 billion for competitively bid grants for "projects that will have a significant impact on the Nation, a metropolitan area, or a region." SBill Title XII. No more than 20 percent ($300 million) of these funds may be allocated to a single State, and each qualifying project can receive between $20 million and $300 million. *Id.* A wide range of projects may qualify for this competitive grant program: interstate rehabilitation, bridge replacements and seismic retrofits, road realignments, public transportation projects, passenger and freight rail projects, and port infrastructure, including intermodal projects. *Id.*

DOT was directed to publish criteria for the competitive grant program within 90 days, and applications will be due within 180 days after those criteria are published. *Id.* DOT is directed to select projects within one year of enactment of the stimulus bill. Priority will be given to projects that can be completed within five years.

The stimulus bill also contains substantial funding for transit and rail. It appropriates $8 billion for discretionary grants — to be awarded by DOT — to States for high speed rail corridors and intercity passenger rail service. SBill Title XII. DOT must submit a plan for use of these funds to Congress within 60 days of enactment, and provide guidance to applicants within 120 days. It also appropriates $1.3 billion to Amtrak.

A total of $6.9 billion is appropriated for transit capital assistance grants, to be allocated to States and urban areas using existing funding formulas. *Id.* However, $100 million of these funds are set aside for discretionary grants to public transit agencies to assist in reducing energy consumption or greenhouse gas emissions. For the formula funds, DOT must announce funding allocations within 21 days of enactment, and 180 days later must reclaim and redistribute 50 percent of any unobligated funds. One year after enactment, any remaining unobligated funds will be withdrawn and redistributed, as with the highway funds. *Id.*

The stimulus bill also appropriates $1.1 billion to the Federal Aviation Administration (FAA), to distribute through discretionary "grants-in-aid" for airport improvements, with priority given to projects that can be completed within two years. *Id.* FAA is directed to distribute 50 percent of these funds within 120 days of enactment, and 100 percent of the funds within one year.

Water and Wastewater Infrastructure

The stimulus bill provides $4 billion in capitalization grants to the US Environmental Protection Agency, for distribution to existing State clean water revolving funds, and $2 billion to State safe drinking water funds, using existing formulas. SBill Title VII. It will be up to the States to select the projects funded, but the bill directs States to give priority to projects that are ready to proceed to construction within 12 months, and any funds that are not committed within 12 months will be taken back and reallocated among other States. *Id.* No State match or cost share requirements apply to these new funds. Not less than 50 percent of the funds must be used as grants, to forgive principle, or as negative interest loans, and 20 percent must be used for green infrastructure and water use efficiency projects, if such projects are available. *Id.* The funds may not be used to procure lands, or to refinance existing debt, unless incurred after October 1, 2008. *Id.*

Other Federal Infrastructure and Environmental Funding

There also is substantial funding for federal public works projects, but not for new projects. The US Army Corps of Engineers received $2 billion for harbor and flood control projects, but they must be used for projects that already have received at least some funds through the normal appropriations process. SBill Title IV. They also received $2 billion for operation and maintenance work on existing facilities. *Id.* Dams and water supply projects in the West will receive funds from the federal Bureau of Reclamation, which received $1 billion in new funding. *Id.*

Three federal agencies received more funds for their existing environmental cleanup programs. The Environmental Protection Agency's Superfund program received $600 million. SBill Title VII. The Department of Defense's Formerly Used Sites remediation program received $100 million. SBill Title IV. The Department of Energy's cleanup of our atomic weapons legacy received $5 billion. These funds are likely to be applied to existing, underfunded cleanup projects. For example, the Department of Energy has long been behind schedule at its cleanup of the Hanford Nuclear Reservation, and can be expected to direct a portion of the new funds to that cleanup.

Facilities at our national parks, in national forests, and in wildlife refuges also will receive attention, as all of the federal land management agencies were given construction dollars and more operating funds, which they are expected to apply to their much publicized O&M backlogs.

Editors' Note:
An earlier version of this article appeared in the Marten Law Group's excellent email-based, free, environmental law news service. Interested parties can subscribe at no cost at their website: www.martenlaw.com

Federal Stimulus Bill

Conclusion

The stimulus bill has been designed to force rapid commitment of funds to infrastructure projects, but also to foster a wide range of policy objectives. In the energy sector in particular, the new funding provided by this bill is likely to jump-start development of a "smart grid" for the nation's electric transmission, as well as fund much-needed new transmission lines, that will in turn foster development of newer, more efficient and renewable electric generation facilities. The bill also may allow a number of renewable energy projects to advance, by insulating them somewhat from the effects of the economic downturn. For transportation and other infrastructure, however, the bill should be viewed more as a down payment on a backlog of maintenance, repair, and replacement projects. The bill's short term spending objectives are simply inconsistent with launching any truly significant new investments in transportation infrastructure.

For Additional Information:
Svend Brandt-Erichsen, Marten Law Group (Seattle), 206/ 292-2611 or email: svendbe@martenlaw.com

Funding	Program	Decision Maker	Funding Decisions
		— Water —	
$4 billion	Clean Water Act: State Revolving Funds	States	Within 12 months
$2 billion	Safe Drinking Water Act: State Revolving Funds	States	Within 12 months
		— Infrastructure —	
$27.5 billion	Highway Funds	States	Obligate w/in 120-140 days
$1.5 billion	Highways & Infrastructure	USDOT	Criteria w/in 90 days
$8 billion	High Speed Rail	USDOT	Criteria w/in 120 days
$6.9 billion	Transit	public transit agencies	Obligate w/in 180-200 days
$1.1 billion	Airports	FAA	Grant 50% w/in 120 days
$4 billion	Harbors & Flood Control	US Corps of Engineers	Date Not Specified
$1 billion	Dams & Water Supply Projects	Bureau of Reclamation	Date Not Specified
		— Energy —	
30% of Investment cost	Renewable Energy Project Grants	Treasury	Date Not Specified
$6 billion	Renewable Energy Loan Guarantees	USDOE	Date Not Specified
$4.5 billion	Smart Grid Grants	USDOE	Criteria w/in 60 days
$6.5 billion	Federal Transmission Projects	Bonneville & Western Area Power Administrations	Ongoing
$5 billion	Low Income Weatherization	States	Date Not Specified
$3.2 billion	Energy Efficiency Block Grants	States & Local Communities	Date Not Specified
$3.1 billion	State Energy Programs	States	Date Not Specified
30% tax credit Up to $1500	Residential Energy Efficiency	IRS	2009 & 2010 tax years
		— Environment —	
$600 million	Superfund Cleanups	EPA	Ongoing
$5 billion	Nuclear Sites Cleanups	USDOE	Ongoing
$100 million	DOD Formerly Used Sites	DOD	Ongoing
$1.2 billion	O&M and Construction	Federal Public Land Management Agencies	Ongoing

Svend Brandt-Erichsen, who practices in both Alaska and Washington, has been an environmental lawyer for nearly 20 years. He spent over 15 years in private practice and, before that, was Regional Administrator of the State of Alaska's Department of Environmental Conservation (ADEC). Svend has spent his career in energy development, assisting petroleum, coal-based and alternative energy firms with the environmental issues associated with project development and ongoing operations. He has worked on matters involving electric power generation and transmission, as well as oil and gas production, transportation, and refining, and has experience under all of the major environmental statutes. Svend represents the Alyeska Pipeline Service Company, the operator of the Trans-Alaska Pipeline Service (TAPS) on its environmental matters, as well as several oil companies with oil and gas platforms in Alaska's Cook Inlet. He has advised an independent power development company on carbon management issues for coal gasification projects; litigated the adequacy of an EIS supporting a federal land exchange, among other NEPA matters; represented a coalition seeking reform of harvest practices that affect ESA-listed Northwest salmon and steelhead; and advised a Washington refinery in its response to a petition seeking ESA listing of a herring population that spawns near its facility. He received his Juris Doctorate, with Honors, from George Washington University.

WATER BRIEFS

AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009

FEDERAL WATER & ENVIRONMENT FUNDING

Recovery Act Funding at EPA

The American Recovery and Reinvestment Act of 2009 (Recovery Act) will provide $10.5 billion for the US Environmental Protection Agency (EPA), the largest budget in the agency's 39-year history. The increase of $3 billion from 2008 funding levels will further ensure the protection of public health and the environment for all Americans. The Recovery Act includes $7.22 billion for EPA-administered projects and programs to protect human health and the environment.

Key EPA budget items include:

- $3.9 billion for the Clean Water State Revolving Fund and Drinking Water State Revolving Fund grants to support approximately 1,000 clean water projects and 700 drinking water projects — this year's largest single investment. In addition to the funds recently invested through the ARRA, this funding is a critical step in addressing the water infrastructure needs in thousands of communities across the country. EPA will work with state and local partners to develop a sustainability policy, including management and pricing, conservation, security and a plan for adequate long-term state and municipal funding for future capital needs.
- A new $475 million, multi-agency Great Lakes Initiative to protect the world's largest fresh water resource. EPA will coordinate with federal partners, states, tribes, localities and other entities to protect, maintain and restore the chemical, biological and physical integrity of the lakes. EPA and its partners will address invasive species, non-point source pollution, habitat restoration, contaminated sediment and other critical issues.
- A $19 million increase for the greenhouse gas emissions inventory and related activities that will provide data critical for implementing a comprehensive climate change bill. EPA's funding for climate change investments is the foundation for working with key stakeholders and Congress to develop an economy-wide cap-and-trade program to reduce greenhouse gas emissions approximately 83 percent below 2005 levels by 2050.
- Strengthening EPA's core research, enforcement and regulatory capabilities. The budget request also proposes reinstating the Superfund excise taxes that expired. Reinstating the Superfund taxes would collect over $1 billion annually to fund the cleanup of the nation's most contaminated sites.

For info: Enesta Jones, EPA, 202/ 564-7873 or email: jones.enesta@epa.gov

EPA BUDGET WEBSITE: www.whitehouse.gov/omb/budget/

Recovery Act Funding at the Department of the Interior

The Recovery Act will provide $1 billion to the Bureau of Reclamation, which provides water supplies and produces hydropower in the West. Funds are specifically identified in the Recovery Act to fund water reuse projects and construct rural water projects that will provide clean, reliable drinking water to rural areas and ensure adequate water supplies to western localities. Funds are also expected to be used to promote water conservation, improve energy efficiency, address aging water infrastructure, and meet endangered species requirements through improvements such as fish screens and fish passage projects.

$750 million will be used by the National Park Service to preserve and protect national icons and historic landscapes, improve energy efficiency and renewable energy use at park units throughout the nation, remediate abandoned mines sites on park units, and provide historic preservation funding to protect and restore buildings at historically black colleges. Funding under the Federal Highway Administration will improve park roads for more than 275 million visitors..

$280 million for the US Fish and Wildlife Service (FWS) will improve energy efficiency and renewable use at refuges, resulting in the "greening" of facilities throughout the nation. Funding also will be used to restore wetlands, riparian habitat, endangered species habitat, and other important landscapes. FWS also will restore facilities that are key to the management and restoration of wildlife and fisheries.

$320 million for the Bureau of Land Management (BLM) will be used to remediate abandoned mines, which will allow increased access to public lands. Funding will help expand BLM's capacity to authorize renewable energy development on public lands while ensuring environmental protection of these areas and restoration of native plants and animals, including sage grouse habitat. Funding is also included for Interior agencies to eliminate underbrush and other vegetation in fire-prone areas to reduce the threat and potential severity of fire.

$140 million will be used by the US Geological Survey to restore and rehabilitate laboratories and research facilities and improve their energy efficiency and renewable use. Funds will help modernize streamgages that are critical for monitoring streamflow and providing information that is used extensively by water managers and the public. For example, important wildlife research facilities will be upgraded.

Overall, the Recovery Act includes $12 billion for the Department of the Interior (Interior) to undertake initiatives to promote energy security with a focus on clean renewable sources and strategies to address climate change, protect and preserve America's national parks and public lands, strengthen Native American communities, enhance outdoor opportunities for young people, and. conserve wetlands and wildlife habitat.

WATER BRIEFS

Other highlights at interior include:

- More than $50 million to promote renewable energy projects on federal lands and waters
- Assisting state and federal land management agencies with more than $130 million in additional funding to monitor, adaptively manage and assess the impacts of climate change on the nation's lands, fish and wildlife
- Conserving new federal and state lands and protecting endangered species with appropriations of about $420 million from the Land and Water Conservation Fund for Interior and the US Forest Service, with annual increases to reach full funding of $900 million by 2014
- Anticipating future costs for catastrophic wildfires with a new contingent funding reserve of $75 million for the Department of the Interior
- Encouraging responsible development of oil and gas resources and closes loopholes that have given oil companies excessive royalty relief for offshore leases

For info: Frank Quimby, Interior, 202/ 208-6416

Recovery Act Funding at the National Oceanic and Atmospheric Administration

The Department of Commerce's National Oceanic and Atmospheric Administration (NOAA) will receive $830 million in funds as part of the Recovery Act. NOAA will use the funds, equivalent to 20 percent of NOAA's 2008 budget, for projects that protect life and property and conserve and protect natural resources.

The Recovery Act provides $230 million for habitat restoration, navigation projects, vessel maintenance, and other activities. An additional $430 million will be dedicated for construction and repair of NOAA facilities, ships and equipment, improvements for weather forecasting and satellite development. A total of $170 million will also be directed for climate modeling activities, including supercomputing procurement and research into climate change.

Department of Commerce agencies receiving one-time funds through the act are required to submit a plan to Congress with specifics on how allocations will be spent within 60 days of the legislation being enacted. Once completed, NOAA's plan will be available to the public at NOAA's website: www.noaa.gov. Requests and applications for funding will be accepted when instructions and rules are posted for specific projects.

For info: David Miller, NOAA, 202/ 482-0013

Recovery and Reinvestment Act of 2009 website: www.whitehouse.gov/omb/budget/

RESPONSE TO DROUGHT CA

federal drought action team

On February 26, Secretary of the Interior Salazar and Agriculture Secretary Vilsack announced the creation of a Federal Drought Action Team that will work cooperatively to respond to communities facing significant drought. With California currently facing one of its worst droughts in decades, the Drought Action Team will work with Governor Schwarzenegger's state drought response team to minimize the social, economic, and environmental impacts of the current drought.

The announcement follows the February 20th announcement by the Interior's Bureau of Reclamation (Reclamation) that, based on water forecasts, initial Water Year (WY) 2009 allocations for the Federal Central Valley Project (CVP) will be significantly limited for agricultural, municipal, industrial, and environmental uses. Under that announcement, the CVP Water Supply Allocation for agriculture was 0% under the "Dry Forecast" (90% probability of exceedance), with only a 10% allocation for agriculture under the Median Forecast (50% probability of exceedance). The allocations were based on the February runoff forecast from the California Department of Water Resources (CDWR). Updates to that forecast can be found on Reclamation's website: www.usbr.gov/mp.

Secretary Salazar is also directing Reclamation to work closely with State authorities to facilitate water transfers for the Drought Water Bank that is operated by California. He also is directing Reclamation to provide operational flexibility to convey and store water to facilitate additional transfers and exchanges that can move water to critical-need areas, and to expedite any related environmental review and compliance actions. Finally, the Secretary is calling on Reclamation to explore ways in which funds recently appropriated to Reclamation under the American Recovery and Reinvestment Act (stimulus bill) for water reuse projects, and other water projects, might be used to help stretch California's water supplies in the coming months.

For info: Joan Moody, DOI, 202/ 208-6416; Angela Harless, USDA, 202/ 720-4623; CDWR Drought website: wwwdwr.water.ca.gov/drought/

WATER COURT RULES CO

expert witness rules revised

On February 19, the Colorado Supreme Court (Court) adopted amended rules for Colorado's Water Court Rule 11, including a unique provision that requires preparation of an expert witness report, developed by the experts of the various parties ("applicant" and "opposer(s)") regarding resolutions of matters of fact and expert opinion. The amended rules also require a declaration by expert witnesses that the expert's report, disclosure, and opinion is rendered within the responsibility of an expert to the court and constitutes the expert's own judgment (see Appendix 1).

WATER BRIEFS

The "Meeting of Experts" is required within 25 days after the opposers' expert disclosures have been made. The purpose of the meeting is for the "experts" to "discuss the matters of fact and expert opinion" that have been disclosed and then "identify undisputed matters of fact and expert opinion, to attempt to resolve disputed matters of fact and expert opinion, and to identify the remaining matters of fact and expert opinion in dispute." Following the meeting (within 15 days), the experts "jointly submit to the parties a written statement setting forth the disputed matters of fact and expert opinion that they believe remain for trial, as well as the undisputed matters of fact and expert opinion, arising from the expert disclosures." What is unique about this new procedural rule regarding experts is that the experts' meeting *excludes* the parties themselves as well as the attorneys. One of Court's justices, Justice Eid, would not have adopted the provision of Rule 11 excluding the attorneys and parties from the meetings of the experts.

The rule amendments discussed above are part of a packet of water court rule revisions adopted by the Court after a 14-month study and a public comment process. Rule 6 deals with referral of applications to the "water referee" and case management by the referee. In Colorado water cases, the water referee's role includes assisting potential applicants to understand what information is required in an application and working towards resolution of a case without trial. The complete set of water court rule revisions is available at the website listed below.

For info: Colorado Court's website: www.courts.state.co.us/Courts/Supreme_Court/Rule_Changes/2009.cfm (click on Rule Change 2009(4).

WETLANDS ENFORCEMENT ID

RESTORATION ORDERED

Michael Rodriguez and his company, Christian Brothers Construction, of Meridian, Idaho have been ordered by the US Environmental Protection Agency (EPA) to restore the wetland and stream that his company illegally filled and channelized without a Clean Water Act permit. According to EPA, in October 2008, Rodriguez illegally filled 1.7 acres of wetlands and filled and channelized 1,680 feet of Tenmile Creek, located in Meridian, Idaho. Rodriguez failed to obtain the required Clean Water Act Section 404 permit from the US Army Corps of Engineers (Corps) Walla Walla District. Before this violation, Rodriguez was told by the Corps that a permit was required for his proposed work, but he failed to apply for one. For more information about EPA's work to protect wetlands in Region 10, visit: http://yosemite.epa.gov/R10/ECOCOMM.NSF/wetlands/wetlands.

For info: John Olson, EPA, 208/ 378-5756 or email: olson.john@epa.gov

ENZYME BIOREMEDIATION TX

FUNDING AWARDED FOR RESEARCH

Austin-based Agave BioSystems, Inc. has been awarded $70,000 in funding from EPA's Small Business Innovation Research (SBIR) program to develop a new enzyme engineering system used to remediate contaminated properties. The bioremediation system will require enzymes and the fabrication of functionalized magnetic nanoparticles to improve the catalytic degradation of chemical agents such as pesticides. Phase I awards are used to investigate the scientific merit and technical feasibility of a proposed concept. If the results of this phase are successful, businesses can submit proposals for Phase II contracts, which can reach amounts up to $345,000.

For info: Dave Bary, EPA, 214/ 665-2200 or email: r6press@epa.gov; SBIR program info available at EPA's website: www.epa.gov/ncer/sbir/

COLUMBIA RIVER BIOP NW

FED PLAN FOR HYDROPOWER SYSTEM

The ongoing saga of the Columbia River Power System's biological opinion may be drawing to a close. On March 6, U.S. District Court Judge James Redden held a hearing to discuss his remaining concerns about the federal plan intended to boost survival for protected salmon that traverse the Columbia-Snake river hydropower system. In a February 18 letter to litigants that set the agenda for the hearing, Redden said that "Federal Defendants and the sovereigns have worked very hard on this biological opinion and it shows — we have come a long way from the 2004 BiOp. I am concerned, however, about the 'trending towards recovery' jeopardy standard, the proposed reduction in spill, and the lack of certainty and the assumed benefits associated with the proposed habitat measures." Redden left at the end of the hearing with, apparently, one worrisome topic that he said he and the litigants need to continue to mull regarding NOAA Fisheries Service's May 5, 2008, Federal Columbia River Power System biological opinion. "The most serious flaw in it is the habitat and in particular the estuary habitat...you know, reasonably certain to occur," the judge said at the end of 5-plus hours of oral argument over the legal validity of the 2008 BiOp.

Endangered Species Act regulations prohibit NOAA from relying on the effects of any non-federal actions that are not "reasonably certain to occur" in assessing whether listed stocks are jeopardized. Redden struck down NOAA's 2000 FCRPS BiOp, in part, because it did rely on non-federal mitigation actions that weren't reasonably certain to occur.

Federal attorneys assured the judge that the new BiOp's reduction in spring spill — as compared to court-ordered regimes of recent years — would not be implemented this year. Flooding water through spill gates is done to facilitate juvenile salmon passage at the dams. Defendants in the lawsuit are NOAA Fisheries and the agencies that operate the dams, the US Army Corps of Engineers and the Bureau of Reclamation. In his closing remarks, the judge made no mention of the "trending towards recovery" jeopardy standard used by NOAA in judging the level of risk faced by the listed salmonid stocks. That standard, however, was debated for nearly three hours Friday morning.

Federal attorneys said that scientific strategies produced by federal agencies following a three-year collaboration with the region's states and tribes are

sound and that funding commitments signed a year ago are legally binding and make it certain that an aggressive and unprecedented habitat improvement effort will be mounted over the next 10 years to better conditions for salmon. At the hearing, though, the judge questioned whether the BiOp plan would be enough. "Give it some thought — how it can be made reasonably certain to occur," Redden said of tributary and estuary habitat enhancement strategies that are intended to mitigate for negative impacts that the hydro system have on salmon and steelhead.

Judge Redden stressed again, as he did in the February 18 letter, that it is advisable to have a contingency plan in place, as the 2000 plan did, in case the habitat-dependent strategy failed to produce the anticipated benefits for salmon. The 2000 BiOp said the agencies should be prepared, if all else was failing to help listed Snake River stocks, to seek congressional authorization to breach the lower Snake River dams.

This brief is based on a recent posting on the Columbia Basin Bulletin and is reprinted with the Bulletin's permission. Some additional postings at that site are important for anyone wishing to review more detailed information about this litigation. To determine where the weaknesses remain that the judge is concerned with, see Judge Redden's questions available at: www.cbbulletin.com/320722.aspx and 321829.aspx, plus his letter that set the stage for the March 6 hearing (www.cbbulletin.com/320723.aspx).
For info: BiOp litigation website: www.salmonrecovery.gov; see also Columbia Basin Bulletin's website: www.cbbulletin.com

IMPAIRED WATERS LIST NE

EPA DECISION ON NEBRASKA'S LIST

EPA recently released its decision on Nebraska's 2006/2008 list of impaired waters. EPA is approving Nebraska's decision to list 177 waters and is postponing final action on 37 lakes and reservoirs. EPA and the Nebraska Department of Environmental Quality (NDEQ) have agreed to revise Nebraska's lake and reservoir criteria plan. The revised criteria will be used in the next listing cycle to assess these 37 lakes and reservoirs.

EPA's February 3, 2009, decision letter provides a more detailed description of EPA's review and the basis for this action. The decision letter, including the Nebraska 2008 Water Quality Integrated Report that includes the impaired waters list, is available at EPA's website: www.epa.gov/region07/news_events/legal.
For info: Kris Lancaster, EPA, 913/551-7557 or email: lancaster.kris@epa.gov

WATER QUALITY DATA CA

MONITORING & ASSESSMENT RECOMMENDATIONS

Pursuant to Senate Bill 1070 (Kehoe, 2006, Water Code Sections 13167 and 13181) and a Memorandum of Understanding between the California Environmental Protection Agency and the California Resources Agency, the Monitoring Council is developing recommendations to improve the coordination and cost-effectiveness of water quality and related ecosystem monitoring and assessment, enhance the integration of monitoring data across departments and agencies, and increase public accessibility to monitoring data and assessment information. Information about the Monitoring Council is available at: www.waterboards.ca.gov/water_issues/programs/monitoring_council/
For info: Jon Marsback, SWRCB SB 1070 Coordinator, 916/ 341-5514 or email: jmarshack@waterboards.ca.gov

INSTREAM FLOW BOOK WEST

CASE STUDIES OF RIVERINE MANAGEMENT

The Instream Flow Council (IFC) recently announced the release of its latest book, *Integrated Approaches to Riverine Resource Stewardship: Case Studies, Science, Law, People, and Policy*. IFC is an organization comprised of instream flow professionals from state and provincial fish and wildlife agencies, working to improve the effectiveness of instream flow programs for conserving aquatic resources. Authored by nine instream flow specialists from these agencies in the US and Canada, as well as a legal expert from the University of Nebraska, this book provides a detailed description of eight case studies of riverine ecosystem management throughout North America as well as several other related topics. The book also includes examples of monitoring techniques and adaptive environmental assessment and management, plus a comprehensive discussion of advancing the state-of-the-practice for instream flow studies.

One of the most important aspects of riverine resource management is the law. The new book includes a complete chapter devoted to an in-depth discussion on the legal tools for instream flow protection for many states and provinces at both the state/provincial and federal levels. Guidance on training and some suggestions on research needs are included as well.
For info: IFC website: www.instreamflowcouncil.org/

SUPERFUND CLEANUP CA

GROUNDWATER & SOIL CLEANUP

On February, EPA ordered 43 parties to clean up contaminated soil and groundwater at the Cooper Drum Company (Cooper Drum) Superfund site, a 3.8 acre site located in a mixed residential, commercial and industrial area in Los Angeles. Upon completion of the agency's investigation in May 2002, EPA concluded that the soil and groundwater beneath the Cooper Drum have been contaminated primarily by volatile organic compounds (VOCs), including solvents such as trichloroethene (TCE), and had to be cleaned up. Other soil contaminants include polychlorinated biphenyls (PCBs), polyaromatic hyrdocarbons (PAHs), and lead. "We're requiring these parties to take action to ensure that contamination from the soil and groundwater at the site does not continue to migrate and to protect drinking water sources in the community," said Keith Takata, Superfund Director of EPA's Pacific Southwest region. "Today's order puts the responsibility for cleaning up this site on those companies that contributed to the contamination."

The Superfund site was used by the Cooper Drum until 1992 to recondition steel drums that previously contained the residue of industrial chemicals. The order requires the parties — two current owners of the site and 41 companies that sent steel drums to the site for reconditioning — to implement the remedial action. EPA's order requires that the remedial action use several extraction and in situ technologies to remove and treat VOC contamination from the site soil and groundwater as well as the groundwater plume which has migrated off-site.

For info: Francisco Arcaute, EPA, 213/244-1815; Federal Register notices/supporting documents at EPA's website: www.epa.gov/superfund/sites/npl/current.htm

RAINWATER HARVESTING NM

CONSERVATION PUBLICATION

On January 28, the New Mexico Office of the State Engineer (OSE) announced the release of their newest water conservation publication, *Roof-Reliant Landscaping, Rainwater Harvesting with Cistern Systems in New Mexico*. This on-line manual is designed to introduce the concept of roof-reliant landscaping, a water wise strategy that explores ways to get the appropriate use of natural precipitation, combined with the design and creation of landscapes that need little or no supplemental water to thrive. The manual begins with a basic introduction to xeriscaping (water wise landscaping techniques) and semi-arid landscape planning and design and evolves into a detailed "how-to" discussion of cistern-system design, construction and maintenance. Visit the Water Use and Conservation section on the website listed below to view the manual in its entirety. The final appendix provides a list of additional information about xeriscaping, dryland gardening, rainwater harvesting, and other methods of water conservation.

For info: OSE website: www.ose.state.nm.us

ADVERSE POSSESSION CO

ABANDONMENT & BENEFICIAL USE

On January 20, the Colorado Supreme Court (Supreme Court) reversed a judgment of the Water Court and remanded the case back to that court for further proceedings on issues that the Supreme Court noted are "highly significant to the water law." *Archuleta v. Gomez*, Case No. 08SA109 (Jan. 20, 2009).

The Water Court had ruled that Theodore Gomez (Gomez), the defendant, had adversely possessed and thus became the owner of all of Ralph Archuleta's decreed irrigation water rights that are conveyed through three different irrigation ditches. The lower court also found that Archuleta's claim for an injunction against Gomez for interference with Archuleta's use of the Archuleta Ditch was substantially frivolous and awarded $2,665 in attorney's fees to Gomez. The Supreme Court remanded the case based on its findings that neither Archuleta nor Gomez had met their respective burdens of proof to support their positions. Both parties derive record title for their land and water rights from a common predecessor-in-interest.

The Supreme Court succinctly set out Colorado law, noting two key elements: that adverse possession does not occur from the river or stream, but only after the water is diverted into a ditch, and that such a claim may only be made against private water rights. "Adverse possession law in Colorado prevents a claimant from adversely possessing water that is within a surface stream or tributary aquifer, but allows private water users within an irrigation ditch to adversely possess against each other behind the headgate, that is, after the water has been diverted from the stream or aquifer pursuant to an adjudicated water right. We agree with Archuleta that, to succeed in his adverse possession claim, Gomez must demonstrate that he exclusively, hostilely, and adversely made an actual beneficial consumptive use of all or a portion of Archuleta's deeded irrigation water right interests on the Gomez lands for the 18-year adverse possession period, not just that he intercepted water in the three ditches belonging to Archuleta's deeded interests in the adjudicated water rights. On the other hand, to succeed on his injunction action against Gomez to restore water deliveries through the three ditches, Archuleta must show that he did not abandon all of his water rights to the stream. All or any portion of an abandoned water right belongs to the stream, and neither an injunction nor an adverse possession action can revive an abandoned water right." *Slip Op*. at 3-4.

The case also notes the importance in water rights cases of the "intertwined" interests in ditch rights-of-way. *Id*. at 13-18. "Colorado's adverse possession statutes, with sections 38-41-101(1)&(2), C.R.S. (2008) (18-year statute), and 38-41-106, C.R.S. (2008), (7 year statute), recognize that ditch rights-of-way and water rights, both of which are real property rights in this state, can be adversely possessed against their private owners. Thus, owners of such rights must remain vigilant in the protection of their interests." *Id*. at 17-18.

The other element of water law in the case is "abandonment" of the water rights at issue and how that affects any adverse possession claim: "…our cases establish that no person can revive or adversely possess an abandoned water right. *Farmers Reservoir & Irrigation Ditch Co. v. Fulton Irrigating Ditch Co*., 108 Colo. 482, 486, 120 P.2d 196, 199 (1941)…" *Id*. at 23. "If the right has been abandonded (sic), the water belonging to it for beneficial use reverts to the stream, and the right cannot be revived through adverse possession." *Id.* at 24. In Colorado, ten or more years of non-use of a water right creates a rebuttable presumption of abandonment to the stream of the right. Section 37-92-402 (10), C.R.S. (2008). Note, however, that abandonment also requires "intent to abandon" and abandonment may occur in whole or in part.

Justice Hobbs' opinion contains additional discussion regarding adverse possession, abandonment, rights-of-way, and beneficial use — and ways to prove these elemental issues — and is recommended for any water professionals who become involved in a case that entails these issues.

For info: Colorado Supreme Court opinions are available on the Court's website: www.courts.state.co.us

CALENDAR

March 15-22 Turkey
5th World Water Forum: Istanbul 2009 —"Bridging Divides for Water", Istanbul. For info: World Water Forum website: www.worldwaterforum5.org/

March 16 OR
2009 Climate Change Conference: Practical Steps in Moving Forward, Portland. World Trade Center. For info: Holly Duncan, Environmental Law Education Center, 503/ 282-5220, email: hduncan@elecenter.com or website: www.elecenter.com

March 16-18 CA
Green California Summit, Sacramento. Sacramento Convention Center. For info: Cindy Dangberg, Summit, 626/ 577-5700 or website: www.green-technology.org/gcsummit

March 17 AZ
Best Practices in Stakeholder Engagement for Water Resources Planning Conference, Tucson. University of Arizona Student Union. For info: Sharon Megdal, WRRC, email: smegdal@cals.arizona.edu or website: www.cals.arizona.edu/AZWATER

March 17 OR
Oregon Dam Safety Workshop, Wilsonville. Wilsonville Conf. Center. Sponsored by Oregon Water Resources Depart.. For info: Arla Heare, OWRD, 503/ 986-0829, email: Arla.L.Heare@wrd.state.or.us or website: www.wrd.state.or.us >> Dam Safety

March 17-19 Canada
International Environmental Technology Trade Show & Conference, Montreal. Palais Des Congres. For info: Conference website: www.americana.org

March 17-21 IL
WQA Aquatech USA 2009, Chicago. Donald E. Stephens Convention Ctr. For info: Lori Watkins, Aquatech, 630/ 505-0160 or website: http://wqa-aquatech

March 18 AZ
NEPA & EIS Seminar, Phoenix. Wyndham Phoenix Hotel. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

March 19 OR
Update on Oregon University System Climate Research Institute Conversation, Eugene. Bowerman Center for Environmental Law, 5pm. For info: ENR , 541/ 346-1395, email: enr@uoregon.edu or website: www.law.uoregon.edu/org/enr

March 19 CA
Water Resources Planning & Urban Growth, Davis. Da Vinci Bldg., 1632 Da Vinci Ct.. For info: UC Davis Extension website: http://extension.ucdavis.edu

March 19-20 VA
Climate Change Regulation & Policy Conference, Arlington. Waterview Conf. Center. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

March 20-22 AL
2009 Watershed Leadership Conference, Nauvoo. Camp McDowell. For info: Elizabeth Salter, Alabama Rivers Alliance, 205/ 322-6395 or website: www.alabamarivers.org/

March 22-24 CA
California Section Annual Conference Water ReUse, San Francisco. Intercontinental Mark Hopkins. Sponsored by Water ReUse Association. For info: Water ReUse website: www.WateReuse.org

March 23-27 HI
Introduction to Process-Based Stream Restoration in the Hawaiian Islands Course, Honolulu. Waikiki Beach Marriott. For info: Northwest Enviromental Training Center website: http://nwetc.org/

March 24-25 CA
Groundwater Salinity Conference, Sacramento. Radisson Hotel. Sponsored by Groundwater Ass'n of California. For info: GRA website: www.grac.org

March 25 WA
Redevelopment of Contaminated Property Seminar, Seattle. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

March 25-27 NC
National Pretreatment & Pollution Prevention Workshop, Charlotte. Hilton University Place. Sponsored by National Association of Clean Water Agencies. For info: NACWA website: www.nacwa.org

March 25-28 WA
The Pacific Northwest in a Changing Environment: Northwest Scientific Ass'n Annual Meeting, Seattle. University of Washington. For info: Conference website: http://www.vetmed.wsu.edu/

March 26 D.C.
Washington Roundtable 2009 - Interstate Council on Water Policy, Washington. L'Enfant Plaza Hotel. For info: ICWP website: www.icwp.org/cms/

March 27-27 CA
Geothermal Energy in the West Conference, Los Angeles. Millenium Biltmore Hotel. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

March 30-31 OK
Oklahoma Water Law Seminar, Oklahoma City. Renaissance Hotel. For info: CLE International, 800/ 873-7130 or website: www.cle.com

March 30-31 CA
California Coastal Law Seminar, Los Angeles. Hyatt Regency Century Plaza. For info: CLE International, 800/ 873-7130 or website: www.cle.com

March 30-April 1 OR
Soak It Up: Phytotechnology Solutions for Water Challenges Conference, Silverton. Oregon Garden Resort. Sponsored by SPROut. For info: SPROut's website: www.SPROutOregon.org/events

March 30-April 2 CA
International Water Efficiency Conference, Newport Beach. Marriott Hotel. For info: Conference website: http://waterec.net/wec.html

April 2 OR
Sustainability Using The Natural Step Framework, Portland. DoubleTree Hotel, 1000 NE Multnomah. For info: April Knudsen, Natural Step Network, 503-241-1140 x1, email: april@ortns.org or website: www.thenaturalstep.org/usa

April 2-3 NM
Law of the Rio Grande Seminar: Collaborative Approaches to the River's Biggest Challenges, Santa Fe. Inn & Spa at Loretto. For info: CLE International, 800/ 873-7130 or website: www.cle.com

April 6-7 WA
Clean Water & Stormwater Seminar, Seattle. WA State Convention & Trade Ctr.. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

April 8-10 OR
Environmental Site Restoration/ Mitigation: Creative Planning & Implementation Course, Troutdale. For info: NW Enviromental Training Center website: http://nwetc.org/

April 13-15 Palestine
Water: Values & Rights 2nd International Conference, Jericho. Sponsored by Palestine Academy for Science & Technology and Palestinian Water Authority. For info: Conference website: www.waterrightsconference.org/

April 13-15 PA
2009 Conference on Design and Construction Issues at Hazardous Waste Sites, Philadelphia. Sponsored by EPA & Corps. For info: Corps website: https://superfund.usace.army.mil/2009DCHWS

April 14 WA
Preview of PBS Frontline Documentary: "Poisoned Waters", Seattle. Town Hall, 1119 Eigth Avenue (at Seneca), 7pm. Sponsored by Puget Sound Partnership. For info: Tickets: 800/ 838-3006 or website: www.brownpapertickets.com/event/59019

April 15 CA
GRA Annual Legislative Symposium & Lobby Day, Sacramento. Sheraton Grand & the Capitol. Sponsored by Groundwater Ass'n of California. For info: GRAC website: www.grac.org

April 16 OR
The Business of Renewable Energy Conference, Portland. Sponsored by NEBC. For info: Sue Moir, NEBC, 503/ 227-6361 or website: www.nebc.org

April 16-17 WY
Wyoming Water Law Seminar, Cheyenne. Little America. For info: CLE International, 800/ 873-7130 or website: www.cle.com

April 19-23 AZ
2009 Ground Water Summit and 2009 Ground Water Protection Council Spring Meeting: The Science Conference: Adapting to Increasing Demands in a Changing Climate, Tucson. Sponsored by the National Ground Water Association and the Ground Water Protection Council. For info: NGWA, 800/ 551-7379, email: customerservice@ngwa.org, or website: www.ngwa.org

April 20-23 TX
19th Annual Membrane Filtration & Other Separations Technologies Short Course, College Station. Sponsored by Texas A&M University - Food Protein R&D Center's Separation Sciences Group. For info: Carl Vavra, Texas A&M, 979/ 845-2758, email: cjvavra@tamu.edu or website: www.tamu.edu/separations

April 20-23 WA
2009 Annual General Meeting: New Science for Managing Uncertainty in Fisheries, Shelton. Little Creek Casino Resort. Sponsored by American Fisheries Society - Washington and British Columbia Chapter. For info: Conference website: www.npic-afs.org/agm/first-call/

April 21-23 WA
Stormwater Engineering: Civil & Environmental Engineering Professional Development Course, Shoreline. For info: Course website: www.engr.washington.edu/epp/transpeed/swe.html

April 22-24 KS
Western States Water Council 159th Council Meeting, Kansas City. Great Wolf Lodge. For info: Cheryl Redding, WSWC, 801/ 561-5300, email: credding@wswc.state.ut.us or website: www.westgov.org/wswc/meetings.html

April 23-24 OR
Oregon Wetlands Seminar, Portland. World Trade Center. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

April 27-28 OR
Water Quality & Quantity, Portland. For info: Holly Duncan, Environmental Law Education Center, 503/ 282-5220, email: hduncan@elecenter.com or website: www.elecenter.com

April 27-30 CA
BioCycle International Conference 2009, San Diego. Town & Country Resort & Convention Center. Oreganics Recycling & Composting. For info: Conference website: www.jgpress.com/biocycle50/home.html

April 28-30 WA
7th Washington Hydrogeology Symposium, Tacoma. Tacoma Convention Center. Sponsored by Ecology & USGS. For info: Ecology Website: www.ecy.wa.gov/events/hg/index.htm

April 30-May 1 WA
Mitigation & Conservation Banking, Seattle. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

CALENDAR

(continued from previous page)

May 2-5 OH
River Rally 2008 Conference, Huron. Sawmill Creek Resort. Sponsored by the River Network. For info: Website: www.rivernetwork.org

May 3-6 D.C.
National Clean Water Policy Forum, Washington. Renaissance Washington DC Hotel. Sponsored by National Association of Clean Water Agencies. For info: NACWA website: www.nacwa.org

May 4-5 AZ
Law of the Colorado River Seminar, Phoenix. Arizona Biltmore Hotel. For info: CLE International, 800/ 873-7130 or website: www.cle.com

May 4-6 AK
American Water Resources Assn "Managing Water Resources and Development in a Changing Climate" Conference, Anchorage. Marriott Downtown. For info: AWRA, 540/ 687-8390 or website: www.awra.org

May 4-8 OR
Salmonid Conservation Series (3 Courses), Troutdale. McMenamin's Edgefield. Northwest Environmental Training Center Course. For info: NWETC website: http://nwetc.org/training_or.htm

May 5-11 CA
Intro to Process-Based Stream Restoration, South Lake Tahoe. Inn by the Lake. For info: Northwest Enviromental Training Center website: http://nwetc.org/

May 5-7 OR
Northwest Facilities Expo, Portland. Sustainable Products, Energy-Efficient, Effective & Low-Maintenance. For info: Joyce Lortz, 800/ 827.8009 x4424, email: Joyce.Lortz@cygnusexpos.com or website: www.FacilitiesExpo.com

May 5-8 UT
National Mitigation & Ecosystem Banking Conference, Salt Lake City. Salt Lake Convention Center. For info: Conference website: www.mitigationbankingconference.com

May 6-9 OR
Living Future 2009: Unconference for Deep Green Professionals, Portland. Sponsored by the Cascadia Region Green Building Council. For info: Conference website: www.cascadiagbc.org/living-future/09

May 6-9 OR
2009 Spring Conference: American Waterworks Ass'n Pacific NW Section, Salem. Salem Conference Center. For info: NW Section website: http://pnws-awwa.org/index.asp

May 7-8 ID
Idaho Water Law Seminar, Boise. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

May 7-8 OR
The Promise of Development: Natural Resource Issues in a New Economy Conference, Bend. Inn of the 7th Mountain. Sponsored by OSB Environmental & Natural Resources Section. For info: Email: sdobson@osbar.org or website: www.osbarcle.org/

May 10-13
Nutrient Recovery from Wastewater Streams International Conference, Vancouver, B.C.. For info: Conference website: www.nutrientrecovery2009.com/

May 11 WA
CERCLA & MTCA: Advanced Sediment Conference, Seattle. For info: Holly Duncan, Environmental Law Education Center, 503/ 282-5220, email: hduncan@elecenter.com or website: www.elecenter.com

May 11-13 DC
2009 National Hydropower Association Annual Conference, Washington. Capital Hilton Hotel. For info: NHA website: www.hydro.org/

May 11-14 OR
5th National Conference for Nonpoint Source & Stormwater Outreach: Achieving Results with Tight Budgets, Portland. DoubleTree Hotel. Sponsored by EPA. For info: EPA website: www.epa.gov/nps/outreach2009/

May 11-15 WA
Wetland Delineation Intensive Course, Bothell. UW Bothell. For info: UW Engineering website: www.engr.washington.edu/epp/cee/wet.html

May 13 WA
Model Toxics Control Act Seminar, Seattle. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

May 13-14 WA
Community Energy Roadmap Pacific Northwest Summit & Workshop, Bellevue. For info: Marcy, NextGen Today, 604/ 833-4490 or website: www.communityenergyroadmap.com

May 14 WA
Fisheries & Hatcheries Seminar, Seattle. WA State Convention & Trade Ctr.. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

May 14-15 CA
California Water Law Seminar, Monterey. Hyatt. For info: CLE International, 800/ 873-7130 or website: www.cle.com

May 15 WA
Water Rights Transfers: Participating in the Water Market in Washington State, Seattle. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

May 17-19 CA
Waste-to-Fuels Conference & Trade Show, San Diego. Hyatt Regency Mission Bay. For info: Gene Jones, 800-441-7949 or website: www.waste-to-fuels.org/

May 17-21 KS
World Environmental & Water Resources Congress Conference, Kansas City. For info: Conference website: http://content.asce.org/conferences

May 18 WA
Environmental Reporting & Disclosure Seminar, Seattle. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

May 18-19 CA
Endangered Species Act Seminar: Hot Environmental Issues in Southern California, Palm Springs. La Quinta. For info: CLE International, 800/ 873-7130 or website: www.cle.com

May 18-19 CA
13th Annual Water Reuse & Desalinization Research Conference, Huntington Beach. Hilton Waterfront Beach Resort. For info: Water ReUse website: www.WateReuse.org

May 18-21 CO
National Hydrologic Warning Council 2009 Conference & Exposition, Vail. For info: Conference website: www.hydrologicwarning.org/

May 19-20 WA
Climate Change in the Northwest, Seattle. For info: Holly Duncan, Environmental Law Education Center, 503/ 282-5220, email: hduncan@elecenter.com or website: www.elecenter.com

May 19-22 CA
2009 Assn of California Water Agencies Spring Conference & Exhibition, Sacramento. Sacramento Convention Center. For info: ACWA, 916/ 441-4545 or website: www.acwa.com

The Water Report
Water Rights, Water Quality & Water Solutions in the West
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