

# [***CONFERENCE REPORT: THE FIFTY-SECOND ANNUAL CONVENTION OF THE COLORADO WATER CONGRESS: COLORADO COMPACTS WORKSHOPCOLORADO STATE UNIVERSITY WATER RESOURCES ARCHIVE, WATER TABLES 2010, ACROSS STATE LINES: SHARING THE RESOURCES, Fort Collins, Colorado February 20, 2010***](https://advance.lexis.com/api/document?collection=analytical-materials&id=urn:contentItem:50GM-G420-00SW-502Y-00000-00&context=1516831)

Spring, 2010

**Reporter**

13 U. Denv. Water L. Rev. 463 \*

**Length:** 3288 words

**Author:** Sarah Felsen and Tracy Taylor

**Text**

**[\*463]**

Denver, ***Colorado*** January 27-29, 2010

DAY 1: WEDNESDAY, JANUARY 27, 2010

The Fifty-Second Annual Convention of the ***Colorado*** Water Congress's ***Colorado*** Compacts Workshop provided informative discussion on the history and current relevance of ***Colorado***'s interstate water compact obligations. The workshop consisted of four sessions.

Nicole Seltzer, Executive Director of the ***Colorado*** Foundation for Water Education ("CFWE") presented the first session. Ms. Seltzer introduced the newly-released CFWE's Citizen's Guide to ***Colorado***'s Interstate Compacts ("the Guide"), the ninth in a series of Citizen's Guides. The CFWE designed the Guide to provide a big picture understanding of compacts and their importance.

Ms. Seltzer explained that ***Colorado***, as a headwater state, shares water with nineteen downstream states, as well as Mexico. Although this water originates in ***Colorado***, the amount of water ***Colorado*** is entitled to use and consume within its boundaries is determined by nine interstate compacts (formed between 1922 and 1948), two memos of understanding, and two Supreme Court equitable decrees. For ***Colorado***, the downside to its involvement in compacts is, of course, that it may not use all of the water originating within its borders. However, Ms. Seltzer points out an upside to ***Colorado***'s water compacts: Coloradans can use compact arrangements to promote certainty about how much water exists in the state and how Coloradans can preserve it in perpetuity.

The next session's speaker was Justice Gregory Hobbs of the ***Colorado*** Supreme Court. Justice Hobbs discussed the early legal background of water compacts, especially the ***Colorado*** ***River*** Compact. Justice Hobbs explained how early legal thinking regarding water in the Western States, especially in those states benefiting from the ***Colorado*** **[\*464]** ***River***, involved a number of complex and sometimes conflicting legal perspectives. Under the equal footing doctrine and ***Colorado***'s state constitution, which rejected riparianism in favor of the doctrine of prior appropriation, ***Colorado*** has claim to title to all of the water arising within her borders. However, when ***Colorado***'s neighbor-state of Kansas entered the union, it used riparianism to govern its water. On the one hand, the federal government claimed rights to waters flowing interstate under the doctrine of equitable apportionment. On the other hand, federal laws, such as the 1866 Mining Law, suggested that each state could have its own water law. Additionally, Justice Hobbs stated that, when examining the legal background of water compacts, one must consider the Native Americans' "reserved rights doctrine." In 1908, the Supreme Court held in United States v. Winters that when the government created these reservations, it did so with a reserved amount of water rights recognizable by all states independent of use. For example, as Justice Hobbs noted, the Ute tribe has an 1868 reserved water right.

In 1922, in order to make sense of this "confusion" of early law, the United States Secretary of Commerce, Herbert Hoover, called negotiators from Arizona, California, ***Colorado***, Nevada, Utah, and Wyoming to the first meeting of the ***Colorado*** ***River*** Compact Commission ("CRCC"). The CRCC negotiation was the first negotiated water compact of its size in the United States. The Boulder Canyon Project Act of 1928 ratified the 1922 compact, authorized construction of the Hoover Dam in the lower basin, and apportioned the lower basin's allotment of water among the states of Arizona, California, and Nevada. In 1948, the Upper ***Colorado*** ***River*** Commission apportioned the upper basin's allotment among ***Colorado***, New Mexico, Utah, Wyoming, and a portion of Arizona. Ultimately, the ***Colorado*** ***River*** Compact allowed ***Colorado*** to use only one-third of the water that its watersheds produce. However, guided by the able representation of its commissioner, Delph Carpenter, ***Colorado*** won the perpetual right to take water from the ***Colorado*** ***River*** and distribute it to other parts of the state.

Next, a trio of water professionals spoke on the topic of "Administration of ***Colorado***'s East Slope Compacts: Case Studies on South Platte and Republican ***Rivers***." The first speaker in this session was Peter Ampe of the ***Colorado*** Office of the Attorney General. Mr. Ampe focused on the Republican ***River*** Compact.

The Republican ***River*** Compact Administration ("RRCA") administers the Republican ***River*** Compact, effective 1943. The compact provides for the efficient use of the waters of the Republican ***River*** and its tributaries for multiple purposes, including the equitable allocation of what the compact calls a "virgin" water supply (or, water that is "undepleted by the activities of man") to the three states that share the Republican ***River*** Basin: ***Colorado***, Kansas, and Nebraska. Drainage basin calculations help allocate virgin water - one modifies **[\*465]** the allocation if the amount varies more than ten percent each year. The compact allocates a total of 54,100 acre feet of virgin water to ***Colorado***. Additionally, the compact has some unallocated waters that it gives to the first appropriator.

Mr. Ampe described Kansas's discontent with the regulation of the compact - an unease that it began to vocalize in the 1980s. Finally, in 1998, Kansas filed suit against Nebraska for overuse of the basin's groundwater. Kansas named ***Colorado*** as a defendant, but Kansas sought no relief from ***Colorado***. In 1999, the Supreme Court appointed a special master to investigate the case. Nebraska eventually counterclaimed against Kansas and cross-claimed against ***Colorado***, alleging that if all groundwater connected to the Republican ***River*** is subject to the compact's allocation, then ***Colorado*** had consumed more water per year than the compact had allocated it. In 2002, the special master negotiated a settlement in the case under which the states barred all claims going forward, stream-flow depletions caused by well pumping would be determined using a ground water model, and the compact's accounting would be done on a five-year running average. The final settlement included a procedure for bringing disputes to the RRCA that would involve nonbinding arbitration. Mr. Ampe suggested that this process helps states fully understand what the other compact states want and allows a neutral arbitrator to decide what is truly fair; in addition, the process could also help smooth more minor discussions, such as the placement of gauges. Since signing the agreement in 2002, ***Colorado*** has been out of compliance every year. Mr. Ampe suggests that this may well be because changes in use are not reflected in actual amount fluctuations for decades.

Mike Sullivan, ***Colorado*** Deputy State Engineer, spoke next about the Rio Grande ***River*** Compact. Giving a brief overview of the history of the compact, Mr. Sullivan explained that the Rio Grande Compact came about because of development along the Upper Rio Grande and the need to divide the upper Rio Grande water between ***Colorado***, New Mexico, and Texas. The Upper Basin saw the construction of the San Luis People's ditch in 1852 and the appropriation of the first surface water right from the Conejos ***River*** in 1855. In 1866, the Rio Grande ***River*** had its first water right appropriation. From 1880 to 1890, the area experienced the most extensive development of surface water irrigation systems in the area with approximately 200 artisan wells drilled during that time. Downstream water users started experiencing water shortages, and by 1896, the Rio Grande had dried up. As a result, Mexico filed a complaint.

In 1906, the United States signed a treaty with Mexico to divide the waters of the Rio Grande. To allocate water between southern New Mexico and Texas, Congress authorized the Rio Grande Project that built the Elephant Butte and Caballo dams in 1916. From 1928 to 1937, ***Colorado***, New Mexico, and Texas conducted a joint investigation to negotiate a permanent compact between the three states that would **[\*466]** reach all of their water needs from the Rio Grande. In 1938, the three states reached an agreement and signed the Rio Grande ***River*** Compact.

Mr. Sullivan continued discussing the basics of the Rio Grande ***River*** Compact, stating that the Compact has many objectives: it establishes the Rio Grande Commission; apportions the Rio Grande water between ***Colorado***, New Mexico, and Texas; establishes delivery schedules for the states; and establishes credit and debit limits. The compact also eliminates obligations of the states during spill years, restricts the storage of upstream states in dry years, and allows for trans-mountain and closed basin project diversions.

Mr. Sullivan explained that in the beginning of the Rio Grande Compact, ***Colorado*** ran a credit and a little bit of a water debt. Then ***Colorado*** went into greater debt. In 1976, New Mexico and Texas told ***Colorado*** that the state was not living up to the compact, so ***Colorado*** starting honoring its obligations. ***Colorado*** curtailed water use in order to make deliveries. The state came out of debt in 1985 and since that year ***Colorado*** has had little debt.

The compact is an annual delivery obligation. The reservoir development never came to fruition so the compact is run future forward. ***Colorado*** must look at the forecast, including snowmelt, to figure out how much water the state thinks it will receive and how much the state will have to deliver. Mr. Sullivan concluded by saying that ***Colorado*** currently enjoys a good working relationship with the downstream states under the Rio Grande Compact.

Jim Hall, Division Engineer for Water Division 1, concluded the East Slope Compacts Administration Primer with a presentation addressing the South Platte ***River*** Compact. In contrast to the Rio Grande ***River*** Compact, the South Platte Compact only involves two states: ***Colorado*** and Nebraska. Mr. Hall stated that the South Platte Compact is similar to the prior appropriation system and is much more straightforward than other compacts.

The events leading to the South Platte ***River*** Compact started with a lawsuit from Nebraska concerning the Western Canal in 1916, alleging that irrigated farms in ***Colorado*** deprived Nebraska of water at the state line. The two states investigated the issue and came up with an agreement in 1923. Mr. Hall noted that there are several key provisions of the compact. First, ***Colorado*** has full right to the use of the flow in the upper section of the South Platte ***River***, which is the portion of the ***river*** in ***Colorado*** that is upstream of the west boundary of Washington County. Second, ***Colorado*** has full right to use of the flow in the lower section of the ***river*** between October 15 and April 1. The lower section is the portion of the South Platte in ***Colorado*** that is between the west boundary of Washington County and the state line. The last key provision of the compact states that from April 1 to October 15 each year, ***Colorado*** must curtail all diversions of water in the lower section of the ***river*** that impact flows at the state line and whose priority dates are junior to June 14, 1897, when the flow is less than 120 cubic feet per **[\*467]** second.

There are also several lesser-known provisions of the South Platte Compact. One provision states that ***Colorado*** must make up flow shortfalls to Nebraska within 72 hours. In addition, Nebraska may use water diverted through Peterson ditch and other ditches in the Julesburg Irrigation District that flow to Nebraska. The compact also divides the waters of Lodgepole Creek (a tributary of the South Platte) at a point two miles north of the state line, with Nebraska having exclusive use of the water above and ***Colorado*** having exclusive use of the water below the division point. Finally, the two states can implement extra provisions under the compact should Nebraska build the Perkins County Canal near Ovid.

Mr. Hall also addressed why ***Colorado*** has to curtail only the flows in the lower section of the ***river***. He stated two points: First, water rights senior to 1897 control the upstream portion of the ***river*** and in years when it matters there are rights that dry up the ***river*** four or five times above the point of the senior rights. Second, there are mainly 1882 and 1888 water rights in District 1 and mainly 1897 water rights in District 4. Because these rights irrigate and have return flows, the compact drafters chose to develop the compact the way that it is.

Looking back on recent years of the ***river*** flow, Mr. Hall stated that going into 2002 things looked good, but it was not long before it turned bad. ***Colorado*** had thirteen days total that the ***river*** was above 120 cubic feet per second. In 2008, it was still dry but it was much better than in 2002. The South Platte had a great year in 2009 and ***Colorado*** exceeded its compact requirement by quite a bit during that year.

In conclusion, Mr. Hall addressed the operational concerns of the South Platte ***River*** Compact. He stated that measurement concerns do exist and every change in flow changes the relationship between stage and flow; thus, ***Colorado*** has to measure the flow in Julesburg. Mr. Hall also said that ***Colorado*** does not have to curtail surface water rights to assure compact compliance; the reservoir is generally full so that is not a problem. Finally, Mr. Hall concluded by stating that it is a real challenge to assure that ***Colorado*** curtails in time in order to maintain the flow at 120 cubic feet per second or above.

The final presentation of the workshop was the "Legal Background for Litigating a Compact, Case Study: Kansas v. ***Colorado***," presented by David Robbins, attorney for Hill and Robbins. Giving a brief overview of interstate compacts, Mr. Robbins stated that the compacts are both a contract and a law of the United States. Unless the compact is somehow unconstitutional, no court may order relief that is inconsistent with the express terms of the compact. The United States Supreme Court has no jurisdiction to resolve controversies between two or more states, including a dispute over a compact. Contract remedies are generally available to remedy a breach of a compact, including damages. Equitable remedies, such as specific performance, may also be available. Finally, states cannot enter into compacts without the **[\*468]** consent of Congress.

In 1907, Congress authorized the negotiation of a compact between ***Colorado*** and Kansas for the equitable apportionment of interstate ***rivers***. The purpose of the Arkansas ***River*** Compact is to allocate consumption. The compact tells each state how much water it can consume; what each state is not entitled to consume has to pass by gravity downstream.

In 1948, the Arkansas ***River*** Compact Commissioners signed the compact and Congress approved it in 1949. Mr. Robbins explained that in 1984, the Kansas Commissioner felt that ***Colorado*** had breached its deal on how the state would administer the Purgatory project and consequently was depriving Kansas of water. The Kansas Commissioner hired engineers who conducted a study that suggested that there was damage to Kansas from winter water storage projects and post-project well pumping in the basin, as well as damage from the Purgatory project. Kansas told ***Colorado*** to shut down the projects.

By 1985, Kansas claimed that ***Colorado*** was in violation of the compact and requested an investigation. Kansas filed a complaint with the United States Supreme Court and the Court accepted the complaint in early 1986. ***Colorado*** and Kansas litigated the case from 1985 to 2009, during which there was a lengthy discovery period, five reports from the special master, four arguments before the Supreme Court, and over 270 days of actual trial. The Supreme Court entered a final decree in March 2009.

Mr. Robbins offered several general truths about ***river*** compacts. First, all water compacts limit and allocate consumption. Second, it is hard to live with limits on consumption. Mr. Robbins stated that under most conceivable circumstances, when a compact controversy arises, ***Colorado*** will be on the defense. Furthermore, other states are not as impressed with ***Colorado*** and its growing need for water as ***Colorado*** citizens are themselves. Finally, for every compact there is a lot of folklore and coffee shop wisdom that is frequently off the mark about how the compact came to be and how the compact should work.

Next Mr. Robbins went over the process for dealing with water compact litigation. As a first step, the parties must learn the applicable law and remember that ***Colorado***'s internal law may be relevant and can work against you. In addition, it helps to learn the history; it is beneficial to hire a historian and to study the state's own records of the negotiations and subsequent interactions. Lawyers must review the public records in the other state(s) and review the public records of federal agencies, including those in the National Archives and the Library of Congress. Third, the lawyer must learn the facts by studying what has occurred in his or her state that has raised the ire of his or her neighbor. Assemble all the available information, including but not limited to climate data, stream flows, diversion records, water rights decrees, well records, pumping data, and land use data. Last, in water compact litigation, each party must determine the best tools to use. It is **[\*469]** important to decide whether to model or not to model, what techniques are best for finding missing data, and the appropriate equations to estimate the unmeasured or the unknown. The lawyers must also determine the tools for discovery, pre-trial maneuvers, trial to the Master, and exceptions to the Supreme Court.

Talking specifically about Kansas v. ***Colorado***, Mr. Robbins discussed the trial phases that he experienced. First, ***Colorado*** had to determine liability by determining if the state did anything wrong. Next, Mr. Robbins needed to examine the extent of ***Colorado***'s wrongdoing. The Court needed to determine the extent of the remedy and if it would be a water remedy or a dollar remedy. In this case, the Master agreed with Kansas that a dollar remedy would be appropriate. Finally, Mr. Robbins determined how ***Colorado*** would ensure future compliance and what the costs would be.

In conclusion, Mr. Robbins discussed why interstate water compact litigation is so complicated. He stated that it is inevitability a basin-scale problem. There are data gaps, uncertainty, and multiple interests; there are also expectations and political requirements that play a role. On one hand, to admit you are wrong means that some citizens must give up water that they rely on, and that position is difficult to take. On the other hand, once the sense of outrage rises, it is hard to accept less than what you have convinced your water users and politicians is fair. Lastly, there is a lot of money at stake. For example, Mr. Robbins explained that in Kansas v. ***Colorado***, Kansas originally wanted $ 300 million in damages. ***Colorado*** reduced its damage request to $ 68 million dollars, and, ultimately, the Court awarded Kansas $ 21 million. Kansas also claimed about $ 11 million in costs, of which the Court awarded the state $ 1 million.

In sum, the ***Colorado*** Compacts Workshop of the ***Colorado*** Water Congress Fifty-Second Annual Convention provided an informative discussion of ***Colorado***'s interstate water compacts.

The sessions included an overview of the Citizen's Guide to ***Colorado***'s Interstate Compacts, a discussion of the legal background for creating and litigating a compact, and a primer on east slope compact administration. The workshop provided great insight into the historical and legal framework used to develop and maintain ***Colorado***'s interstate water compacts.

**[\*470]**

DAY 3: FRIDAY, JANUARY 29, 2010

Federal Legislation of Interest to the ***Colorado*** Water Community

Special Presentation on the Clean Water Restoration Act

Mark Pifher, Director of Utilities for Aurora Water, opened the third general session with a discussion of the implications that the current iteration of the Clean Water Restoration Act (CWRA) may have on water users. Pifher followed with a discussion of the on-going dialog between western water diverters and federal regulators regarding a proposed rule change that may require diverters to acquire NPDES permits for water transfers.

Pifher explained that Congress proposed CWRA to clarify recent, ambiguous court rulings and interpretive agency findings by defining which waters are under the jurisdiction of the federal government. Pifher framed his discussion with the ramifications that the current version of the CWRA may have on water users and then addressed recent congressional hearings that may shrink the original expansive version of the bill. Of concern to Pifher is the uncertainty that the current version of the bill brings. The bill strikes from the Clean Water Act the words "navigable waters" and replaces them with a much more expansive and exhaustive enumeration of potential water bodies, including intrastate waters and "activities affecting" said waters. Additionally, the bill states that Congress derives its power not only from the Commerce Clause of the United States Constitution, but the fullest extent granted by the Constitution.

Pifher described many of the uncertainties that water users would face should the bill pass in its current version. The expansive language of the bill makes the line between federal and state jurisdiction unclear. This may pose a potential barrier for new infrastructure construction and modifications to historically irrigated agriculture. Additionally, it would likely create a huge demand for new NPDES permits, overwhelming the current administrative mechanisms. Pifher also addressed the congressional findings enumerated in the bill. In particular, the congressional findings seem to suggest that the new law would assert federal jurisdiction over the entirety of aquatic systems, including groundwater, ephemeral streams, wetlands draining, source water, and even bird watching and photography. Pifher mused, "I can watch a bird in a bird bath, does that federalize my bird bath?" Pifher's greatest concern is that striking "navigable waters" from the Clean Water Act will overturn pertinent CWA jurisprudence and assert federal jurisdiction over areas that state and local laws previously governed. Pifher ended his discussion of the CWRA positively. He noted that testimony from himself and other western water users at committee **[\*471]** hearings have led to a number of legislative compromises. Congress clarified the ambiguous United States Supreme Court Cases and "waters of the United States" is defined to the liking of western water interests. Amendments as a result of this compromise included striking "activities affecting the waters of the United States" and adopting the current EPA definition of waters of the United States.

Despite these compromises at the committee hearings, Pifher recently learned that Congress is currently drafting a new version of the bill, titled differently and not yet released to the public. This new bill will maintain a number of the CWA's exemptions, including existing irrigated cropland and wastewater treatment. It also removes the controversial phrase "activities affecting." The bill still broadens the federal jurisdiction, however, by making any newly constructed facilities subject to federal jurisdiction. Ultimately, Congress is not likely to vote on the controversial CWRA or variations thereof during such a busy and important mid-term election year.

The federal government is considering a second potential change that could affect western water interests. In the final days of the administration of George H. W. Bush, the Environmental Protection Agency (EPA) promulgated and adopted a rule exempting water transfers and trans-basin diversions from the NPDES permit programs, so long as the water user did was not put to an intervening industrial or municipal use. However, with the recent change in administrations, the Executive branch has pushed to reexamine this question. A change requiring NPDES permits and treatment of trans-basin diversions would cripple ***Colorado*** because of the enormous amount of water transferred from the Western Slope to the Front Range. The new rule would require that transferors treat and permit the water, which is practically and economically untenable. A delegation, including Pifher, from ***Colorado*** met with a task force of high-level officials from the Department of the Interior, Department of Agriculture, and the EPA. According to Pifher, ***Colorado*** and western water interests seem well represented in this task force. There are a number of Coloradoans currently serving in these agencies and a genuine interest among the agencies in coming to a logical resolution of the issue. The delegation made many suggestions, but most importantly requested that the task force exclude trans-basin diversions and water transfers from point source regulation. At this time, a change to the rule does not seem imminent, but interested parties, particularly municipal users, should monitor the process closely because of the large consequences a change to this rule may have.

A Perspective on Working with the Bureau of Reclamation

Robert Johnson, Senior Consultant for Water Consult and HDR Engineering, and former Commissioner for U. S. Bureau of Reclamation ("Reclamation"), shared his expertise with the ***Colorado*** Water Congress on how to develop a healthy working relationship with **[\*472]** Reclamation and explained the best strategies for obtaining Reclamation funding for local water projects. Johnson opined that the best way to establish a good and trusting relationship with Reclamation is to develop relationships with the local staff and management. Additionally, Reclamation staffers and managers have recently implemented a Managing for Excellence program (M4E), designed to build relationships with customers. M4E puts procedures in place to ensure that the customer is part of scheduling, funding, and other activities. It establishes formal partnership agreements that guide the process of developing a project and encourages partnerships with customers. Johnson cautioned that Reclamation must still maintain its control over the projects, but emphasized that the formal agreements provide for a means to appeal local decisions with which the customer is unhappy.

Finally, Johnson addressed strategies for acquiring funding from Reclamation for local water projects. Because Reclamation has a bottom-up budgeting procedure, a stakeholder has the best chance of acquiring funding by applying directly to the area offices during the summer. This ensures the project is a part of the budget when it goes before Congress for approval the following spring. Beyond this local point, the budgeting process evolves into a macro process and is very difficult to alter. Secondarily, once the budget leaves the Executive branch for Congressional approval, there may be an additional opportunity to acquire funding by petitioning legislators for changes. Finally, moving projects to a "shovel-ready" point can be a very effective way of having a project funded when additional money becomes available, as was the case with the most recent government stimulus funding or other end of year budget surplus monies. Johnson also stressed that Reclamation has not fixed or codified rules for project standards. This can be somewhat frustrating for water managers, but ultimately this flexibility ensures that Reclamation considers each project on its own merits.

Plain Talk on Federal Water Quality Regulation

John Hall of Hall and Associates, addressed upcoming water quality regulations and policies being promulgated under the Clean Water Act (CWA). Hall began by noting that as the science behind water quality regulation becomes more and more complex, crafting simple solutions in the form of regulations becomes more and more difficult. As a result, the administrative process has eroded, resulting in policy declarations promulgated outside of the normal comment and hearing parameters. These complex, scientific policies pose a great financial burden to states and water users who have to employ an increasingly sophisticated and expensive army of staff in order to comply. As a solution, Hall suggests that stakeholders proffer as much input into these policy findings as possible to help mitigate possible future costs associated with compliance. Recent CWA regulations have regulated **[\*473]** boats, constructions sites, ballast water, and perhaps most consequentially, pesticide and herbicide application. Because agricultural users and application of pesticides and herbicides are so prolific, Hall hypothesizes that forcing states to issue permits for application will over-burden the application process. In addition to these regulations initiated by EPA, environmental groups have used the administrative process to file rule-making petitions. There are currently over 150 petitions being considered just involving Endangered Species Act rules. Water users must provide input at these proceedings to represent their interests. Perhaps the greatest burden already occurring are the impairment standards being imposed on streams. Once EPA determines that impairment to a stream exists, the EPA will not approve new operations that discharge into the waters unless the source is under a compliance schedule. However, this may be nearly impossible to achieve if most of the pollution in an impaired stream is the result of non-point sources because regulations do not require non-point sources to have compliance schedules making it nearly impossible to add additional discharges (i.e. grow housing or industry).

Typically, the EPA reaches conclusions about nation-wide impairment standards by using flawed statistical methods. Recently, plaintiffs in Pennsylvania won an administrative victory against an unfair standard by complaining to the Office of Management and Budget (OMB) that the nationwide standard would cost upwards of $ 500 billion. The OMB sided with the plaintiffs and required that the EPA standards be subject to peer review. The peer review found that the impairment standards were inappropriate. Hall commented that petitioning for peer review can be an effective tool at battling burdensome regulatory restraints. Notably, the agency has yet to overturn the contested regulation in Pennsylvania. One final means to combat these burdensome standards can be petitioning for a variance from the standards. Often regulatory bodies grant these variances on extended schedules (sometimes even up to thirty years) if the municipality or user can show that it is maximizing benefits while minimizing economic burdens.

Platte ***River*** Recovery Implementation Program Water Plan Update and Look Ahead

Jerry Kenny and Beorn Courtney from Platte ***River*** Recovery Implementation Program Executive Director's Office, discussed the progress being made by the Platte ***River*** Recovery Implementation Program. The purpose of the program is to effectuate an agreement reached by the three basin states of the Platte ***River*** and the Secretary of the Department of the Interior to maintain stream flows and acquire lands in an effort to benefit targeted endangered species that inhabit the basin. Jerry Kenny spoke on the issue of land acquisitions, and Beorn Courtney addressed the water delivery aspects and progress of the program. The targeted species of the program are the Whooping **[\*474]** Crane, the Pallid Sturgeon, and the Piping Plover. The agreement calls for the acquisition of 10,000 acres of lands for the purposes of habitat rehabilitation. At this point, the program has acquired nearly 6,000 of the agreed acres. The office runs the program under an adaptive management program that allows the program to move forward in a scientific manner, gathering information to better use the land and water for better rehabilitation of the endangered species.

In addition to the on-going land acquisitions, the program must acquire an additional 130-150,000 acre-feet of water to supplement the current in-stream flows. This quantity increases water flow, aiding the habitat rehabilitation, and compensating for consumptive water uses that existed prior to the agreement. In addition to this overall flow increase, the managers have an immediate duty to ensure that certain short duration high flows or "pulse flows" travel through the basin resulting bank full stage for periods of three to five days at various times of the year. Because the plan requires managers to implement the pulse flows on an "as soon as possible" basis, the program has focused on engineering infrastructure to ensure their implementation. Economic and hydrologic studies have indicated that the program can use existing hydro-electric conveyance infrastructure combined with a new reservoir to stage water in order to send the pulse flows into the area when necessary at various times of the year. The studies also indicate that this new reservoir may also help maintain 30,000 acre feet of the long-term target flows thus accomplishing both goals of pulse flows and the long-term target flows all implemented on a schedule that allows the program to stay within its original budget. The program is researching additional ways to acquire the remaining flow needed to achieve the target flows mandated by the agreement, including efficiency incentives for water owners and the possibility of purchasing rights.

At Your Service: The Water Resources Archive

Patty Retig from Water Resources Archive ("Archive") at ***Colorado*** State University, discussed the mission of the Archive: to document all aspects of water in the western United States. The Archive contains numerous types of documents, including ditch company meeting minutes, diaries, correspondence, photographs and maps dating back as far as the 1870s. In addition to documents, there are materials that catalog various historical water data points, such as groundwater data from the Eastern Plains of ***Colorado***. Retig emphasized that the Archive is continually adding to its collection. For instance, the Archive recently acquired the files from the United States Supreme Court case Kansas v. ***Colorado***. Currently, the Archive is in the process of digitizing its records and is welcoming input from the water community.

**[\*475]**

§ 1031 Exchange of Water Rights

Kennen Cohen, Division Manager of Asset Preservation, Inc., opened by introducing the concept of " § 1031 exchanges." [*Internal Revenue Code § 1031*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:8SN7-CJF2-D6RV-H1S8-00000-00&context=1516831) provides, in part, that the IRS recognizes no gain or loss in the exchange of property for other property of a "like kind." Cohen explained that generally an exchange is not a two party swap. In fact, most exchanges take place through an intermediary exchange company. Furthermore, "like kind" property does not have to be property of exactly the same type. The IRS merely requires, in the water rights context, that "like kind" property be an interest in real property, though personal property is also exchangeable. For example, one could exchange a piece of farmland for a leasehold interest that is at least thirty years in duration.

In the water rights context, ***Colorado*** and most other states consider perpetual water rights to be an interest in real property, allowing owners to exchange them for other real properties. Cohen emphasized that the water rights must be perpetual or else they will not qualify as like kind property. Cohen then went on to address whether ditch company stock is a real property interest. Generally, the IRS does not consider stock to be real property. However, recent legislation has removed ditch company stock from the definition of stock, and, at least in ***Colorado***, owners may exchange ditch company stock under § 1031. Cohen explained that the typical process involved in a § 1031 exchange is: the seller deeds the property to the buyer, the seller then escrows the proceeds with an exchange company who then distributes the funds to the seller of the new piece of property. Cohen illustrated the benefits that § 1031 exchanges can have for water rights holders. Recently, several water rights holders in southern ***Colorado*** sold their rights to a municipality. The sellers escrowed the funds with an exchange company and then, within the 180-day statutory period, acquired a number of pieces of property ranging from farmland to apartment complexes. This resulted in a complete avoidance of capital gains taxes on the proceeds of these long-held water rights, preserving a great deal of the sellers' capital and keeping a large amount of funds cycling through the local community instead of to the federal government.

Aaron O'Quinn

**[\*476]**

[*2*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:8T9R-T352-D6RV-H379-00000-00&context=1516831)[*8TH*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:8T9R-T502-8T6X-7323-00000-00&context=1516831) ANNUAL WATER LAW CONFERENCE

WHOSE SPIGOT IS IT?

San Diego, California February 17-19, 2010

Water Law 103: Water Federalism: "Get Out and Pay Us"

Robert "Bo" Abrams, professor at Florida A&M University College of Law in Orlando, Florida, started the morning with a discussion of federalism at the sovereign level focusing on the Constitutional division of authority and state police power regarding property and resources. Abrams explored three areas of federalism: (1) pre-twentieth century, (2) twentieth century, when the balance of power began to shift to the federal government mid century; and (3) post 1978, when the states began to regain power.

[*First*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:8T9R-T2X2-D6RV-H374-00000-00&context=1516831), Abrams addressed pre-twentieth century federalism. The nation changed shape through the Louisiana Purchase and the Treaty of Guadalupe Hidalgo, and questions arose about how later-formed states would be treated in regard to natural resources found within their boundaries. Once those areas became states, they argued for recognition of their sovereignty as being the same as existing states. This policy, known as the equal footing doctrine, ensured that all states would have a comparable police power over water and other natural resources. However, in the West, the equal footing doctrine meant that arid states might still have to adopt riparianism as a matter of federal law. In California Oregon Power ***Co***., v Beaver Portland Cement ***Co***., the Court announced the Severance Doctrine, which severed water rights from federal land grants. Despite the fact that the Doctrine does not address navigable waters, the courts have treated it as if it did. This Doctrine led to western states becoming prior appropriation states. The Severance Doctrine does not change the federal power of navigation servitudes or of commerce power. The federal government still has the power to regulate, such as through the Clean Water Act and the Endangered Species Act.

Next, Abrams examined twentieth century federalism. Since the New Deal, the Court has construed the interstate commerce power broadly to support many federal programs. Reclamation and power generation remained solidly in the federal government's purview. **[\*477]** Further, during much of the twentieth century, the Court allowed states to discriminate in favor of their own citizens in regard to natural resources, and the Court extended the Dormant Commerce Clause to natural resources.

Finally, Abrams notes that beginning in 1978 with the decision in California v. United States, the federal reclamation program has had to adhere closely to state law requirements regarding water regulation and allocation, curtailing some federal power under interstate commerce power. Following Sporhase v Nebraska in 1982, states could rely on the Dormant Commerce Clause and could no longer implement anti-water export statutes because water is an article of commerce that brings it within the purview of the federal government. Since Sporhase, the only water hoarding that will survive Dormant Commerce Clause scrutiny are facially even-handed enactments. Abrams also discussed interstate allocations of shared basins that occur through congressional apportionments, interstate compacts, or equitable apportionment.

Holly Doremus, professor at Boalt Hall School of Law, University of California, spoke next. Dovetailing with Abrams' presentation, Doremus noted that the main exception to the primacy of state power is federal reserved water rights. These rights are essentially a wild card in the state law system that lie dormant until they are needed. Two types of reserved rights exist: tribal and non-tribal.

Focusing first on tribal rights, Doremus discussed the Winters doctrine, noting that that priority date of appropriation is the date of creation of the reservation. She then explained that the measure of the right is not use, but rather what is necessary to support tribal needs. Doremus then moved to non-tribal rights, stating that the Winters doctrine applies to areas such as national forests and national recreation areas. Discussing U.S. v. Cappaert, Doremus explained that when land is reserved for a specific public purpose, water is impliedly reserved also; the scope of the reservation is only what is needed to support the purpose, and no more. However, U.S. v. New Mexico narrowed Cappaert noting that federally reserved water can serve only the core purpose of federal reserved lands. Doremus concluded her presentation with a discussion of reclamation federalism, observing that it is a major source of tension between state and federal governments.

Danielle Sexton

Changing Paradigms and National Agendas

Thomas Sansonetti, of Holland & Hart L.L.P. and moderator of the panel, opened the discussion noting that changes in the presidential administrations often lead to changes in paradigms for federal agencies. Mr. Sansonetti noted that while some policies result from lobbying by interest groups, many policies however stem directly from the administrations themselves. He pointed out that the Obama administration has been no different in these regards. To that end, the **[\*478]** panel proceeded to identify the hallmarks of the Obama administration's water policies.

Professor Barton Thompson of Stanford Law School then outlined the basic themes he believes the administration is enacting through the federal agencies. (1) Principal of Partnership - the Obama administration seeks to revitalize state and federal partnerships. Mr. Thompson noted that it remains to be seen whether the agencies will merely participate in these partnerships, or whether the agencies will attempt to influence decisionmaking policies at the state and local levels. (2) ***Co***-Equal Objectives - a term the Obama administration has been using to refer to its attempts to promote environmental and economic interests. The administration's policy promotes projects that stress the importance of both interests, particularly where the interests are not inconsistent with each other. (3) Ecosystem Services - the Obama administration is also attempting to incorporate ecosystem services, the concept that the environment provides services useful and marketable in our economy, into federal planning and agency considerations. (4) A Need to Address Climate Change - likely the most pervasively stated policy, the Obama administration intends for federal agencies to plan for climate change. Mr. Thompson noted that, to date, the administration has espoused "no regret" policies, like increased water storage and reduced consumption, which face little opposition. However, the degree to which the administration will push more unpopular, but perhaps necessary for mitigation and adaptation, strategies is unclear. (5) Watershed Planning and Ecosystem Management - The administration is pushing a holistic, basin-wide approach to managing our water resources. (6) Water Marketing - Finally, the last hallmark of the Obama administration's water policy has been the administration's emphasis on the need for active water markets.

Lynn Scarlett, Former Deputy Secretary of the Department of the Interior, next spoke and focused mainly on the challenges which the Obama administration faces. She emphasized several new complications: (1) climate change; (2) federal agency's fragmented management authority and jurisdiction; (3) non-point source pollution; (4) aging infrastructure of federal water delivery systems; and (5) the lack of relevant data. Ms. Scarlett noted that the Obama administration has actively engaged in trying to solve many of those problems. Ms. Scarlett then recommended, considering these new complications, that the administration should focus on several strategies. Chief among those strategies would be flexible ***river*** and reservoir management with a focus on ecosystem services. As an example, Ms. Scarlett spoke about floodplain restoration which would reduce the reservoir storage required for flood management, subsequently increasing the storage available for water use. Another strategy she emphasized was urban infrastructure greening, which would both reduce runoff management infrastructure and also increase groundwater storage in urban environments. Ms. Scarlett also agreed that water marketing needed to **[\*479]** be a more prominent strategy in the administrative policy.

Cynthia Koehler, a Senior Consulting Attorney with the Environmental Defense Fund, then spoke regarding her work on the California Bay Delta issue. She synthesized four major points from her experiences working with the federal agencies, which she believed were indicative of how the Obama administration was influencing federal agency work. First, Ms. Koehler stressed a renewed effort in the administration to coordinate federal agencies. Second, the Obama administration is stressing the importance of partnerships and collaboration between federal agencies, stakeholders, and the states. This emphasis on partnership often manifests where federal agencies can provide either financial assistance or technical assistance. Third, the Obama administration is directing agencies to focus on concrete actions, which have broad support. In other words, the administration is directing the agencies to move forward on projects in which the interested parties generally agree upon the outcome. Finally, Ms. Koehler noted that the Obama administration has been avoiding conflict as a tool for resolving water disputes. Ms. Koehler identified this policy as a way of pulling the federal agencies out of the "cycle of conflict." As an example, she noted that in the California Bay Delta dispute, the invasive species issue is much less controversial than other problems. Therefore the federal agencies focus on a resolution on issues that the parties agree upon, instead of only focusing on issues which the parties cannot yet agree upon. As a final point, Ms. Koehler noted that in terms of water policy, the Obama administration has been actively grappling with the water issues; but from a practical perspective, many of the difficult or attenuated decisions within the Obama water policy have yet to be addressed.

Ryan McLane

Water Settlements: Can They Ever be Final?

Settlement is the preferred method to resolve disputes, especially disputes over water, as it is a shared resource. This panel explored the potential legal and practical challenges that face negotiators in settlement agreements and the issues that settlement implementers encounter, and asked the question: can water settlements ever be final?

Settlement negotiations often begin among water right holders because their adjudication has staggered and the parties want finality or they realize that a settlement agreement will better address their needs of water. Typically, in these cases, after years of settlement negotiations, the final settlement is made public, where it requires legislative action by an Indian Tribe, the State, or the United States Congress. At this point, non-parties often become involved.

Sarah Bond, Assistant Attorney General, began her presentation discussing the necessity of settlements for states who are seeking to participate in federally funded projects, and for states and tribes who **[\*480]** are seeking expensive infrastructure for water solutions to reserved water rights claims. She noted that, in the past, the United States has been unwilling to fund water projects unless the involved states and tribes can reach an agreement on the water in the sources.

Bond continued to discuss the history of the Yellowstone ***River*** Compact, an interstate stream compact among Montana, Wyoming, and North Dakota, which was approved by the United States. The compact was entered on December 8, 1950, and each state later legislatively ratified the Compact. Montana and Wyoming had been negotiating this settlement for almost twenty years before the Compact was signed, but an agreement always failed because Montana and Wyoming had different ways for implementing prior appropriation.

The current dispute regarding the Yellowstone ***River*** Compact is about the pre-Compact rights, which the parties left unquantified. The drought in the early 2000s resulted in Montana believing that its pre-1950 rights were not being satisfied, while Wyoming's post-1950 rights were receiving their water. Montana viewed the Compact as not allowing Wyoming to take such rights, if Montana was not receiving its pre-1950 water. However, Wyoming viewed the legislative history and the lack of specific division of pre-Compact water as indicators that the pre-1950 water rights were essentially excluded.

Bond concluded by discussing how parties' interpretations of compacts can change over time, while the agreements themselves usually remain intact. The United States has supported the development of the nation's water resources and the environmental consequences of building large federal dams. Because of this, Bond seems certain that parties will ultimately settle or comply with the ultimate decisions, whatever they may be.

Melinda Kassen, Director of Trout Unlimited's Western Water Project, explored the alternative of pursuing settlement rather than litigation in the context of water rights in the West. Kassen discussed three projects: the Black Canyon of the Gunnison ***River*** Reserved Right, the Chester Dam Hydropower License, and Montana's Forest Service Water Rights Compact.

In 1933, President Hoover designated the Black Canyon of the Gunnison ***River*** as a National Monument. In 1999, Congress upgraded the Black Canyon to a National Park. In 2001, the U.S. filed an application to quantify and perfect the Black Canyon reserved right. Based on studies, the National Park Service sought year-round base flows, an annual spring peak flow and "shoulder flows" to transition between base and peak. Over 300 parties joined the water court case, many to object to the application, while some Non-Governmental Organizations ("NGOs") filed in support.

However, in 2003 the Department of Interior and the State of ***Colorado*** announced that the United States would abandon most of the reserved right. The NGOs saw this as ignoring the ecological needs of the Black Canyon, and they asked the water court to stay proceedings to **[\*481]** allow them time to challenge the agreement. The water court upheld the stay. In federal court, the NGOs argued that the United States violated the National Environmental Policy Act ("NEPA"), and the federal court held in their favor, invalidating the agreement. Kassen felt that federal and state governments usually exclude NGOs from "a seat at the table." However, by "pulling up a chair," the NGOs were able to gain the respect of the other parties, and have since been more included in settlement negotiations.

Regarding the Chester Dam Hydropower License, Kassen noted that the negotiation was a successful example where the parties talked about interests rather than their positions, respected each others' bottom lines, and worked together to find a solution that achieved each party's goals. Kassen concluded by noting that regardless of whether NGOs legally have to have a "seat at the table," when parties allow NGOs to be involved in settlement negotiations, it will affect the outcome in a meaningful way.

Carl Ullman, Director of the Water Project for the Klamath Tribes in Oregon, discussed the Klamath Basin Project. He examined the background of the Klamath Tribes' water rights, the political interests joined in the struggle of dealing with policy changes, the policy initiatives that are aimed at resolving some of the Basin's resource issues, and the challenge of fitting the litigation demands of the adjudication into the negotiation of policy issues. He noted that most parties to the Klamath Basin Project are committed to a path to end litigation and to work on a settlement agreement that will provide new opportunities for all water-dependent communities in the Klamath Basin.

Kathlyn Bullis

Keynote Address: Interior Water Issues: A Year of Transition and Plans for the Future

David J. Hayes, Deputy Secretary of the Interior, reminded the attendees that lawyers are problem solvers, which is so important in water issues. Water is integral to what is happening at the Department of Interior ("Interior"). Secretary of the Interior, Ken Salazar, has created, with the President's support, five priorities for Interior that all include water: (1) Energy and Climate Change; (2) Treasured Landscapes; (3) Reconnecting Youth to the Outdoors; (4) Repairing Relationships with the First Americans; and (5) Water.

[*First*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:8T9R-T2X2-D6RV-H374-00000-00&context=1516831), Hayes explained Interior's priority surrounding energy and climate change. During this administration, there is a refocus on renewable energy. Currently, solar energy, which uses water in its production, is prohibited on public lands, but this administration is moving aggressively toward implementing it. The goal includes achieving five to ten thousand megawatts of energy on public lands by the end of 2011. Interior also wants to increase offshore wind energy **[\*482]** because it is twenty percent more efficient than onshore wind energy. During the Bush administration, there had been jurisdictional disputes that had stalled growth in wind energy. In fact, the governments of all the Atlantic states are planning to meet very soon to discuss this possibility. The current administration has placed a huge emphasis on climate change. Hayes, as the primary Interior manager, has seen the fire season lengthen, wildfires strengthen, and coastal lines change. While there was good work during the previous administration, lack of communication between bureaus slowed progress. A secretarial order has now created components to enable science centers to work regionally and with locals in order to implement new science. The federal government is the catalyst to bring interested parties together, provide baseline data, and facilitate coordination. For example, the Bureau of Reclamation will set up eight landscape conservation cooperatives in the ***Colorado*** Basin.

[*Second*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:8T9R-T352-D6RV-H379-00000-00&context=1516831), Interior emphasizes the protection and conservation of treasured landscapes. By returning funding to the Land and Water Conservation Fund, Interior hopes to restore damaged landscapes. These sites include water-based ones such as the ***Colorado*** ***River*** Basin, Glen Canyon, the Great Lakes, Chesapeake Bay, the Everglades, San Joaquin Valley, and California Bay Delta.

[*Third*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:8T9R-T372-8T6X-731R-00000-00&context=1516831) and [*fourth*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:8T9R-T3H2-D6RV-H37G-00000-00&context=1516831), Hayes noted that Interior plans to help reconnect youth to the outdoors by involving young people in water activities. Next, Hayes discussed repairing relationships with Native Americans by addressing Indian water rights settlements.

Finally, Hayes examined Interior's opportunities to place more consistent attention on water challenges. These include the United States Geological Survey's science component and WaterSMART, a programmatic effort to improve spending practices.

Hayes ended his lunchtime talk by answering questions from the attendees.

Danielle Sexton

Breakout Session 1A: Frontiers of Science

Lynn Bergeson, of Bergeson & Campbell, P.C. and moderator of the panel, first introduced the topic: the presence of micropollutants and the water quality effects they have on our drinking water. Micropollutants are trace measures of chemicals that may include pharmaceuticals, disinfection byproducts, and nanomaterials. Ms. Bergeson noted that much of the current debate centers on which micropollutants are present in the water, how to identify them, and then how to communicate those findings to the public. She noted that while determining the standards or limits on micropollutants is a major concern, the lack of information regarding these pollutants makes it hard to identify contamination, and then assess the harm resulting from the contamination.

**[\*483]** Mae Wu, a Program Attorney with the Natural Resource Defense Council, then spoke regarding the concerns with micropollutants. She first noted that humans produce approximately 80,000 to 90,000 different chemicals and that almost all of them make their way into drinking water supplies. She then noted that less than ten percent of those chemicals have data on their effects in drinking water. According to Ms. Wu, the presence of micropollutants is therefore alarming because the regulation of chemicals usually occurs when regulators can show known categories of humans at risk, high concentrations of the chemical, or knowledge of toxicity. Because limited data exists in regards to most of these micropollutants, regulation or protection of our drinking water sources rarely occurs.

Pankaj Parekh, Manger of Water Quality Compliance at Los Angeles Department of Water and Power, then gave a public water supplier's perspective of micropollutant contamination. He noted that water quality regulation may not provide an effective response to micropollutants. Mr. Parekh noted that federal regulations look at the maximum contamination levels of chemicals within drinking water. But, because water suppliers only look at the water contamination, not other sources of contamination, public exposure to unhealthy levels of contamination can occur regardless of water quality regulations. Furthermore determining the maximum contamination levels of every chemical, in Mr. Parekh's opinion, is not the right approach. Mr. Parekh noted that public health issues are expressed in the existence of a particular harm, such as skin cancer, not the existence of an elevated chemical concentration in the water source. Mr. Parekh therefore advocates for a more holistic regulatory approach, where the regulators first identify the public health issues, and then regulations address the sources of harm.

Next Justin Pritchard, a journalist with the Associated Press, discussed the recent articles he wrote concerning the existence of trace chemicals found in the public drinking water supply. He first pointed out that over 41 million households in America have trace amounts of pharmaceutical chemicals found in their tap-water. He noted that much of that pharmaceutical contamination occurs because of the "toilet-to-tap" drinking water systems that most American cities employ. Because humans rarely metabolize all the pharmaceutical chemicals that they ingest, and because municipal water treatment plants don't remove pharmaceutical chemicals from the effluent or from the water supply, large portions of the trace pharmaceuticals found in the tap occur as a result of human waste. He also noted that another large source of pharmaceutical contamination was the health care industry itself. The health care industry disposes approximately 250 million pounds of pharmaceutical drugs into the wastewater system every year. Mr. Pritchard noted that the government regulates little of this "pharma-water." He noted that the FDA needs to consider environmental impacts resulting from the improper disposal or prescription drugs during the FDA drug approval process. He argued **[\*484]** that the FDA should consider environmental impacts of disposed pharmaceutical waste in order for drugs to get regulatory approval, particularly because the health effects are basically unknown.

Ryan McLane

Breakout Session 1B: Cities First - Water for Municipal Growth

Christopher H. Meyer, of Givens Pursley LLP in Boise, began his discussion about Idaho's municipal water law by proclaiming that, while Idaho was not known for being on the cutting edge of many things, it is on the cutting edge regarding its regulation of municipal water law. Mr. Meyer discussed the basic challenges for municipalities within the prior appropriation framework. He noted that while in most industries in the United States, speculation is seen as important, but in water law, speculation is despised. The feeling of many western states regarding water is "use it or lose it." This, of course, is difficult to reconcile with the planning that municipalities must take part in regarding their water supplies. Municipalities need to have leeway when it comes to gathering the amount of water that they will need in the future. In the past, the "Great and Growing Cities Doctrine" and the "Growing Communities Doctrine" have acknowledged this need.

These doctrines are essentially an exception in most states to the forfeiture rule. In Idaho, rate of flow is the measure, and not the actual quantity of water. Mr. Meyer noted that this rule was not planned, but randomly came to be. However, municipalities have been required to engage in full disclosure and long time planning for their future water supplies, which results in the municipalities having to quantify their water rights. In Idaho there are several prohibitions on speculation, including a prohibition on obtaining future needs if there are conflicting plans, and the prohibition against the sale of future water rights.

Idaho learned from ***Colorado***'s method for dealing with municipalities. By doing so, Idaho made it optional for municipalities to operate under the 1996 Act. In Idaho, there must be an affirmative step to protect a water portfolio under the 1996 Act. Also, a municipality must show its entire water portfolio before being allowed to adjudicate a new water right. Idaho has also expanded the definition of municipal providers.

John Arum, attorney at Ziontz, Chestnut, Varnell, Berley & Slonim in Seattle, represents western Washington Indian tribes regarding the Washington Municipal Water Law of 1993, which is very similar to Idaho's 1996 Act. The tribes are concerned about the law because they have rights to harvest salmon, which are substantially affected by the water levels in the ***rivers***. From the Tribes' perspective, the expansion of municipal water rights is done at the expense of water rights of others. The definition of a municipal law provider in the 1993 Act has resulted in the expansion of what qualifies as a municipality and **[\*485]** overwrote prior case law on the subject. This definition included private developers as being municipalities.

Under Washington law, a perfected water right certificate cannot be perfected based on system capacity, but must be perfected based on beneficial use. The 1993 Act overrode this law for municipalities. The 1993 law also allowed municipalities to expand their areas of water service without going through an actual change process. The Tribes see this as bad because the municipalities have no need to show they are not injuring other users. They only have to show that the change is consistent with a land use plan. This has taken a water adjudication process and turned it into a planning process. Most Tribes and individuals are left out of such planning procedures. Mr. Arum is concerned that this law is poorly premised on the fact that water is still abundant in the state of Washington. However, this is not true, as most basins are fully appropriated.

Generally Mr. Meyer and Mr. Arum provided two very different views of municipal water supply planning, however both were able to agree upon the fact that inevitably in water supply planning, one party will be harmed, be they municipalities, farmers, Indian Tribes, or the physical environment. They agreed that there is no perfect answer to satisfy all parties. However, they were also in agreement that there was some need for change in both of their states.

Kathlyn Bullis

Breakout Session 2A: The Energy - Water Nexus

Christopher Ellison, of Ellison, Schneider & Harris, L.L.P. and moderator of the panel, opened the discussion noting that connections between energy and water exist in a variety of fashions. As examples, he noted that nineteen percent of California's electricity use is for water related purposes, and that in the year 2000 electrical generation accounted for thirty-none percent of water withdrawals. Mr. Ellison stated that because of the connection between energy and water uses, any changes in water use will effect energy use, and vice versa. Because of this connection, and because of society's expanding need for more water and more energy, there is a real need to address the interplay between the sometimes competing uses.

John Merson, the Water for Energy Project Lead for Sandia National Laboratories, spoke next regarding the technical ties between energy and water use. Mr. Merson began by discussing the use of water in generating and producing energy. He first stated that when it comes to energy production, increased water use is often a tradeoff to increased or more efficient energy production. As an example, he spoke about new methods of cooling processes used in electrical generation plants, which withdraw less water but actually consume more water. He then talked about the need to develop alternative energy sources to fossil fuels and how nearly all of the alternative energy **[\*486]** sources require a comparatively large demand of water compared to existing fossil fuel production. He referred to oil shale development, which results in large withdrawals of groundwater in order to access the oil. Then Mr. Merson pointed out that the connection exists in reference to producing more water. He noted that our clean fresh water use meets our existing supply, and that to treat or reuse additional fresh water we must use additional energy. Because of the technical connection between our water and energy uses, Mr. Merson explained that a balance of water use interests must be weighed against the energy use interests to determine the efficacy of any project. Furthermore, he notes that because of the connection between the uses, the future development of either use is constrained, which will lead to conflicts.

Finally Jim Caldwell, Former Assistant General Manager of Los Angeles Department of Water and Power, ended with a case study of the Los Angeles water and energy demands. Mr. Caldwell's case study highlights that Los Angeles, which faces considerable water and energy shortages in the future, can transition energy consumption into renewable energy sources, and change consumption patterns of water use to meet its future needs. Mr. Caldwell noted that this case study shows that these plans are also economically viable. From the energy side, Mr. Caldwell first outlined the three major renewable energy sources that Los Angeles should develop: the Tehachapi Wind Resource Area, the West Mojave Desert for solar energy production, and the Salton Sea basin for geothermal energy production. Mr. Caldwell notes that among these areas, Los Angeles could reasonably supply sixty percent of its electricity demand with renewable energy. This would result in about an eighty percent carbon-free electricity supply. And as Mr. Caldwell noted, this is all possible based on current technology. On the water side, Mr. Caldwell outlined the three major water conservation measures that Los Angeles should develop: standards for further reductions of appliance fixture water use, increase drought tolerant landscaping, increase water recycling measures, and improve groundwater storage of storm runoff. Mr. Caldwell pointed out that by implementing these measures, Los Angeles could see a fifty percent increase in effective water supply. Mr. Caldwell noted that the proposed energy and water use improvements, if paired together, would solve both the energy and water problems facing Los Angeles. On the other hand, Mr. Caldwell warned that attempts to increase water supply that ignore energy demands, such as using desalinization plants would result in a greatly increased energy burden on Los Angeles. Similarly, energy supply projects that ignore water demands, like nuclear plants, would result in an increased water burden on Los Angeles.

Ryan McLane

**[\*487]**

Breakout Session 2B: A LID for the Rainy Day Fund: Storms and Water Management

Moderator, Wendy B. Crowther of Clyde, Snow & Sessions in Salt Lake City, began the panel by explaining how Low Impact Development ("LID") can create more opportunities for water conservation.

Frances Spivy-Weber, Vice-Chair and a public member of the California Water Resources Control Board, had a unique view of LID as a non-attorney. Spivy-Weber discussed the emergence of LID from the water supply side. The purpose of LID is to try and use structural and non-structural means to restore a watershed to what it was before pavements and houses. LID can include planting trees, laying porous pavement and separated down spouts, and using that water for a garden or collecting it in a rain barrel. From a water quality perspective, storm water has become problematic, as it puts many pollutants into the water supply. Although the Clean Water Act has created mechanisms for regulating storm water, LID can be very helpful in this aspect also. Spivy-Weber closed by noting that for water suppliers, the regulation of water quality is very important. She proposed that having construction storm water permits, obtaining data collection on where the waters of that state travel, and setting targets for recycled water and storm water collection are important places to start.

Mary Lynn Coffee of Nossman LLP in Irvine, California, next discussed low impact development from the stand point of water quality. She discussed the need for EPA guidance in LID, which both the Natural Resource Defense Council and home builders recommend. The issue, however is not whether the EPA should provide regulation on LID, but what the regulatory standard should be. Should the standard be retention and infiltration, or detention and treatment? With retention, the water is held and never released, while with detention, the water is released once it is treated. Ms. Coffee noted that no matter what, the regulatory standard should mimic the natural water balance.

Noah Garrison from Natural Resources Defense Council in Santa Monica, California, discussed the future implications of LID. With the urbanization of our landscape, it is imperative that porous surfaces are used in future development. Several states, Pennsylvania, Washington, D.C., and California already have requirements built in through their adoption of the Clean Water Act. Naturally, water runoff should be between zero and twenty percent; however, after urban development runoff is between eighty and one hundred percent. Garrison also noted that if water runoff stayed in the same basin, then there would be less need for pumping water into different basins. Garrison ended by discussing the importance in California of capturing as much snowpack melt flows, before it flows to the ocean.

Kathlyn Bullis

**[\*488]**

Fissures in Constitutional Bedrock

Rick Frank, Executive Director of the Center for Law, Energy & the Environment at the University of California School of Law and moderator of the panel, introduced the panel and gave a short summary of the topic.

Professor John Echeverria from Vermont Law School spoke first regarding the recent U.S. Court of Appeals for the Federal Circuit decision in Casitas Municipal Water District v. United States. In Casitas, the appellate court held that an Endangered Species Act requirement that a dam operator pass a portion of the water through a fish ladder was a physical taking of the water. For background, Mr. Echeverria summarized that a takings issue occurs when there is a property interest which has been taken by some kind of government action. Mr. Echeverria went on to outline the basic doctrines of regulatory takings. The Supreme Court held that the Penn Central test applies when evaluating a takings issue. Under this analysis, the court looks to any economic impacts resulting from the government regulating action, what degree of interference exists with investments in the regulated activity, and the character of the government action. The analysis is deferential to the government regulation. Furthermore, the Supreme Court has held that the per se Lucas takings rules apply rarely, and only when the regulation renders private property valueless, or if the government regulatory action involves a physical occupation. These rulings make the Casitas case interesting because the appellate court held the regulation to be a physical taking, which would subject the regulation to the stricter per se Lucas test. The basis for the appellate decision was a U.S. Court of Federal Claims case, Tulare Lake Irrigation District v. United States. In this case the judge ruled that since a certain amount of water was required to be left in the ***river***, it was a physical taking and subject to the per se test. Interestingly, the U.S. Court of Appeals for the Federal Circuit distinguished Casitas from cases applying the Penn Central test and rationalized that the amount of water required to flow through the fish ladder was a physical taking. Mr. Echeverria noted that now Casitas throws into question what regulations regarding water use are considered takings. He argues that the Casitas decision conflicts with Supreme Court precedent on the matter and that the deferential Penn Central test should apply. Mr. Echeverria opines that courts will overturn or confine the Casitas decision.

Next Professor Christine Klein from the University of Florida, Levin College of Law, gave a presentation regarding the dormant Commerce Clause. Professor Klein started by outlining the facts behind the most famous Dormant Commerce Clause decision in the water law realm, Sporhase v. Nebraska. She then explained that since Sporhase, the water law practitioners have continued to cite the holding of the case, "groundwater is an article of commerce," without looking to further precedent. Professor Klein then recommended that the legal **[\*489]** community should start looking at the water issue again. In support of this conclusion, she then pointed to three common misunderstandings about the Sporhase holding and the dormant Commerce Clause. First, Sporhase asked and answered the wrong question. In that case the Court analyzed whether groundwater was an article of commerce. Instead, the Court should have analyzed whether the state regulation imposed an impermissive burden on commerce. Whether the regulation in question imposes an impermissive burden is the standard on which other Dormant Commerce Clause cases rest, and that should be the question when discussing water as well. Second, after Sporhase a lingering disconnect remains between the Dormant Commerce Clause and the Commerce Clause. In water issues the Dormant Commerce Clause has become merely a mantra that water is an article of commerce. But the Commerce Clause tells us that the regulation of water and land is a quintessential state function. The result of these two conflicting holdings evidences a disconnect regarding the permissible extent of federal or state regulation of water. To overcome this disconnect, Professor Klein recommends that water attorneys begin looking for guidance in dicta from cases such as Rapanos. Third, Professor Klein points out that since Sporhase, water law has not recognized that not all water is the same. In fact current Dormant Commerce Clause thinking does not look to whether the water at issue is surface or groundwater, whether it is water as right or water as a resource, or what water rights doctrines govern the use of the water. Professor Klein believes that an analysis of what and how the water is regulated informs the constitutional analysis better than a blanket rule on all water.

Charles DuMars of Law and Resource Planning Associates, P.C., next spoke regarding the Compact Clause. He noted that the under the Compact Clause, a fundamental question exists as to what control a state has of its own resources. As an example of that struggle, he compared an interstate Commerce Clause case, Sporhase v. Nebraska, to Kansas v. ***Colorado***, a case which led to an interstate compact. Mr. DuMars noted that these cases appear irreconcilable. He explained that the holding in Sporhase amounted to a ruling that under the Dormant Commerce Clause, states had no control as to the export of water. Then he noted that under the equitable apportionment language in Kansas v. ***Colorado***, every state has an absolute right to get a determination from the Supreme Court regarding the available water the state can use. Mr. DuMars noted then that the question is whether a state can protect its water arguing the allocation of the compact governs, or does the ruling in Sporhase prohibit a states protection of its water resources in this fashion? Mr. DuMars then argued that because Congress must ratify interstate compacts, the compacts convert into federal law upon ratification. As such, the signatory states may pass

**[\*490]** legislation regarding that allocation of water under the compact without fear of the Dormant Commerce Clause control. In Mr. DuMars opinion, this includes reasonable limitations upon the export of water.

Ryan McLane

Comments from the Solicitor, U.S. Department of Interior, Washington, D.C., Hillary Tompkins

Solicitor Tompkins was a stay-at-home mother, who was teaching part-time in a law school when Ken Salazar offered her a position as the Solicitor in the U.S. Department of Interior. Tompkins was born in Zuni, New Mexico on the Navajo Nation Reservation. However, Tompkins was adopted by a non-native American family and grew up in New Jersey. She did not meet her Navajo family until she was fifteen years old.

Tompkins finds her experience as a child telling in terms of the impact that the policies of the Department of the Interior have on peoples' lives. Tompkins noted that her life has been a direct product of Federal Indian Policy. Federal Indian Policy also allowed her to receive a great education at excellent schools under the Navajo Nation Scholarship.

Tompkins started her career representing Pueblo Indians in New Mexico in water law proceedings. It was then that she gained the appreciation for water law. She discussed the need to balance complexities in the practice of water law including the unpredictability of mother nature; the unpredictability of the courts; the lengthy process of adjudicating water rights; the challenge of unadjudicated water rights; the history of agriculture in the western United States; the history of Indian water rights; the Endangered Species Act; the Clean Water Act; and the role of the federal government on interstate ***rivers***. However, Tompkins offered one unifying message: "Water is the Core of Our Survival."

Tompkins spoke of her experience in the Department of Interior, and she praised Ken Salazar as being very enthusiastic, with a vision to implement change. She discussed several issues the department is currently addressing, including impacts of climate change, adaptive management, ecosystem restoration, and new energy projects. She stated that the department and the Solicitor's Office are working to become more engaged across disciplines.

Overall, Tompkins' message was that things are changing at the federal level, and she extended an invitation to everyone to work

together to find opportunities to ensure the availability of our natural resources for future generations

Kathlyn Bullis

**[\*491]**

Drought Down Under: Australia's Murray-Darling Basin

Eric Garner, partner at Best Best & Krieger LLP in Riverside, California, moderated the panel and introduced the speakers.

Jennifer McKay, Professor of Business Law for the School of Commerce at University of South Australia, discussed transitions toward sustainability in water management in Australia. She provided an overview by explaining the basin and locations of the Great Artesian Basin and the Murray-Darling Basin. Offering some background about Australia, she noted that the country has transitioned into a more environmentally friendly nation. However, the Australian federal government has no power in its constitution over water, thus it is difficult to pass current laws for sustainability.

McKay next explored the five phases of the evolution of Australian water law. The first phase from 1788 to 1901 was marked by colonial power over water, and it did not focus on sustainability or aboriginal rights. This left a legacy of damaged environments in many areas. The second phase began in 1901 with the Australian Federation. States created administrative allocation systems for surface and groundwater, which repealed the previous riparian doctrine. However, Australians expected to discover an inland sea, which resulted in misguided laws. The third phase began in the early 1980s with enhanced federal power. An increase in community involvement also appeared. The fourth phase, lasting from 1994 to 2007, focused on federal reforms that introduced the Ecologically Sustainable Development requirements and competition into water suppliers. This era also separated land from water to create water markets. The government also enhanced regional delivery methods and provided stricter guidelines to the state for reinforcing the reforms. The fifth phase, commencing in 2007, included expanded federal constitutional powers through judicial interpretations. The "Water Act 2007" required adoption of state "water plans" in the Murray-Darling Basin. Further, the federal government gave funding directly to regional bodies who agreed to regional delivery of federal initiatives. McKay concluded by recognizing hurdles to a sustainable water future including legal, institutional, and capacity challenges.

The second speaker, Scott Slater from Brownstein Hyatt Farber Schreck in Santa Barbara, California, works with private equity investors in Australia. Australia has looked to California for idea in water management. Australia decided to manage water on sustainability ideas, create water markets, and institute water rights training as part of sustainability. In fact, Australia has successfully embraced sustainability management and tried to keep the issue out of the courts. The country has also created a position for the federal government in water management, and is working to integrate common and modern law.

Slater noted that the United States can take lessons from Australia. He recommends a national water policy, rather than the federal government just deferring to the states. He also suggests the adoption **[\*492]** of uniform standards to help manage water, as well as the creation of a standard to guide states in sustainability and tradable property rights in water.

The session ended with a question and answer component. The speakers answered a question by stating that severing water from the land is a means to aid in transferability. Another question revealed that the plan in the Murray-Darling Basin focuses on environmental values and requires state to preserve the environment. The next question asked if forces in California are crystallizing into similarities with Australian reform; the answer was yes and to look to the California Bay Delta.

Danielle Sexton

Ryan McLane

On February 27, 2010, ***Colorado*** State University Water Resources Archive held its annual Water Tables fundraiser. As background, the Water Resources Archive is a joint partnership between the ***Colorado*** State University Libraries, and the ***Colorado*** Water Institute. One of only two water archives in the United States, the Water Resources Archives collects primary documents and materials relating to water development and water history in ***Colorado*** and in the western United States. Their collection covers many aspects of water use in ***Colorado*** including legislative documents, maps, and even engineering documents.

The Water Resources Archive holds its annual Water Tables events to fundraise for the continued protection and expansion of the archives collection. The Water Tables 2010 event, titled Across State Lines: Sharing the Resource, brought approximately 170 guests to the event and raised about $ 45,000 for the Archive. The event ended with nineteen tables of water practitioners enjoying a dinner and discussing current water issues. In accord with this year's theme, the general topics of discussion at all the tables related to interstate water use.

At each of the 19 Tables, a table Host led a discussion relating to interstate water use. Some examples of the topics discussed at the event:

. Don Ament, Former ***Colorado*** Commissioner of Agriculture, hosted Is Ag Dry-Up Inevitable? **[\*493]**

. Alan Berryman, Assistant General Manager, Engineering Division, Northern ***Colorado*** Water Conservancy District, hosted Interstate Comity Is for the Birds.

. Tom Iseman, Program Director for Water Policy and Implementation, Western Governors Association, hosted How Far Has Multi-State Water Management Gotten Us? Where Will It Lead Us?

. Harry LaBonde, Jr., Wyoming Deputy State Engineer, hosted The Green ***River*** Pipeline Regional Watershed Supply Project - Perspectives from Wyoming.

. David Robbins, President and ***Co***-founder, Hill & Robbins, P.C., hosted Why We Have to Share - Limits on Our Right to Consume.

Also the Archives solicited sponsorship of about 30 graduate students who were able to join the Water Tables 2010. These students were able to discuss the important water issues facing the state of ***Colorado*** and the West, and learn from the hosts and practitioners at the event. Thus even in when fundraising, the Archives was educating the next generation of water users about the past. Following is a synopsis of the discussion held at Mr. LaBonde's table.

Harry LaBonde, Jr., Wyoming Deputy State Engineer

Topic: The Green ***River*** Pipeline Regional Watershed Supply Project - Perspectives from Wyoming

Mr. LaBonde, Jr., led the discussion regarding the Green ***River*** Pipeline Project, which the Million Conservation Resource Group ("MCRG") is currently planning. MCRG is planning to pipe water from the Flaming Gorge Reservoir, across the southern boundary of Wyoming and then south along the front range of ***Colorado*** down to Pueblo. So far the MCRG has filed one of two applications regarding this project in Wyoming. One application, having a priority date of December 28, 2007, was for 400 cubic feet per second of direct flow right. MCRG's application lists the water will be used for municipal, industrial, irrigation, and domestic uses throughout the State of ***Colorado***. The other application, filed by Pioneer Canal Lake Hattie Irrigation District ("PCLHID") was for 40 cubic feet per second of supplemental supply. The uses that the District listed for the application include irrigation, power, industrial, municipal, domestic, and fish propagation.

LaBonde discussed several concerns for Wyoming regarding this project. One major concern for Wyoming is the impacts to in-state fisheries and to downstream endangered species. Another concern is whether the pipeline could transport invasive species across watersheds. **[\*494]** Other important questions that must be answered include whether ***Colorado*** has a right to use this water, and whether there is a real need for this water in ***Colorado***. Because the water will be piped from the Flaming Gorge Reservoir in southwestern Wyoming, the effect on recreation in the Flaming Gorge is also an important issue.

LaBonde noted that Wyoming must consider whether this project will impact Wyoming's ability to develop its remaining allocation of ***Colorado*** ***River*** water. Also, it must weigh what benefits Wyoming will receive from the project. While MCRG's pipeline remains a project in the distant future, Mr. LaBonde noted that there is a possibility that it could go forward, and it is not entirely a pipe dream.

Kathlyn Bullis

***COLORADO*** CLEANTECH INDUSTRY ASSOCIATION ADVANCED WATER MANAGEMENT: USING CLEANTECH TO MANAGE SCARE RESOURCES

Denver, ***Colorado*** February 25, 2010

Introduction

In recent years, water technology has quickly risen to become a major focus of innovation and commercialization. On a global scale, there is an approaching water crisis as world populations rise while the amount of safe drinking water decreases. The United Nations estimates that by 2025, two-thirds of the world will experience some form of water scarcity. This conference discussed the kinds of water management innovations and technologies that have evolved to combat this impending problem. Shelley Curtiss, Communications Director at ***Colorado*** Cleantech Industry Association (CCIA) in Denver, ***Colorado*** opened the conference and welcomed the audience and participants.

Keynote Presentation: Smarter Water Management

Cameron J. Brooks, Ph.D., Director of Solutions and Business Development at IBM Big Green Innovations, was the keynote speaker. Mr. Brooks explained that many factors in recent years, such as increased agriculture, climate change, and an aging infrastructure, have required us to develop a better overall system of watershed management. Currently, Mr. Brooks explained, up to 45% of water is lost worldwide because of faulty or inefficient delivery systems. **[\*495]** However, according to Mr. Brooks, we can alleviate or even solve this problem through the implementation of "smart grid technology," a better overall system that predicts problems and finds solutions in advance, rather than reacting to problems after they occur. In past years, IBM developed smart grid technology for electricity management. Smart grid technology increases the connectivity, coordination, and automation between electricity suppliers, consumers, and overall networks that are involved in long distance electricity transmission. Now, IBM is developing this concept in the realm of water management.

IBM accomplishes this newer system of water management by collecting massive amount of data through a combination of information gathering technology and analytic devices and tools. Collecting more water data overall has allowed IBM to optimize future events and in general get a better idea of how much water areas have on a natural scale (overall water mass), a utility scale (overall water quality), and an enterprise scale (overall water usage and management). The result from this data is a variety of water technologies that manage water in a predictive, rather than a reactive, outlook.

IBM has already implemented many of these technologies in various parts of the world, all with positive results. These technologies include developments in sensor and intelligence networks for water utilities, smart water meters, and a new technology for water filtration. In Galway Bay, Ireland, Brooks and IBM have been collecting data related to water quality, aquaculture, chemical content, wave energy, and tidal movement, and have been using that data to help the local fishermen manage shellfish crops and to help the local governments regulate the water supply. In the Netherlands, IBM has implemented new water monitoring systems, helping the Dutch to monitor flooding and, thus, exert better control of their levees. In Israel, the company has employed water methodology to address water changes systematically and to better adapt to drought. Mr. Brooks also discussed new kinds of IBM-developed nanotechnology that can extract significant amounts of salt from water, rendering it potable for human consumption. With innovations like these, IBM will no doubt play a large role in the globe's complicated water condition.

Opportunities in the Water Market: Panel Discussion

Opportunities in the water market are growing rapidly. The water market is already enormous and expanding, and is involved in a crisis that requires innovation and efficiency. Because of this problem and its close connection with energy usage, the water market will demand a variety of new technological approaches. CCIA invited four expert panelists to discuss how they are providing creative and sustainable solutions to water supply, treatment, and management challenges. The panelists included Robin Newmark, Principal Program Manager of Planning and Program Development at National Renewable Energy **[\*496]** Laboratory (NREL); Roger Austin, National Vice President and Managing Consulting Director of MWH Global; Forbes Guthrie, Director of Stewart Environmental Consultants, Inc. (SEC); and Jeffrey Popiel, President and CEO of Geotech Environmental Equipment.

Robin Newmark started the panel and discussed NREL's growth of generation and cooling technologies that combine water and energy management. By developing a variety of biofuel, geothermal, solar, and wind energy technologies, NREL hopes to expand the types of energy innovations used to actually manage water supplies.

Roger Austin spoke next, describing how MWH Global provides comprehensive consulting management, engineering and technical services, and construction management services to ***Colorado*** and other places around the country. These innovations will only become more important as water resources diminish because "out west, whiskey is for a'drinking, and water is for a'fighting." While a humorous quote, it also holds a fair amount of truth: water is quickly becoming a valuable commodity in ***Colorado*** and the western United States, and the next hundred years of water management will most likely be different from the last hundred years of water management.

Forbes Guthrie represented SEC and described various innovations in the future of water storage and treatment. This included the promising BIO solution project, in which SEC was using certain species of waste-extracting algae to treat and purify water rather than employing the standard, energy-wasting devices commonly utilized.

Finally, Jeffrey Popiel discussed Geotech's role in the water technology marketplace, specifically in the development of new technology in the areas of groundwater sampling and analysis. Showing how these innovations aid in data collection and analysis to help manage water consumption, Geotech provides environmental equipment to those who are interested in managing water efficiently.

It is difficult to summarize the many ideas and viewpoints at this conference concisely, but the role of "smart" water management came up frequently. The theme of the discussions suggested that the world around us is changing at a rapid rate, and we must use our new technologies to adapt to these changes and wisely manage the water that we have.

Ethan Ice

**[\*497]**

WATER LAW REVIEW 2010 SYMPOSIUM: WATER LAW AND CLIMATE CHANGE, PLANNING IN AN UNCERTAIN FUTURE

Denver, ***Colorado*** April 9, 2010

Projected Climate Change Impacts on our Water Resources

Brad Udall is the director of Western Water Assessment at the University of ***Colorado*** - National Oceanic and Atmospheric Administration. Mr. Udall's work focuses on global climate change's impact on water supplies, particularly in the western part of the United States. He holds a Bachelor of Science from Stanford University and Masters of Business Administration from ***Colorado*** State University.

Mr. Udall's presentation focused on four main issues related to the connection between global climate change and the water supply system. First, Mr. Udall stated the science of climate change is unequivocal, and we have already experienced the effects of global warming. Second, climate change will seriously impact global and national water supplies. Third, hydrologic effects will stress water supply mechanisms and lead to conflicts. Fourth, climate change will seriously impact the ***Colorado*** ***River*** Basin and create unique challenges for water users. Altogether, global climate change has seriously affected water resources and will only continue to stress limited water supplies.

Currently, the debate regarding climate change still focuses on whether climate change will actually occur and what the effects will be. Although the debate rages on, it is clear that ninety percent of climate models agree that we will experience substantial warming before the end of the century. Scientists have studied global warming since the late nineteenth century and have detected warming trends over the last three decades. While there is some dispute regarding the range of effects, the evidence demonstrates that man-made greenhouse gasses have contributed to a one degree rise in the twentieth century, and we have already "locked in" a two to three degree rise by 2030. At current emissions levels, man-made carbon emissions will directly or indirectly heat the earth six to eleven degrees by the end of the century. While doubling the amount of carbon dioxide in the atmosphere accounts for two degrees of this change, the cumulative impacts, especially increased moisture in the atmosphere, exacerbates the problem. Uncertainty in the science does not excuse policy makers from making tough decisions regarding climate change that require delicate interest balancing.

**[\*498]** As climate change continues to occur, water temperatures will rise, precipitation patterns will change, ocean heat content will increase, atmospheric moisture content will increase, and arctic sea ice levels will decrease. Higher overall air temperature increases water temperature, which affects aquatic wildlife habitat and increases evaporation. Increased water temperatures decrease dissolved oxygen content and increase pathogen concentration, thereby making water unable to support wildlife and unsuitable for human contact. Climate change will also extend the growing season. As air and water temperatures rise, storm patterns will shift north in the northern hemisphere and change the locus of precipitation. Storms will also tend to be downpours, substantially increasing erosion and accelerate runoff. Further, glaciers and arctic sea ice will melt and increase sea levels.

These changes will affect the water sector substantially. Overall, climate change will influence the water cycle by shifting the locus, timing, and duration of precipitation, beginning in lower elevations. In general, precipitation events will become more concentrated and severe. There will be less summer rainfall and runoff will begin sooner and occur more quickly. In arid areas, droughts will occur more frequently and persist longer. In moist areas, precipitation will increase and become more violent. Consequently, dry areas will experience more conflict over water supplies and wet areas will struggle to assimilate increased precipitation. These conflicts will be particularly apparent where large populations in arid places already stress water supply and control systems.

Climate change will substantially, if not ironically, impact energy production. Thermoelectric energy is the largest non-consumptive use of water in the West, where climate change will impair water supplies. Thermoelectric energy production is also a leading source of greenhouse gas emissions. Not only will climate change decrease water supplies for energy creation, but also higher water temperatures will reduce power generation in fossil-fuel fired and nuclear power plants.

The ***Colorado*** ***River*** Basin will experience the effects common to arid climates, including increased incidence of drought. The basin is already over-appropriated, and significant decreases in water quantity will intensify conflicts. Indeed, the basin has already experienced the primary adverse effects: drought, large fluctuations in storage, and decreased flow. Climatologists agree that if the current pattern persists, the basin will experience a five to forty-five percent decrease in water quantity, with lower elevations bearing the brunt of these impacts. Ultimately, the ***Colorado*** ***River*** Basin may see severe impacts such as persistent drought and reservoir drying.

In conclusion, the uncertainty regarding the potential impacts from climate change does not dismiss policy makers' obligations to address the certainty of climate change. Globally, the polarizing effects of climate change will be a calamity. Dry areas will become drier, wet areas will become wetter. Precipitation will move further north and become **[\*499]** more difficult to manage. Water short areas, such as the ***Colorado*** ***River*** Basin, will face conflict and uncertainty over water supplies. If Congress and the global community fail to address the issues, water systems will no longer function sufficiently to meet the demands of a growing population.

Daniel Vedra

The Dormant Commerce Clause and Water Export: Open for Business or Suckers Beware?

Professor Christine A. Klein of the University of Florida Levine College of Law began by discussing the water regulation challenges currently facing states. States have a greater interest in importing water rather than in exporting water, particularly with the increasing stresses on water resources. Professor Klein noted that many people are sensitive to water exportation. As an example, she referenced a billboard depicting people from around the country with straws into the Great Lakes water supply. Professor Klein then addressed whether states should have the ability to restrict water export.

As background, Professor Klein discussed [*Sporhase v. Nebraska, 458 U.S. 941 (1982).*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3S4X-5D60-003B-S4C4-00000-00&context=1516831) In Sporhase, a landowner, who owned property in both ***Colorado*** and Nebraska, wanted to irrigate the ***Colorado*** property with Nebraska water. The state of Nebraska brought action under a Nebraska statute to enjoin the landowner from using the water in this manner. The United States Supreme Court struck down the Nebraska statute, finding it violated the Commerce Clause. Thus, the Court held that a ban on exporting water across state lines is unconstitutional.

Professor Klein thought the question the Court asked in Sporhase of whether water is an article of commerce was the wrong question. Instead, she said that the Court should have asked whether the export of water has an effect on interstate commerce. As a result of asking the incorrect question, Sporhase overrode state water law. Following Sporhase, courts struck down various state and federal regulations preserving the states' regulations of water law. However, the Court started recognizing congressional limits on the Commerce Clause in [*United States v. Lopez, 514 U.S. 549 (1995),*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3S42-78N0-003B-R3NW-00000-00&context=1516831) thus slowly giving states more regulatory authority.

In terms of reform, Professor Klein suggested that states, the federal government, and individuals consider water along a continuum instead of a "one size fits all" article of commerce. She argued that courts need to evaluate whether the actions or regulations in a specific context or case interfere with interstate commerce. To show the complexity of water law issues, Professor Klein provided a categorical listing of different water classifications and possible applicable doctrines. As such, Professor Klein advocated for a more nuanced analysis of water export cases.

Professor Klein perceived that the courts are diminishing the **[\*500]** regulatory void of both the Dormant Commerce Clause and the affirmative Commerce Clause. In support, Professor Klein cited both [*Gonzales v. Raich, 545 U.S. 1 (2005),*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:4GBD-3J90-004C-100M-00000-00&context=1516831) in which the Court upheld a federal regulation on marijuana, and [*GDF v. Norton, 362 F.3d 286 (2005),*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:4BV4-G390-0038-X0J7-00000-00&context=1516831) in which the Court upheld federal regulations protecting cave insects. In addition, Professor Klein detected signs of increasing tolerance for state water export regulations. In support of this notion, Professor Klein cited [*United Haulers v. Oneider-Herkimer Solid Waste, 550 U.S. 330 (2007).*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:4NM5-WSV0-004C-200P-00000-00&context=1516831) United Haulers dealt with the state of New York requiring all waste to go through one facility. The Court upheld the state regulation despite the holding being in direct contrast to Sporhase. The majority of the justices supported the decision and distinguished United Haulers from Sporhase on the facts. Justice Thomas, in his concurrence, discussed the Lockner freedom of contract era, how the Court then adjusted precedent, and finally dismissed the idea. Justice Thomas suggested that the Court might follow the reasoning of United Haulers and eventually reject the Dormant Commerce Clause.

Professor Klein concluded that expansion of regulations shows an increased tolerance for the state regulation of water resources. As climate change becomes a greater concern, however, the Court may again strike down state regulations on water export.

Serena Hendon

The Secure Water Act: First Year Programs and Implementation

Melinda Kassen, Esq., Managing Director of the Western Water Project at Trout Unlimited, discussed the SECURE Water Act ("SECURE"), its new formulation as the WaterSMART Program, and the effects the legislation will have on the practices of the Bureau of Reclamation (Reclamation) in relation to climate change and potential long-term drought.

Senator Jeff Bingaman of New Mexico introduced SECURE, and Congress approved the legislation as part of the Omnibus Public Land Management Act in March of 2009. The Department of the Interior announced a departmental reorganization in February 2010 and placed many of the important elements of the SECURE legislation under the new WaterSMART program. Kassen noted, however, that the reorganization has not affected the important legislative goals established in SECURE. Most importantly, the department is now required to give credence to the importance of looking at the environmental impact in areas where Reclamation is active, in addition to the traditional concerns of the department such as the rights of water users and addressing potential water shortages.

According to Kassen, SECURE, now WaterSMART, provides Reclamation with additional authority and requires the agency to face the potential impacts of climate change on eight different ***river*** basins. **[\*501]** Reclamation facilities are present in the eight basins: the ***Colorado***, the Columbia, the Klamath, the Missouri, the Rio Grande, the Sacramento, the San Joaquin, and the Truckee ***Rivers***.

The legislation provides a multi-step process for Reclamation to use in addressing potential climate change impacts in the identified basins. These steps include analyzing climate change impacts in the basins, developing strategies to mitigate the identified impacts, conducting feasibility studies on the proposed strategies, and finally, making grants to implement strategies that will help to prevent water crises related to climate change. These grants are limited in their application, and the basins will utilize them to conserve water for municipal, industrial, recreational, and ecological resilience purposes.

Reclamation is currently conducting a study of the ***Colorado***, Yakima, and St. Marys-Milk ***Rivers*** because of new legislation and goals Reclamation put into place prior to Congress passing the legislation. Reclamation made the decisions based on a competitive process, and $ 3 million have been designated for the basin studies to date. In March 2010, Reclamation announced that it was accepting proposals for another round of studies to continue the work outlined in WaterSMART.

Kassen first discussed the Yakima basin study and explained that the work group participating in the study consists of government entities, water users, and a conservation NGO working to reach an agreement on the allocation of the available resources in the basin. The challenge, she conceded, will be to reconcile the needs of the senior water rights holders who are farming traditional crops, with the needs of junior rights holders who have established high-value orchard crops. In addition, the group must take into consideration the needs of the NGO, as outlined in the WaterSMART program.

Next, Kassen discussed the study underway in the ***Colorado*** ***River*** basin. Kassen approved of the study, but noted her concern that Reclamation has not invited the conservation NGOs and water user groups to the discussion. Instead, Reclamation is dealing strictly with the seven basin states , and the plan for the study indicates that it will include a public comment period. The study's discussion surrounding the ***Colorado*** basin includes dealing with decreasing flows in the ***river*** due to climate change and the inevitable increase of population throughout the southwest United States. Kassen analogized that all of the parties interested in water rights within the basin see those rights as currency, however, each party views its currency as something completely different from the other parties at the table; therefore, there is little room for exchange between parties because there is no common currency. However, Kassen noted that the state's willingness to sit down with Reclamation is an important first step in what is sure to be a long process.

Kassen concluded saying that Reclamation's demonstrated willingness to "grapple" with the effects of climate change is **[\*502]** encouraging. With further implementation of the SECURE Act, encompassed in the WaterSMART program, positive steps in this area are likely.

Matt Brodahl

Water Law and Ethics

Amy Beatie, Director of the ***Colorado*** Water Trust, presented on current ethical issues concerning water law practitioners' appellate practice. Specifically, Beatie discussed ethical issues arising when practitioners decide whether to appeal, issues when prosecuting an appeal, and issues regarding conflicts of interest.

[*First*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:8T9R-T2X2-D6RV-H374-00000-00&context=1516831), Beatie addressed the ethical issues in a practitioner's decision to appeal. Initially, she explained that because attorneys draft their fee agreements, clients enjoy judicial deference for unclear or ambiguous fee language. Accordingly, attorneys should ensure fee agreements include clear language authorizing them to appeal on behalf of the client and describe any fee adjustments for appeals. ***Colorado*** Rules of Professional Conduct ("CRPC") 1.2(a) and 1.4(a)(2) instruct attorneys to consult with the client about potential legal strategies, including the decision to appeal.

Next, Beatie discussed the requirement that sufficient grounds for an appeal must exist. An attorney's signature certifies that a pleading has legal and factual merit. [***Colorado*** *Rule of Professional Conduct 3.1*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:69N8-M2G3-RV9R-P167-00000-00&context=1516831) precludes filing an appeal that has no merit or asserting a frivolous claim. Filing an appeal merely because an insistent client desires one does not excuse [*CRPC 3.1*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:69N8-M2G3-RV9R-P167-00000-00&context=1516831) if no legal or factual basis supports the appeal. All ***Colorado*** lawyers or lawyers practicing in ***Colorado*** are subject to the jurisdiction of the CRPC. Consequences of filing a frivolous appeal include court sanctions or even civil prosecution for unauthorized practice of law.

Additionally, when a practitioner decides to appeal, he or she must be competent. [***Colorado*** *Rule of Professional Conduct 1.1*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:63CY-K261-DYDC-J13N-00000-00&context=1516831) requires ***Colorado*** attorneys to demonstrate competent skill, thoroughness, and preparation. If an attorney has no appellate experience but still chooses to appeal, the rule requires the attorney to commit to competent on-the-job training, turn the case over to a competent appellate attorney, or associate with a more experienced attorney. To ensure competent representation, Beatie advised attorneys maintain keen interest in an appeal even after adding an experienced associate to the appellate team.

If an attorney decides not to appeal, *CRPC 1.16* requires notice to clients to allow time to seek new representation for an appeal. Beatie stressed that an untimely notice of appeal is an egregious mistake. Attorneys should file notice of appeal on behalf of their client then withdraw from representation. This way, the attorney communicates the withdrawal to the court while preserving the client's right to appeal **[\*503]** with another attorney. Finally, attorneys who are planning to withdraw should not express any legal opinions about a potential appeal.

[*Second*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:8T9R-T352-D6RV-H379-00000-00&context=1516831), Beatie addressed the ethical issues in a practitioner's prosecution of an appeal. She implored attorneys to designate the entire case record on appeal. An attorney who selectively picks favorable sections of the record can potentially invoke candor violations. Candor violations include an attorney concealing or omitting material facts or legal authority, and using out-of-context quotations of case authority. Beatie warned that quotations riddled with ellipses are a red flag for out-of-context candor violations. Water attorneys must disclose all applicable administrative and municipal legal authority to the tribunal, even directly adverse authorities. The standard of review for failure to disclose relevant law is a "knowing" one. For example, an attorney who includes a directly adverse law in a previous case brief "knows" of the adverse law and cannot omit disclosing that law to the tribunal in future case briefs if the adverse law applies. Attorneys who fail to disclose adverse authority at the first opportunity violate the candor rule. Beatie beseeched attorneys to comply with candor rules to help build a reputation of honesty and trust with judges and their clerks.

Further, Beatie advised caution when criticizing water courts' or lower courts' decisions in appellant briefs. In addition to prohibiting lawyers from including statements known to be false, [*CRPC 8.2*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:63CY-K261-DYDC-J163-00000-00&context=1516831) also prevents reckless disregard as to truth or falsity concerning the integrity of a judge, adjudicatory officer or public legal officer. Lawyers should carefully craft appellant briefs critical of lower court decisions to avoid offending water referees and water judges. Such an approach follows the respect to legal officers [*CRPC 8.2*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:63CY-K261-DYDC-J163-00000-00&context=1516831) requires. Beatie noted that following this rule may also pay dividends on remand should the case return to the same lower court.

Finally, Beatie concluded by examining the potential conflicts of interest in appellate proceedings. Positional conflicts occur when common clients vie against concurrent conflicts of interest and can be a common problem in water law. Beatie noted the example of a ***Colorado*** Water Conservation Board appeal that ended with common clients fighting over rights in a resulting substitute water plan. In that case, although the clients were collectively successful, ethical conflicts arose when representation of one client became directly adverse to all other clients claiming common portions of the same substitute water distribution plan. Comments to [*CRPC 1.7*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:63CY-K261-DYDC-J13W-00000-00&context=1516831) guide the issue of positional conflict, providing four factors attorneys should follow when weighing client loyalties against potential conflicts of interest: (1) clearly identify the client or clients; (2) determine whether a conflict of interest exists; (3) decide whether the representation may be undertaken despite the existence of a conflict, and (4) if so, consult with the clients. Attorney-client loyalties can complicate these conflicts, pushing clients to retain their attorney even when conflicts exist. The factors of [*CRPC 1.7*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:63CY-K261-DYDC-J13W-00000-00&context=1516831) **[\*504]** acknowledge the complexity of attorney-client relationships by including the client's reasonable expectations as a consideration, but positional conflicts may require an attorney to seek informed consent of the conflicting clients, or even to withdraw if unable to balance competing conflicts among common clients.

John McKee

Quality of Life Decision Making; Planning Uncertainties and Legal Obstacles Perspective from Denver Water

Casey Funk, in-house counsel for the Denver Board of Water Commissioners (the "Board"), and Marc Waage, Manager of Water Resource Planning at the Denver Water Department ("Denver Water"), discussed the Anti-Speculation Doctrine as a legal obstacle to planning for future water uncertainties, including those uncertainties associated with climate change.

The Board, composed of five members, is the primary decision maker at Denver Water. The mayor appoints the members of the non-political Board. It makes all policy decisions, including to whom to serve water and how to serve that water. In 2006, the Board adopted a new policy to plan for uncertainties, in part because of the worst drought in recorded history in 2002.

Denver Water emphasizes efficiency, including conservation and water reuse. Denver Water utilizes many conservation methods: (1) education and outreach; (2) diagnostics, including audits and monitoring habits; (3) rebates and incentives; (4) rules; (5) research, monitoring, and evaluation; and (6) tiered rates, for example if one uses more water, that user pays more per unit. One important policy issue the Board must decide is what uncertainties to plan for and how to plan for those uncertainties. Some examples include variations from pine beetle kill, potential wild fires, and climate change.

Mr. Waage noted the planning method of the Traditional Future method; future water use is extrapolated from past trends, without anticipating any major changes. Denver Water, however, plots a cone of uncertainty to plan for a range of solutions in different situations. This cone allows Denver Water to prepare for a wide range of uncertainty, and best suites planning for climate change. Scientists predict that climate change will cause more frequent and severe droughts. However, since Denver Water does not know what is going to happen, it prefers a range of solutions, instead of waiting for scientists to figure out the exact future.

As discussed above, Denver Water takes significant steps to increase efficiency, but efficiencies alone will not solve all the possible problems associated with climate change. Casey Funk proposes that laws should permit Denver Water to save water to provide options for the future. However, saving water violates the Anti-Speculation Doctrine because a water user needs a vested interest and a specific plan. The can and will **[\*505]** statute does not currently permit water saving without the capability of putting that water to beneficial use in a reasonable amount of time. The courts have interpreted these doctrines to ensure that applicants will be able to actually use the water.

Casey Funk argued that these principles are misplaced and should not apply to government agencies trying to plan for the future of its constituency. Mr. Funk detailed the history of these principles. A few private citizens tried to obtain all the remaining water rights in ***Colorado***. However, they did not have a specific plan of how to use that water, but instead wanted the rights for future investments. The courts would not allow this attempted water purchase because individuals should not obtain water rights while only speculating as to that water's use.

Nevertheless, Mr. Funk argued that a government agency planning for climate change is significantly different from those private citizens. Scientists know that climate change is going to happen and that there will be changes to the water supply, even though these scientists cannot predict the specific changes. Mr. Funk argues that the law should allow Denver Water to account for water reserves to plan for when those changes eventually occur. Courts should give government agencies some deference for strategic planning.

The current law treats government agencies like every other water applicant. Mr. Funk thinks this approach is incorrect. Because governments are inherently different, they should have some ability or leeway to plan for uncertainties. A study of the legislative history of the Anti-Speculation Doctrine shows that the courts were concerned with a monetary speculation scheme, and not government agencies planning for the future needs of their constituencies. Courts should give some deference to the government that must supply water to its citizens.

Shannon L. Carson

Water Law and Climate Change, Strategis fo Adaptation and Mitigation

Professor A. Dan Tarlock of Chicago-Kent School of Law, Illinois Institute of Technology gave the keynote address at the 2010 University of Denver Water Law Review Symposium. Professor Tarlock discussed the different ways water managers could adapt to the challenges brought on by global climate change.

[*First*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:8T9R-T2X2-D6RV-H374-00000-00&context=1516831), Professor Tarlock discussed that worldwide mitigation to slow the effects of global climate change could take from 100 to 1000 years for the benefits to show. Therefore, Professor Tarlock said adaptation is the key to slow the effects of greenhouse gases.

Earlier in the Symposium, Brad Udall, Director of CU-NOAA, Western Water Assessment, presented the projected climate change impacts on our water supplies. Professor Tarlock agreed with Mr. Udall's conclusions that the change in climate will create both extreme **[\*506]** wet and dry weather events. Overall, the planet will change to a wetter and warmer climate; however, the western United States will change to a drier climate while the eastern states will see more flooding in a wetter climate.

In addition, Professor Tarlock explained that the changes in global climate change would create more competition for water between the various factions of society. This includes rivalries between the water needed for urban areas, versus the water needed for agriculture, fish, and energy production. Moreover, the internal rivalries within various factions will increase, creating competition between different agricultural users or between different urban areas.

Professor Tarlock presented seven options for adaptation to the changing climate. The first option is letting the prior appropriation doctrine work its natural course with a few minor changes. Prior appropriation, a system with built-in risk assignment, calls for junior right holders to bear the burden. Therefore, these junior right holders have fair notice of strict enforcement of priority during times of drought. However, Professor Tarlock noted two problems with prior appropriation. First, water managers expect that courts will rarely apply the prior appropriation doctrine on a big scale. Second, if courts apply prior appropriation on a big scale, junior right holders will "push back." As an example of these problems, Professor Tarlock spotlighted American Falls Reservoir Dist. v. Idaho Dept. of Water Resources. In American Falls, the Idaho Supreme Court found the application of the prior appropriation doctrine "difficult" and "harsh" during times of drought. The Court avoided the strict enforcement of prior appropriation, instead allowing the state administrative agency to make scientifically informed determinations on delivery of water based on the extant of adverse effect to senior water users.

The prior appropriation changes that Professor Tarlock suggested above include more emphasis on the beneficial use and anti-speculation doctrine. For example, in Pagosa Springs I and II, the ***Colorado*** Supreme Court held cities can no longer give "faith-based" estimates on the water needed for a particular area, and that global climate change is no longer a justification for bad water planning.

The second option to adapt to the changing climate is letting the markets work. Allowing the market to reallocate water in the most efficient manner will create a greater margin of safety during times of water shortage. Under the two systems, riparian rights and prior appropriation, there are different outcomes. While riparian rights are transferable, the purchaser risks purchasing a questionable right, because the conveyance only binds the grantor and makes no contractual obligations upon the other water users on the source. Under prior appropriation, water rights are transferable, but transaction costs are high. Courts increasingly consider the interests of other right and non-right holders, and sometimes require a review of any environmental concerns before a transfer. Both considerations **[\*507]** increase transaction costs of any water transfer.

The third option is technology-forcing conservation that adapts our water use to climate change. States can use the beneficial use doctrine to implement technology-forcing. California became the first state to mandate efficient water management practices. California requires agricultural water suppliers to adopt certain pricing structures to encourage more efficient farm use and facilitate recycled water use. The legislation also impacted cities by mandating a 20% per capita water use reduction by 2020.

The fourth option is to link land use and water supply planning. Planners often rejected climate as a reason to limit new communities. Traditionally, governments separated land planning and water planning agencies. Society assumed that water suppliers had a duty to meet water supplies for new communities. Professor Tarlock explained how this created golf courses in the middle of desert areas, such as Tucson, Arizona. "Show me" laws like those enacted in California, Arizona, and ***Colorado*** require cities and developers have realistic drought proof plans for water supply.

The less likely fifth and sixth options are the introduction of riparian sharing into the prior appropriation doctrine, and increased federal preemption of state water laws.

Finally, the seventh option is to reimplement the use the dam to capture more run-off water. Professor Tarlock first pointed out that dams today differ from dams of the past. Today the use of smaller dams serves as a key component in restoration of aquatic habitats by capturing run-off. The problem with this option is the "Big Dam" era is over, or at the very least in sleep mode, and a trend to remove these dams and restore the land increases.

Professor Tarlock ended by stating that water managers must go through a series of phases before they get to the point where they can adapt to global climate change. The first phase is "Denial." Despite the fact Europe has seemed to accept global climate change, the United States has been slower to accept global climate change. California Governor Schwarzenegger recently recognized climate change as a problem for California. Next is the "Recognition" phase. In this stage, water managers recognize the problem and start researching the problem. Next is the "Get Serious" phase. This is the stage where most water managers are currently. Last is the "What do we do?" phase in which water managers start to take real action to adapt to global climate change. Professor Tarlock ended by suggesting that water managers need to evaluate the changes that they need make and the choices they have to make those changes.

Nicole Tachibana

**[\*508]**

Oil Shale Water in ***Colorado***: The Energy and Water Connection

Western Resource Advocates ("WRA") is a non-profit law and policy organization, which aims to protect the land, air, and water of the West. Bart Miller, WRA's Water Program Director, helped shed light on the oil shale industry's reliance on water to develop its resource, water's use in the generation of energy and the impacts of oil shale and water on the future. Last year, WRA released a report, Water on the Rocks: Oil Shale Water Rights in ***Colorado*** that focused on questions about the relationship between oil shale and water. This investigative report specifically focused on water requirements and water rights, in conjunction with the future implications on the extraction of oil shale.

[*First*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:8T9R-T2X2-D6RV-H374-00000-00&context=1516831), Mr. Miller discussed water requirements and water demands associated with commercial oil shale development. He briefly discussed the method of extracting oil from shale rock. With current technology, developers create a "frozen water wall" around the rock and then essentially cook the rock at extremely high temperatures, which causes the oil to separate from the rock itself. Within ***Colorado*** lies the Piceance Basin, the most prevalent oil shale formation in the United States. Experts opine that through oil shale development, developers may obtain over one-half of a trillion barrels of oil from this region. Although prospectors discovered oil shale over 100 years ago in the Piceance Basin, companies still cannot economically drill and extract the oil in this area. Despite these difficulties, there is an increasing demand for large-scale development because of people's dependence on oil. In addition to the technical difficulties in extracting the oil, developers would require large quantities of water for extraction. In order to facilitate the large-scale developments, the Bureau of Land Management estimates that developers would need one to three barrels of water to produce a single barrel of oil from the oil shale. Furthermore, a large development producing 1.55 million barrels of oil per day would require approximately 378,310 acre feet of water annually. In comparison, the Denver metro area, consisting of roughly 1.4 million people requires 275,000 acre feet of water annually. Additionally, there are many uncertainties about oil shale development. Since it is in its relative infancy, it is difficult for experts to determine the actual amounts of water needed to develop the oil. Also, experts question how much shale could reasonably produce oil given current technologies, and how much people will begin to rely on other technologies that produce energy, such as coal, wind, and natural gas. Currently, the demand for water is high and production of oil shale is difficult. But the development of oil shale remains on the horizon as one of the future's premier energy resources.

Next, Mr. Miller spoke about water rights and future impacts on the environment and society. Water rights for oil shale are mostly in the White and ***Colorado*** ***River*** basins. Energy companies continue to **[\*509]** obtain water rights for production of oil shale. Currently, energy companies own absolute water rights to almost 70,000-acre feet of water annually within the White and ***Colorado*** ***River*** basins. In addition, energy companies have conditional water rights in these two basins with 1960 era priority dates. If energy companies exercise the conditional water rights that they own, this could create serious impacts throughout the state. For example, many of the large water rights owned by Denver Water have junior priority dates to many of the oil companies' conditional water rights. Moreover, under the ***Colorado*** ***River*** Compact of 1922, which the various states created during a historically wet period in history, ***Colorado*** may be approaching serious risk of exceeding its allocation and having its use of ***Colorado*** ***River*** water curtailed. Additional water projects using substantial amounts of water may further lead to excess water use causing a Compact call. Such a call would first curtail the larger Front Range cities. Endangered fish also mount a cause for concern. If oil shale developers with senior rights require more water, endangered fish would lose their habitat at an alarming rate because the White and ***Colorado*** ***River*** basins contain extensive numbers of endangered fish.

Mr. Miller concluded his presentation by stating the various findings of Water on the Rocks, which proffers that western communities must understand and conserve water, especially if we continue our current usage of water and hope to expand to include oil shale development. The report found that commercial oil shale development would transform western water communities by changing the ways that people view and access water. Thus, we must balance the development and sustainability of water, and further strive to evaluate and understand oil shale development in terms of climate change and water availability. In order to do this, experts must quantify water needs and identify supply sources before we commit to oil shale development as the energy of the future.

Christopher McNicholas

***Colorado*** Water Courts Update

Justice Gregory Hobbs of the ***Colorado*** Supreme Court discussed the history of water law in ***Colorado*** and the future of the water courts. Justice Hobbs explained that, throughout ***Colorado***'s history, the courts helped develop ***Colorado*** water law. ***Colorado*** has seven water courts, which solely handle water issues. These courts have influenced the development of ***Colorado*** water law since 1879, when the ***Colorado*** legislature created them. The ***Colorado*** Supreme Court also has a long and significant history of deciding issues of importance in water law.

According to Justice Hobbs, the ***Colorado*** Supreme Court faces significant challenges in interpreting and enforcing water laws. Several water doctrines constrain the ***Colorado*** Supreme Court. In particular, **[\*510]** the doctrine of equitable apportionment and various interstate water compacts limit ***Colorado***'s access to the water that exists within its borders. Due to these compacts, ***Colorado*** may only appropriate one-third of the water in ***Colorado***. The courts must further divide this limited water among competing interests. Under the ***Colorado*** Constitution, the doctrine of prior appropriation dictates who may appropriate ***Colorado*** waters and who possesses superior water claims. Although prior appropriation controls distribution of ***Colorado*** water, the ***Colorado*** Constitution contains a preference clause that favors domestic water use over agricultural use and favors agricultural use over manufacturing use. However, the ***Colorado*** Supreme Court has found that this preference clause does not significantly modify prior appropriation. Instead, Justice Hobbs suggested that the preference clause operates as an emergency mechanism through which ***Colorado*** cities may purchase water rights from other, less favored sectors. Despite the preference clause, prior appropriation still applies to all the different uses of ***Colorado*** water, regardless of whether the appropriation is for mining, agriculture, kayaking, or other uses. However, ***Colorado*** courts must also honor federal-reserve water rights, such as tribal water rights. These rights are separate from, and generally superior to, prior appropriation water rights.

Justice Hobbs explained that, although ***Colorado*** will face challenges from climate change, the ***Colorado*** water courts are in a good position to approach these challenges. Justice Hobbs acknowledged that ***Colorado*** must address the problem of having a fixed supply of water and a rapidly expanding population. Accordingly, ***Colorado*** must find ways to stretch its water resources farther. Justice Hobbs explained that the ***Colorado*** water courts are well suited to address this issue because the water courts address individual water issues incrementally. Justice Hobbs predicted that, in the face of climate change, courts might require the appropriators of water to provide a persuasive showing that the appropriators are appropriating the water for a beneficial use and not wasting water.

Justice Hobbs also discussed recent efforts to make ***Colorado*** water courts more efficient. In the past, parties have complained that ***Colorado***'s water court system is too costly and time consuming. To address this criticism, the water courts have made all necessary forms available online and have also implemented new procedural rules, effective July 1, 2009. The rules impose stricter deadlines to promote efficiency in the water courts. In particular, a water referee now only has one year to make a decision before a water court addresses the issue. These rules attempt to streamline the water courts; however, it is too soon to tell whether these rules will make the court system more efficient.

Despite the challenges of climate change and procedural efficiency, Justice Hobbs expressed great faith in the future of the water courts. In particular, he explained that ***Colorado*** has been, and still is, a great **[\*511]** problem-solver of water issues to which other western states look for guidance. Justice Hobbs ended his presentation with his a reading of his poem, "Circumference." The poem described how living in a land of scarcity and opportunity connects everyone.

Ellen Michaels

***COLORADO*** LEGISLATIVE UPDATE OF WATER ISSUES

Doug Kemper, Executive Director of the ***Colorado*** Water Congress ("Water Congress"), concluded the day-long symposium with an overview of the water-related issues the ***Colorado*** legislature is currently discussing. Since 1957, the Water Congress has been the primary organization representing water interests in the state. Created by then-Governor Steve McNichols and then-Attorney General Duke Dunbar, the Water Congress now has approximately 350 members.

The Water Congress has monitored the successful Upper ***Colorado*** ***River*** Endangered Fish Recovery Program ("the Program") since the 1980s. The Program is a partnership that includes the states of ***Colorado***, Utah and Wyoming, the Bureau of Reclamation ("BOR"), the U.S. Fish & Wildlife Service, the National Park Service, Western Resource Advocates, the Nature Conservancy, and the Water Congress's sister organizations in Utah and Wyoming. The Program protects endangered fish native to the ***Colorado*** ***River***, including the ***Colorado*** pikeminnow, the humpbacked chub, the razorback sucker, and the bonytail chub. The Program's goal is to delist at least one of these species on the ***Colorado*** ***River*** by 2023; delisting is an indication that the species has recovered substantially. Mr. Kemper reports that the Program has already completed both the fish bypass structures and the hatchery program necessary for the delisting of each of these species. Impressively, the Program has completed 11,000 Endangered Species Act consultations to date - representing at least 2.1 million acre feet of depletions without a single lawsuit filed. ***Colorado***'s share of the cost of this program comes from a state severance tax from oil and gas revenues (ranging from ten to several hundred million dollars per year). About a quarter of the Program's revenue goes to maintaining water infrastructure, with another quarter going to operational accounts, which maintain basin amount and the water supply reserve account to fund the work of the basin roundtables). The Program also includes a fund for species conservation trust fund. Because the legislature has struggled to balance ***Colorado***'s budget over the last two years, the Program has pulled $ 150 million from the ***Colorado*** Conservation Board's cash account that is no longer available for water projects.

Kemper then summarized three recent and pending pieces of legislation: first, Kemper discussed HB1188, regarding rafting and whether or not the "right to float" existed in ***Colorado*** from the time of its creation as a state. There has long been legal uncertainty about the **[\*512]** right to float through private property are in ***Colorado***. ***Colorado*** State Representative Kathleen E. Curry initiated this bill, which has taken many forms. Initially, the bill read that ***Colorado*** would either adopt, or formally recognize that ***Colorado*** already has adopted English common law as well as the navigability concept. The Water Congress's State Affairs Committee reviewed the bill, and expressed concern about the bill in its initial form because the law referenced Oregon case law. Often, according to Mr. Kemper, out of state case law is incompatible in ***Colorado***. Generally, the Water Congress's State Affairs Committee believes that there are no navigable streams in ***Colorado*** that meet the test proposed by the bill, and therefore the bill will cause more uncertainty about the law. The House version of the bill passed with these problematic areas still intact. However, the Senate version of the bill stripped away the elements problematic to the Water Congress. Accordingly, the Water Congress adopted a neutral position on the current bill. For the first time in history, the Senate has assigned the current bill to the Water Congress, asking them to figure out a resolution. Before the Water Congress assumes this role however, the House must accept the Senate amendments. The bill is currently with the House.

Next, Kemper discussed HB1159, regarding basin of origin and the role of the Interbasin Compact Committee ("IBCC"). This bill did not pass House review, thus the Water Congress never had to consider it. The bill proposed that those who plan to transfer water from one ***river*** basin to another, in amounts exceeding 1,000 acre feet, must work out an environmental mitigation agreement with the local water conservancy districts regarding environmental and economic impacts of the water transfer. If parties are unable to come to an agreement, then the petitioner is subject to the 1937 Water Conservancy Act, which states that those seeking the transfer must demonstrate that the cost to existing prospective users will not increase. IBCC provided no specific recommendations regarding the proposed statutory changes ensuring the mitigation of impacts resulting from the interbasin transfer of water. After debating this bill, most legislators believe that the IBCC already conducts this work. Mr. Kemper believes that this issue will return to the legislature and the Water Congress in the next year.

Finally, Kemper discussed HB1051, which is a reporting requirement that the legislature amended to require the water conservation board, ***Colorado***'s primary water policy agency, to develop rules and guidelines for information to be submitted. This bill proposes that ***Colorado*** law makers should get consistent data regarding water conservation efforts. Such data will aid in long range planning to help ***Colorado*** better understand what its municipal demands are.

Kemper concluded his speech by briefly highlighting the following pieces of legislation: HB1204, a water-conservation plumbing-related bill; HB1250, which determines the funding for the ***Colorado*** Water Conservation Board and other projects; HB1327, which the Water **[\*513]** Congress opposed because it would have destroyed the Water Conservation Board; HB1358, which requires new homebuilders to offer water conserving options such as low-flow fixtures; HB1303, extended deadlines for water permitting related to oil and gas wells after the recent outcome of [*Vance v. Wolfe, 205 P.3d 1165 (****Colo.*** *2009);*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:7VM5-7FF1-2R6J-232N-00000-00&context=1516831) and Joint Resolution 004 to fund the state revolving fund administered by the ***Colorado*** Water Resources and Power Development Authority for water and wastewater infrastructure.

Sarah Felsen

University of Denver Water Law Review

Copyright (c) 2010 University of Denver Sturm College of Law

University of Denver Water Law Review

**End of Document**