

# [***CONFERENCE REPORT: UNIVERSITY OF DENVER WATER LAW REVIEW SEVENTH ANNUAL SYMPOSIUM: PREPARE. PROTECT. PRIORITIZE. EXPLORING COLORADO'S NEW WATER PLAN***](https://advance.lexis.com/api/document?collection=analytical-materials&id=urn:contentItem:5CYC-2F10-00SW-50BG-00000-00&context=1516831)

Spring, 2014

**Reporter**

17 U. Denv. Water L. Rev. 381 \*

**Length:** 15033 words

**Author:** Gina Tincher

**Text**

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James Eklund, the Executive Director of the ***Colorado*** Water Conservation Board ("CWCB"), which is in charge of drafting ***Colorado***'s new Water Plan, launched his presentation by pointing out the history of "creative tension" that exists between ***Colorado***'s eastern and western slopes regarding water use. He noted that this tension originates from the fact that 80 percent of the water is on the western slope, although 87 percent of the state population resides on the eastern slope. Eklund explained that forecasts predict ***Colorado***'s population will reach ten million by 2060. The snowpack's constant or below average yield, coupled with Lake Powell's recent all-time lows, mean ***Colorado*** must plan diligently for its future water use. Eklund pointed out that the CWCB has facilitated more than 780 statewide meetings as an essential part of the effort to address the widening gap between supply and demand.

Eklund commended the doctrine of prior appropriation for its adaptability and its resiliency in the face of constantly changing circumstances, from economic growth to recession. He noted that prior appropriation is not a stale doctrine, but, rather, it has allowed ***Colorado*** to advance and protect water uses of all kind. Eklund also emphasized that even though the doctrine is not the cutting edge of water planning, it nonetheless helps ***Colorado*** engage in the interstate water rights discussion.

Next, Eklund pointed out that ***Colorado***'s future depends on affirmative action such as ***Colorado***'s Water Plan ("Water Plan"), which Governor John Hickenlooper's executive order put into motion in 2013. Eklund also identified the Water Plan's values, which include vibrant sustainable urban landscapes, healthier water and environment, and robust recreation and tourism, as well as viable and productive agriculture. He noted that the CWCB does not limit the Water Plan to Denver, but that the plan is a statewide collaborative effort between the state's seven ***river*** basins seeking to build consensus.

Eklund next described the Water Plan's goals. The Water Plan will address the challenge of closing the gap between supply and demand, and aims to protect, preserve, and enhance the state's ***rivers***. Additionally, the Water Plan will formulate alternatives to buy and dry so as to align state efforts and water dollars. Finally, Eklund emphasized the Water Plan's goal of incentivizing a quicker federal regulatory process by creating a procedure that meets all required elements, has state endorsement, and allows the state to **[\*382]** prioritize its water resources.

Eklund commented on the Water Plan's expeditious process, which started in 2013 and is due at the Governor's desk in December 2014. He explained that the CWCB is closely following every water issue discussion in the state in order to make the process as inclusive as possible. The process includes basin roundtables, grassroots discussions that inform basin implementation plans across the state. The basin implementation plans will, in turn, inform the drafting of the Water Plan. Eklund stated that once the CWCB submits the first version of the Water Plan, the CWCB will engage the state as whole in order to further refine and improve the Water Plan.

Eklund finished his presentation by reminding the audience that planning for future water use was an obligation of the state. He called on those present to engage in the process in order to help the CWCB "get it right."

Edgar Barraza Exploring ***Colorado***'s New Water Plan, Featuring Representatives from the ***Colorado*** Water Conservation Board Addressing potentially the most important contemporary water issue in the state, the University of Denver Water Law Review Annual Symposium focused on the ***Colorado*** Water Plan ("***Colorado*** Plan"). The Symposium began with a panel discussion featuring members of the ***Colorado*** Water Conservation Board ("CWCB"). The discussion focused on three particular areas: (i) the role the Statewide Water Supply Initiative ("SWSI") will play in the new ***Colorado*** Plan; (ii) how the ***Colorado*** Plan will address the many issues surrounding the ***Colorado*** ***River***; and (iii) an overview of how the environment and recreation fit into the ***Colorado*** Plan. Working in concert, these topics help to better illuminate the work the CWCB is undertaking to complete the ***Colorado*** Plan.

The first panelist, Rebecca Mitchell, the Water Supply Planning Section Chief at the CWCB, detailed the role SWSI would play in the final version of the ***Colorado*** Plan. Completed in 2010, SWSI was a technical analysis of ***Colorado***'s water issues. It addressed demands for water in the state, supplies of water in the state, the gaps between supply and demand, and potential solutions to those gaps. The CWCB is currently updating the SWSI to coincide with the ***Colorado*** Plan. The update will establish a narrative-driven approach while incorporating new planning methods and measures that will assess the uncertain nature of future conditions.

Mitchell then transitioned to discussing how the CWCB will incorporate the SWSI into the Basin Roundtables ("BRTs"), which Mitchell explained are key components in developing the ***Colorado*** Plan. The Water For The Twenty-First Century Act, which the ***Colorado*** General Assembly passed in 2005, created the nine BRTs across ***Colorado*** to provide local, collaborative forums for stakeholders. Each of these BRTs is developing a Basin Implementation Plan designed to address the water supply gaps in the region. Mitchell explained that the CWCB will develop these Basin Implementation Plans in coordination with the updated SWSI. From there, the BRTs will send the Basin Implementation Plans to the CWCB, which will then incorporate **[\*383]** elements of the plans into the ***Colorado*** Plan. Through this process SWSI will flow through the BRTs, allowing the various stakeholders across the state to provide input before the ***Colorado*** Plan adopts the nine BRTs' recommendations.

Next, Ted Kowalski, the Interstate, Federal & Water Information Section Chief at the CWCB, explored the difficulties surrounding the ***Colorado*** Plan and the ***Colorado*** ***River*** Basin in particular. The ***Colorado*** ***River*** presents unique challenges for the CWCB because it impacts seven of the nine BRTs and is the subject of interstate compacts. Due to these difficulties, the ***Colorado*** Plan will build upon a number of interstate efforts to create a manageable and effective plan around the ***Colorado*** ***River***.

As Kowalski explained, the ***Colorado*** Plan will draw from the ***Colorado*** ***River*** Basin Study, which analyzed strategies to mitigate supply and demand imbalances through 2060. This study, conducted by the Bureau of Reclamation's Upper ***Colorado*** and Lower ***Colorado*** Regions in 2010, proposed a number of potential solutions to the large supply and demand gap that exists on the ***Colorado*** ***River*** and explained that no one alteration would completely mitigate the problem. The ***Colorado*** Plan will also incorporate aspects of Upper ***Colorado*** ***River*** Basin Compliance Planning initiatives, which explore strategies upper basin states may utilize to increase the likelihood of compact compliance.

Additionally, the ***Colorado*** Plan will incorporate ideas and data from the Water Bank Working Group. The Water Bank Working Group is currently working with ***Colorado*** State University on a multi-year study to assess deficit irrigation in western ***Colorado***. This analysis will help the CWCB to create a water plan that minimizes the potential of violating interstate compacts. Additionally, the CWCB will use the ***Colorado*** ***River*** Water Availability Study ("CRWAS") to provide technical data for the BRTs. CWCB is utilizing CRWAS to understand historic hydrology and extrapolate that data to explore what effect climate change could have on water hydrology. Kowalski stressed that while this is not an exhaustive list of all of the inputs the CWCB will analyze in ensuring the ***Colorado*** Plan is workable and efficient for the ***Colorado*** ***River*** Basin, it certainly shows how important the basin is to the CWCB.

Finally, Linda Bassi, the Stream and Lake Protection Section Chief at the CWCB, provided an overview of how the ***Colorado*** Plan will address environmental and recreational concerns. Of the four broad goals the CWCB outlined at the inception of the drafting phase of the ***Colorado*** Plan, two pertained to ensuring a healthy environment and expanding the recreation and tourism economies. In an attempt to meet these goals, the CWCB mandated that each BRT conduct a Nonconsumptive Needs Assessment. The first phase of the Nonconsumptive Needs Assessment included a stakeholder-focused mapping effort designed to indicate where important environmental and recreational attributes exist in each basin. The second phase identified projects and methods that each basin can utilize to ensure that these attributes receive an adequate nonconsumptive water supply.

The CWCB's goal is to have the BRTs incorporate the ideas expressed in the Nonconsumptive Needs Assessments into their Basin Implementation Plans. To assist basin stakeholders, the CWCB created a compilation of information designed to illuminate the various projects and methods available **[\*384]** to meet each basin's nonconsumptive needs. Bassi referred to this compilation as the "Nonconsumptive Toolbox." One tool that the CWCB is employing is the Nonconsumptive Gap Analysis, which will help the BRTs identify gaps in the protection of environmental and recreational attributes by illuminating which areas in a given basin are at risk. Bassi also explained that the Nonconsumptive Gap Analysis organizes existing protection measures for environmental and recreational areas into quantifiable data sets, which encourages the BRTs to identify long-term goals and outcomes for those areas.

Overall, Mitchell, Kowalski, and Bassi provided a helpful overview of the CWCB's approach to the ***Colorado*** Plan. All three speakers stressed the importance of allowing Coloradoans to have a voice in the ***Colorado*** Plan - whether through the BRT's or by contacting the CWCB directly. It may be unclear what the next chapter of ***Colorado*** water planning will be, but whatever it is, each speaker on the panel was confident that the ***Colorado*** Plan would certainly play an important role.

Matt Freemann ***Colorado***'s Basin Roundtables - Perspectives From Around the State The University of Denver Water Law Review held its Seventh Annual Symposium on April 18. The title of the second panel of the morning was "***Colorado***'s Basin Roundtables - Perspectives from Around the State." Star Waring, natural resources and water law attorney at Dietz & Davis, P.C. and adjunct professor of water law at the University of Denver Sturm College of Law, moderated the four-person panel. The discussion focused on the importance of open communication and mutual understanding between representatives from each of ***Colorado***'s nine basin roundtables. The panelists included Marc Waage, Denver City and County Representative for the Metro Basin Roundtable; Gary Barber, Chair of the Arkansas Basin Roundtable; Ken Neubecker, Environmental Representative of the ***Colorado*** Basin Roundtable; and Sean Cronin, Chair of the South Platte Basin Roundtable. The Four panelists presented a range of perspectives that highlighted the diversity of concerns for ***Colorado***'s various water interests, as well as the importance of working together to find common solutions.

Marc Waage, Denver City and County Representative for the Metro Basin Roundtable, began his comments by making light of the often-adversarial position occupied by the urban districts in water planning discussions. As the home to the majority of ***Colorado***'s populace, urban districts will inevitably make demands on the state's water resources that the more agricultural regions are prone to protest. However, Waage pointed out, this opposition can be reframed in a more productive manner to achieve a healthy mutual understanding. Urban areas are responsible for the overwhelming majority of the state's economy and inevitably facilitate opportunities for the other regions. Furthermore, agriculture is responsible for 85% of the state's water consumption, but only 5% of the state's economy; indicating that urban and industrial regions are comparatively more efficient with their water use. Nonetheless, Waage highlighted the importance of working with the other **[\*385]** roundtables and noted a number of particular areas where he believes improvements in efficiency can and should be made: 1) joint planning regarding land and water use 2) requirements for water efficient plumbing fixtures 3) redevelopment of urban areas with a focus on water efficiency, and 4) development of new sources of supply from the western slope.

Gary Barber, Chair of the Arkansas Basin Roundtable, focused his initial comments on the history of the roundtable discussions and the value they present to statewide water planning efforts. Barber emphasized the extremely diverse interests of the various roundtables, but pointed out a common interest in a viable future is a shared goal for all participants. The most pressing problem for the Arkansas Basin Roundtable is determining alternatives to a 30% reduction in agricultural land required to meet the municipal gap. A 25,000-30,000 acre foot gap already exists, which has stressed the necessity for agricultural water reduction. This reduction is naturally unpopular for the agricultural regions, which have responded by pursuing three avenues to establish viable alternatives: 1) technical studies, 2) policy studies, and 3) pilot projects. Barber suggested that the emphasis for his roundtable is the importance of increasing storage capacity, maximum utilization of existing water, the need to frame the dialogue in economic terms, and the significance of collaborative solutions.

Ken Neubecker, Environmental Representative for the ***Colorado*** Basin Roundtable, had a markedly different set of concerns. As the only representative from the western slope, Neubecker stressed the importance of having an ecological perspective when forming engineering plans. Water plays an incredibly important role in sustaining life, and he argued that we must be careful not to view it merely as a commodity. He focused on the notable absence of reasonable allocations for "non-consumptive" use in current water plans, but contested the use of this term as often misplaced and inaccurate. Neubecker suggested that ***Colorado*** should place more focus on supplying an appropriate amount of financial resources to address how we might sustain a flourishing environment as well as a flourishing economy, and the need to develop appropriate modeling technology to address these concerns.

Sean Cronin, Chair of the South Platte Basin Roundtable, shared a number of observations from his experience. He highlighted the central importance of planning ahead and working together, and he applauded the roundtables for facilitating this essential interaction. Last year's floods plainly illustrated the need for forward-looking planning, as well as the reality that environmental concerns become an afterthought in times of emergency. The South Platte Roundtable is unique in the diversity of its concerns, requiring substantial amounts of urban, industrial, and agricultural use. Current growth rates suggest that this basin will continue to experience shortages. Thus, the importance of conservation is paramount, as is the need to develop new supplies, most likely from the western slope.

Despite the unique perspectives and interests of each of the panelists, all agreed that open communication and consistent dialogue are essential if we hope to secure a comfortable and living future for all Coloradans.

Bradley Kloewer **[\*386]** Water Plans in ***Colorado*** and Elsewhere: Perspectives from Across the West This year's annual University of Denver Water Law Review Symposium focused on ***Colorado***'s new State Water Plan ("***Colorado*** Plan"). The third panel of the day included five speakers from different states who presented perspectives on their states' respective water plans. The discussion examined state water plans from Idaho, Wyoming, Texas, and California and applied the lessons learned in those states to ***Colorado***'s ongoing water plan drafting process.

The first panelist, Clive Strong, Chief of the Natural Resources Division of the Office of the Attorney General of the State of Idaho, provided an overview of Idaho's history with its water plan and identified ways he believed the plan has helped or hindered natural resource development and conservation in Idaho. Idaho implemented its first state water plan in 1976. This plan resulted from the City of Los Angeles Department of Water and Power's proposal to divert water from Idaho's Snake ***River*** through Nevada and into Lake Mead. In response, the Idaho Legislature promptly enacted a constitutional amendment that created the Idaho Water Resource Board as an effort to protect the state's water resources. The amendment empowered the Water Resource Board to develop a comprehensive state water plan.

The Idaho State Water Plan consisted of state-wide policies and basin-specific policies. The Snake ***River*** Basin Policy 32 is one example of a basin-specific policy. As Strong indicated, this policy established minimum stream flows for the purpose of allocating water between instream uses and consumptive uses at several locations along the Snake ***River***. In 1986, Idaho revised its state water plan. Some of the revisions included incorporating the Swan Falls Settlement, which resulted from [*Idaho Power Company v. State, 661 P.2d 741 (Idaho 1983).*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3RVK-TCM0-003D-301T-00000-00&context=1516831) The Swan Falls Settlement balanced the competing needs of hydropower and consumptive uses and provided for a new increase of minimum flows, which decreased the potential for water development from 800,000 acre-feet to 450,000 acre-feet. In 2012, Idaho again revisited its state water plan to update the Snake ***River*** Policy and to provide new plans for the future.

Strong concluded with his advice for successful state water plans. Strong emphasized that successful state water plans must have the ability to change. Additionally, Strong mentioned that a state should measure its plan's success by its implementation and not by its planning.

The second panelist, Steve Wolff, ***Colorado*** ***River*** Coordinator for the Wyoming State Engineer's Office, discussed his experiences and personal perspectives regarding Wyoming's water plan and how ***Colorado***'s new water plan could benefit both states. Wyoming divides its water planning between the State Engineer's Office and the Wyoming Water Development Commission ("WWDC"). In 1973, Wyoming completed its Statewide Framework Water Plan, which predicted future demands and listed strategies on how to address future demands.

This plan remained in effect until 1997, when the Wyoming legislature directed the WWDC to conduct a water planning feasibility pilot study with the **[\*387]** assistance of the University of Wyoming and the State Engineer's Office. The legislature intended for this study to build on existing data sets and to maximize public access to the data and the process. The first round of the study consisted of gathering inventory and information. The study began with the Green and Bear ***River*** basins and eventually included all seven basins in Wyoming. The first round also developed Basin Advisory Groups ("BAGs"), similar to ***Colorado***'s basin roundtables. Wolff explained that these BAGs provided public input to the planning process and helped identify the public's concerns. The state completed the first round in 2007. Wolff explained, however, that the next round - the implementation stage - never happened. Instead, the State decided to repeat the first round to gather more information.

Wolff concluded his presentation with an analysis of the success of Wyoming's state water plan. In Wolff's opinion, the plan successfully developed a comprehensive data set that is accessible to everyone, which created transparency. The plan also successfully developed relationships through the creation of the BAGs. However, Wolff opined that Wyoming's plan failed at the implementation phase. Instead of implementing the plan in 2007, the plan began round one again and continued to gather information and data from the various basins.

The third panelist, Elizabeth Fazio, Director for the Committee on Natural Resources in the Texas House of Representatives, discussed the Texas State Water Plan ("Texas Plan") and the process the State took to pass legislation to finance water development projects over the next fifty years in Texas. Fazio began her presentation with an overview of Texas's future water needs. She displayed projections showing that the population in Texas will almost double by 2060 from 25.3 to 46.3 million people. Additionally, if Texas does nothing to implement a state water plan, models predict a water shortage of 8.3 million acre-feet of water by 2060. Therefore, the need for a successful water plan will grow as the population continues to rise.

The 2012 Texas Plan is the most current state plan. The state plans on a five-year cyclical basis over a fifty-year horizon. The Texas Plan consists of sixteen Regional Water Planning Groups and 562 Water Management Strategies. The State determined the plan's total cost at $ 53.1 billion. When the state surveyed local and regional entities as well as water providers, those entities estimated they needed help to finance about $ 26.9 billion of the total cost.

Fazio discussed how the state considered financing the Texas Plan. Some ideas included tap fees, water hog fees, electric fees, and one-time capitalization. However, as Fazio discussed, none of these ideas would cover the full $ 26.9 billion. Texas then looked into financing the Texas Plan using Texas's "rainy day fund," funded by oil and gas revenue. As Fazio discussed, the plan needed $ 2 billion from the rainy day fund. This amount could create a revolving program that would finance the required $ 26.9 billion.

In Fazio's opinion, the issues with the Texas Plan came not from the implementation of the plan but from the financing and development of the plan. Even with $ 2 billion from the rainy day fund, the Texas Plan needed entities to implement and develop projects. Fazio emphasized the importance of creating incentives by lowering interest rates, providing deferred loans, or providing longer repayment terms. These incentives would help create a dynamic and **[\*388]** innovative revolving State Water Program. The Texas water plan uses the two billion dollars from the rainy day fund to issues debt at the local and state levels to finance the incentives.

In her presentation, Fazio emphasized the importance of local control to the Texas Plan's success. Localities fund and build the projects at a local level and, therefore, it is important that the localities have control of the projects.

The fourth panelist, David Aladjem, Partner at Downey Brand, LLP in Sacramento, discussed California's State Water Plan ("California Plan") and how ***Colorado*** could learn from California's experience with its own water plan. Aladjem began his presentation by discussing the evolution of the California Plan. He focused on five different important ways that the plan has evolved since 1957. As Aladjem explained, the plan has moved (i) from a project-focused plan to a sustainability-based plan, (ii) from a centralized plan to a localized plan, (iii) from a practical approach to a theoretical approach, (iv) from an engineering focus to a political focus, and (v) from the central guiding document for state water policy to a peripheral document. As Aladjem argued, the California Plan is no longer the centerpiece in California, and most of these five evolutionary changes have weakened the success of the plan.

Aladjem concluded with some questions ***Colorado*** should consider for its own state water plan. For example, what is the plan's purpose? Who controls the plan? Who resolves differences among stakeholders? How does the plan direct actions? And is there any accountability? Answering these questions early on, Aladjem suggested, could help ***Colorado*** implement a successful state water plan.

The final panelist, Sarah Klahn, Managing Partner at White & Jankowski, LLP in Denver, provided a ***Colorado***-based perspective on the new ***Colorado*** Plan in the context of water ecology, water rights, and water law. Klahn provided a practitioner's perspective on how the ***Colorado*** Plan would affect her clients, whether they are large municipalities or small agricultural users. Klahn argued that ***Colorado*** does not currently need a state water plan. She contrasted the implementation of California and Idaho's plans to ***Colorado***'s. California and Idaho's plans arose out of a water crisis or incident in each state. Klahn argued, however, that while ***Colorado*** faces gaps in supply and already visible adverse effects from climate change, there is currently no water crisis in ***Colorado*** that would necessitate a water plan.

Klahn discussed her concerns regarding the impact that the ***Colorado*** Plan could have on ***Colorado***'s prior appropriation system. Relatedly, Klahn worried that if the state decides who has the highest and best use of water, the ***Colorado*** Plan effectively will lead to a public trust doctrine - a doctrine the ***Colorado*** Supreme Court has rejected. Klahn also questioned how the ***Colorado*** Plan will make decisions in a way that does not disadvantage people's private property interests.

Klahn provided several reasons that the implementation of a ***Colorado*** Plan may be premature. For example, Klahn suggested that the ***Colorado*** Plan will potentially hinder municipalities' ability to obtain new water supplies in the absence of new projects. Many municipalities currently find additional water supplies through water rights transfers from irrigated agriculture. Klahn discussed that one of the ***Colorado*** Plan's goals - to reduce the rate of **[\*389]** agriculture-urban water transfers, or "buy and dry" - would remove this process as a viable option. Additionally, Klahn worried that the ***Colorado*** Plan will undermine local and regional decision-making, which will be problematic for small cities and industries. She also questioned how the ***Colorado*** Plan intends to convert the basin roundtables' recommendations to the state level without taking away local control. Finally, Klahn questioned whether the state as a whole is in the position to do more than provide financing for a state water plan.

In sum, the panelists provided an interesting and stimulating discussion on the differences of state water plans in several western states. Their discussion highlighted the major successes and failures of different state water plans and how ***Colorado*** could learn from these plans in implementing its own state water plan.

Autumn Aspen

ROCKY MOUNTAIN LAND USE INSTITUTE ANNUAL CONFERENCE 2014: MOVING BEYOND RECESSION, WHAT'S NEXT?

Water Supply Challenges and Solution for the Rocky Mountain West Denver, COMarch 12-14, 2014 On the final day of the Rocky Mountain Land Use Institute's 2014 Conference, a panel of water professionals greeted an audience of land use planners. Titled "Water Supply Challenges and Solutions for the Rocky Mountain West," the conversation that emerged called for a movement from the days of diverting water through pipes to engaging in critical dialogue about water in the public forum

The panel included three speakers, each with a nuanced expertise underlying his perspective of the future of water in the West. Grady Gammage, attorney at Gammage & Burnham and Senior Research Fellow at Arizona State University's Morrison Institute, presented his research on the Central Arizona Project and the diversion of ***Colorado*** ***River*** water to make Phoenix and agricultural land in Arizona possible. James Eklund, Director of the ***Colorado*** Water Conservation Board, discussed his efforts to garner community input for an in-progress draft of the ***Colorado*** Water Plan. Jim Lochhead, CEO of Denver Water, closed the panel with broad commentary on the paradigm shift occurring around water and Denver Water's collaborative approach to planning for the future.

Despite the panelists' respective interests in research in Arizona, policy in the state of ***Colorado***, and pragmatics in Denver specifically, each lamented the historical and present state of water politics and called for strengthened relationships between the different players at the water-planning table. Under the broad umbrella of "water supply challenges and solutions," the speakers pointed to the particular problem of adversity between agricultural and municipal water users, and the creation of more integrated and cooperative community relationships required to reach a solution.

**[\*390]** According to Grady Gammage, the current debate around water supply and scarcity is a battle between "plumbers and planners." Plumbers address the societal problem of water scarcity by building pipes and dams to transport water, and then leave the problem there. This mentality, that we can move water wherever we need it but should avoid complex conversations about water use, pervades our water paradigm as the way we successfully settled the West. According to Gammage, the time for the plumber mentality is over. With the help of planners, we must now face the difficult question of how to use the water we have.

In a presentation of his report on the Central Arizona Project, Gammage emphasized the false assumptions underlying popular belief about Phoenix, Arizona. Gammage especially lamented the way people outside of Phoenix perceive the city as the most unsustainable city in the world. In reality, city planners in Phoenix are always conserving four years of extra water supply, and are in that way models for wise water planning. According to Gammage, overly critical external beliefs about Phoenix cripple effective water planning in the West as a whole.

Gammage emphasized that every city in the country uses more water than falls in rain. Unlike ***Colorado***, Arizona has the fortune of growing crops and people in the same place, converting land from farming to subdivisions, which use less water respectively. His report called for a reconfiguration of the belief that Phoenix is a "giant demographic mistake," using population and precipitation data to analyze the issues surrounding Arizona's continued growth despite increasing population and decreasing water resources. It sought to educate the public about the Western water systems and their reliance on a highly variable field. Some years yield much precipitation; other yield only drought. Western water systems are built with certain amplitude of variability, but climate change raises questions about whether we are making the right assumptions.

In framing the discussion around use of current water resources and the land-water nexus, Gammage pointed to several choices Arizona needs to make to determine where it (and presumably, the West more broadly) can continue to grow. These competing priorities include density, landscaping, the lifestyle of affluence (such as swimming pools in the desert), aesthetics in the urban environment, integrity of the natural environment, and agriculture. This final concern was of particular interest to Gammage. He believes we should use water as a policy for preserving some measure of agriculture in Arizona, which currently allocates nearly half of its water to crop production. The benefit of keeping agriculture in Arizona's water use plan is the ability to move water between agriculture and the city in varying times of drought and plenty.

According to a disappointed Gammage, his report failed to spur sufficient dialogue to facilitate the paradigm shift required around water in the West. The Sun Corridor, occupying the entire southern portion of the state of Arizona, can continue to grow until 2030, but it is uncertain what will happen after that. The uncertainty surrounding climate change requires critical conversation about water resources and collaboration between typically adverse land developers and water planners. According to Gammage, mere water use reduction evades the real question of how to plan for decreasing water resources. He adamantly believes that rather than augmenting water supply like **[\*391]** plumbers, we need to address the pivotal questions of planners.

James Eklund of the ***Colorado*** Water Conservation Board brought the conversation closer to home with a call for collaboration on the drafting of the ***Colorado*** Water Plan. He discussed historical skepticism to a statewide water plan, due to widespread faith in the doctrine of prior appropriation. The changing paradigm follows social and environmental challenges ranging from drought to wild fires to severe floods. ***Colorado***'s ability to meet these challenges requires an intentional and collaborative plan.

While noting the weaknesses of the prior appropriation doctrine, Eklund emphasized its resiliency and ability to adjust. He denounced efforts to do away with prior appropriation, instead calling for a statewide water plan that can and must work within the doctrine on which our system of local control and private property rights rests. Stating that this status quo solution to scarcity is unacceptable, Eklund called for a ***Colorado*** Doctrine formed of collaboration and action. Cooperation and shared self-interest must overcome rhetoric on both sides of the water use divide.

Eklund's presentation echoed the water supply challenges Gammage detailed, including the gap between supply and demand, the degradation of ***rivers***, the shortsightedness of buy-and-dry, and the sluggish movement of regulatory processes. In response to these challenges, Eklund envisions a secure water future including vibrant sustainable cities, healthier water and natural environment, robust recreation and tourism, and viable and productive agriculture.

According to Eklund, the solution to the challenges ***Colorado*** faces in its efforts to secure a sustainable water future is a comprehensive and collaborative ***Colorado*** Water Plan. The draft plan is due to the incoming Governor on December 10th, 2014, a deadline intentionally placed after election season so as to avoid political influence. Whoever is then governor will either remand or approve the plan, at which point Coloradans can begin creating their own plan for the trajectory of water in the state. Eklund admitted that ***Colorado*** is not a pioneer in state water planning, noting that all Western states have water plans except ***Colorado*** and Arizona. Rather than maintaining the disconnected spectrum of opinions about water that currently exists, Eklund called for ***Colorado*** to join the state water planning movement as a united front.

In order to achieve that unity, the ***Colorado*** Water Conservation Board is facilitating a bottom-up approach, which former Speaker Russ George established, to take water conservation out of party politics and bring it to the public. Basin Round Table meetings are currently taking place, bringing together ranchers, farmers, non-profits, and residents to participate in the creation of the ***Colorado*** Water Plan. In order to broaden what has been an insular conversation over the last several years, Eklund elicited a call to action. He urges Coloradans from all walks of life to participate in the water planning process. Those who are interested can visit [*www.coloradowaterplan.com*](HTTP://www.coloradowaterplan.com) to begin attending Basin Round Tables and submitting comments to the drafting process. Even more importantly, Eklund asks Coloradans who care about water to talk to their neighbors about participating in a community-based solution to the state's water challenges.

CEO of Denver Water Jim Lochhead offered an even more focused **[\*392]** perspective on water planning and reinforced Gammage and Eklund's insistence on an integrated discussion around realistic water planning. Despite Western explorer Zebulon Pike's early celebration of water scarcity as a barrier to unchecked Western expansion, infrastructure melded with a distinctly plumber-like mentality to allow the city of Denver to exist. Today, Denver Water serves over one million people with only two percent of the state's water supply.

Lochhead summarized the organizational structure of Denver Water and illustrated a few ways in which it is a unique water provider, independent of land use management. Even further than operating like a business that can pour its rates back into the system to encourage customer conservation, Denver Water is participating in planning discussions among states in the ***Colorado*** ***River*** Basin. This conversation is necessary because the future of ***Colorado***'s water supply is at stake. As all three of the panelists suggested, water planners have moved from an era of supply development to an era of limits and thinking about sustainability in the face of complete uncertainty. The water system is no longer just about infrastructure, but also includes watersheds, the western slope, and the direct connections between urban centers throughout the Basin.

Lochhead explained that the dialogue needed around water is not simply about conservation. A secure water future requires planning around economic and natural resources sustainability. While the historical conversation around water consisted largely of self-interested appropriation, the new trend must relate to uncertainties and topics that political leaders are typically uncomfortable addressing. Among the topics that Lochhead considered of primary importance in the water planning conversation are climate change, population growth, ***river*** diversion security, and permitting efficiency.

According to Lochhead, the more we learn about climate change, the more we realize we do not know. It is unclear whether a changing climate will result in more precipitation or less, and our water rights system is built on assumptions about fixed amounts of water. Lochhead suggested the need to develop a regulatory and allocation plan that responds to a changing climate and its impacts on hydrology.

Lochhead encouraged the conversation around growth to shift from planning how much ***Colorado*** can grow to strategizing for how exactly ***Colorado*** should grow. ***Colorado***'s doubling population requires municipalities and other players to come together to discuss urban sprawl and water use. Lochhead was adamant that population growth cannot continue in the same way that led to the last five million people in ***Colorado***. Rather than having a simple conversation about meeting a water supply gap, water planners and land use planners must collaborate to craft a long-term plan about how to grow within existing service areas while meeting the needs of a growing population.

Lochhead also acknowledged a major concern with ***Colorado*** ***River*** security. Cities like Denver have grown dependent on allocation of the ***Colorado*** ***River*** founded on the ***Colorado*** ***River*** Compact, which overestimated water supply and assumed agricultural development on the ***river***. Our needs are different now, and the ***Colorado*** ***River*** is burdened with environmental and recreational interests, as well as municipal needs. Like Gammage and Eklund, Lochhead called for more cooperative conversations between urban and agricultural projects so as to avoid massive dislocations, economic instability, **[\*393]** and recreational impacts on cities.

Finally, implementing creative solutions to Denver and the ***Colorado*** ***River*** Basin's water supply challenges requires quicker permitting processes. Lochhead called for the development of a permitting process that includes some level of logic. He suggested continued effective environmental analysis, but at a pace that allows water users to get through the process in a reasonable amount of time.

Recognizing the practical reality that transcontinental diversion projects are too costly to serve as potential solutions, Lochhead closed the RMLUI panel by reiterating the need for true communication and collaboration between interest groups, particularly land use and water planners. Discussion of the real issues at stake will require political courage and committed community participation. By moving past an "us vs. them" mentality, ***Colorado*** can integrate uncertainties into a plan that will sustain the Front Range economically, environmentally, and from a smart-growth perspective.

Ashley Basta Land Use Tools for a Water-Smart Future: Training Communities and Building Networks As part of its weeklong conference, the Rocky Mountain Land Use Institute ("RMLUI") hosted a three-member panel that discussed land use and its importance in water-related issues, especially in ***Colorado*** and other western states.

The host of the panel, Drew Beckwith, a water policy manager with the Western Resources Advocates, first addressed the growing gap in urban water supply. Beckwith explained that as population continues to grow there is a constant concern over the availability of water for future generations. Beckwith mentioned that because of this population growth, the demand on the ***Colorado*** ***River*** will exceed its supply sooner than expected. Before introducing the speakers, Beckwith addressed how land use substantially affects water supply and emphasized that different geographic locations face different land use challenges.

The first speaker, John Nolon, professor at the Land Use Law Center at Pace Law School, discussed integrating water and land use planning through leadership training. Nolon focused on the work of the Land Use Leadership Alliance training program ("LULA program"), which educates local land use decision-makers on legal tools and techniques. The step-by-step LULA program focuses on reaching out to prominent local leaders, bringing them into the training program, educating them on land use and decision-making, and subsequently having them implement post-training strategies in their localities. The LULA program selects communities that have something in common with each other or are geographically proximate, such as Aurora and Castle Rock in ***Colorado***, to organize the dialogue and address programs at a regional level. The program then introduces prominent local leaders to the program and focuses their work on legal research and policy issues. The program finds great importance in urban form - the spaces and boundaries that make up a city. **[\*394]** Additionally, the kind of buildings constructed in a city can create water consumption rates that vary greatly. Nolon argued that there is a need to integrate water and land use planning, since a majority of water supply planners do not consider urban form as having a direct relevance to water consumption. The training itself takes four days and the participants develop strategies to implement the program after the training.

Nolon also addressed the lessons learned from the program. First, Nolon noted that there is a lack of horizontal connection within some cities and amongst other cities. Second, there is a lack of vertical connection between regional and state agencies. Third, the instructions for completing water conservation plans do not focus on land use, although knowledge of land use law is important for water planners. Furthermore, Nolon expressed the importance for land use planners to recognize the importance of understanding water supply projections. The strategies thus far developed from the program include creating water elements for comprehensive planning in community developments, considering water in making discretionary project decisions, and redrafting zoning and subdivision regulations.

The second speaker, Greg Fisher, manager of demand planning at the Denver Board of Water Commissioners ("Denver Water"), discussed Denver Water and its perspective on land use and water in ***Colorado***. Denver Water is an independent municipal agency first established in 1918. Its funding comes from water rates and tap fees, and the agency employs 1,100 employees in twelve counties and serves about twenty-five percent of ***Colorado***'s population. Denver Water has a collection system containing four thousand square miles of watershed, nineteen reservoirs, two tunnels, and nine hydroelectric power turbines.

Fisher addressed the land use issue in ***Colorado***: eighty percent or more of ***Colorado***'s water is on the western slope while most of ***Colorado***'s residents live on the eastern slope. Denver Water expects ***Colorado***'s population to grow by the millions and, because of this, water providers will have to meet the growing demand. Based on its per capita use goal calculations, Fisher stated that Denver Water set a twenty-two percent water reduction goal by 2016. The reduction will target all customers by providing conservation incentives, utilizing marketing tools, and including an outreach program. Fisher closed by saying ***Colorado***'s population will continue to grow, and the State accordingly needs to consider many conservation techniques, including what landscaping is appropriate for the state. Since ***Colorado*** residents value the state's open spaces and forty percent of Denver Water's use goes towards outside use, this issue is imperative and the concern will continue to grow with the population.

The last speaker, John Fernandez, the FasTracks and Transit Oriented Development team leader for the City of Aurora, discussed land use and water conservation in Aurora. Fernandez first talked about how important transportation is to water conservation in Aurora. Fernandez argued that the FasTracks system's development around transit centers is critical to reduce water needs and raise income levels by allowing the transit centers to become economic centers.

Because Aurora also faces population growth, demand and supply planning are important. Population scanning, growth projections, and improvement projects are routinely evaluated. Future tools for Aurora include regional **[\*395]** growth plans, redirecting sprawl around transit centers, maintaining growth allocations, and creating a new policy called "Metro Vision", which seeks to concentrate fifty percent of the new housing and seventy-five percent of the new employment in urban centers. The next steps for Aurora include major revisions to tap fees and rates, new park and open space dedications, re-zonings along the urban centers, and designation of new urban centers.

Overall, the panel provided a detailed overview about how land use issues and water use issues significantly affect each other, and how developers need to address both concerns.

Devon Bell The Dollars and Sense of Watershed Ecosystem Services Nearly four hundred guests attended the twenty-third annual Rocky Mountain Land Use Institute ("RMLUI") conference, which addressed the topic "Moving Beyond Recession: What's Next?" The conference drew private and municipal planners, land use attorneys, public officials, developers, and many others to the University of Denver Sturm College of Law for three days and presented over forty panels of speakers.

The session titled "The Dollars and Sense of Watershed Ecosystem Services" included a moderator and three speakers that explained what ecosystem services are - specifically relating to watersheds - and offered examples ranging from the global context to local watershed protection efforts.

"Ecosystem services" are the collective benefits humans receive from a healthy, well-functioning ecosystem. To give a simple example, upstream vegetation filters harmful contaminants out of water as it moves downstream. Ecosystem services fall into four categories: supporting services, regulating services, provisioning services, and cultural services. Watershed ecosystems primarily provide a regulating service in the form of cleaner water for human use because healthy ecosystems naturally purify water. The panelists used watersheds in ***Colorado*** as an example. When watersheds in high elevations are healthy, cleaner water flows into reservoirs, allowing water providers like the Denver Board of Water Commissioners ("Denver Water") to save money on purification. The panelists focused on how watersheds and users can fund and provide ecosystem services that can help to maintain healthy watersheds.

Devon Buckels, a member of the American Institute of Certified Planners, moderated the panel. Buckels works for the Environmental Protection Agency as an Urban Waters Partnership Coordinator and serves on the Denver Sustainability Advisory Council. Through these positions, he plays an important role in the South Platte ***River*** Urban Waters Partnership, making his background well suited for moderating a discussion on watershed ecosystem services.

The first panelist, Kate Hamilton, an independent consultant and member of the ***Colorado*** Governors' Climate and Forest Task Force, offered a global perspective on ecosystem services. Hamilton studies what water users currently pay for ecosystem services worldwide. She stressed that this is different than measuring the value of ecosystem services because the value incorporates many different considerations and indirect benefits that actual payments do not.

**[\*396]** Hamilton divided ecosystem services payments into three major groups: (i) payments made by companies driven by regulation, (ii) payments made by governments, and (iii) purely voluntary payments, such as Earth Day tree-planting. Hamilton pointed out that the phrase "ecosystem services" encompasses a wide range of services from carbon sequestration and trading, to pest control and air purification. She remarked that unlike other environmental markets such as carbon trading, watershed ecosystem service programs require unique tailoring for each watershed.

Hamilton stated that watersheds receive the most money globally of any ecosystem service. Hamilton also described "watershed payments" as essential to the management of our "natural infrastructure" because they identify and protect the benefits ecosystem services provide that we depend on, like pollution filtration or flood control. However, Hamilton noted that amongst watershed services programs, there is a great variation in the degree of monitoring and measurement of the benefits watershed payments provide. This issue makes it difficult for economists to quantify the impact of these programs.

The next speaker was Travis Warziniack, a U.S. Forest Service ("USFS") economist with the Rocky Mountain Research Station's Human Dimensions program. Warziniack focused on the evaluation of watershed ecosystem services with respect to providing safe drinking water. According to Warziniack, the USFS's "Forests to Faucets" surface drinking water program identifies key watersheds that would benefit from watershed payments. To qualify for the program, an area of USFS land must supply drinking water, be threatened by development, and must have consumer demand for the water. Warziniack mentioned that USFS land is the largest single provider of water in ***Colorado***, supplying around sixty-eight percent of the state's surface water; indeed, the federal government owns nearly forty percent of ***Colorado*** land.

Warziniack also discussed Code of Federal Regulations 36 § 219.1 ("USFS Rule"), which sets forth rules and regulations pertaining to National Forest system land management planning. This 2012 USFS Rule provides a legal structure that compels the USFS to employ ecosystem services programs in conjunction with other uses of the land.

He expressed frustration with the drafting of this section of the USFS Rule. Warziniack suggested that many USFS foresters would prefer to take an approach similar to zoning in the municipal land use context - that is, the USFS would prefer to designate certain areas for elk habitat, other areas for hiking, and separate areas for watershed conservation. However, the 2012 USFS Rule requires multiple uses of the same land. Thus, areas selected for watershed conservation often must perform another function, such as allowing mountain bike trails. Warziniack indicated that the USFS Rule prevents foresters from using their discretion in implementing their preferred forest management techniques. In light of the USFS Rule and greater general publicity of forestry practices, Warziniack submitted that the renewed widespread interest in forest management by non-foresters stems from fiscal concerns caused by wildfires. As recent wildfires have demonstrated, the alternative to responsible forest management and strategic watershed ecosystem service payments is extraordinarily expensive.

Finally, Don Kennedy, an environmental scientist and member of Denver **[\*397]** Water's Planning Division discussed watershed management and wildfire impacts. Kennedy said that over the past century or so, authorities have not properly managed ***Colorado***'s forests due to the low value of ***Colorado*** timber, leading to adverse impacts on ***Colorado*** water sources.

For example, Kennedy stated that this situation contributed to the larger and more frequent wildfires that ***Colorado*** has experienced in recent years. Kennedy highlighted the 1996 Buffalo Creek fire that consumed nearly 12,000 acres in about four and a half hours. Two months after the fire, a two-inch rainstorm created massive problems for Denver Water. The rainwater carried a large load of sediment with debris that included charred trees, propane tanks, heavy metals from burnt trees, and dissolved oxygen into the Strontia Springs Reservoir. Denver Water paid more than thirty million dollars to dredge the reservoir. This attempt to make the water potable failed, however, because it failed to remedy the water's high manganese content. Kennedy offered several mitigation techniques that, if used as preventative measures, would have been drastically cheaper and more effective than dredging the reservoir. The potential mitigation techniques ranged from straw bale check dams and contour felling of trees, to salvage logging and hydro-axing of trees to prevent sediment from getting into reservoirs.

The panel then addressed questions from the audience, one of which was, "how is Denver Water paying for its watershed ecosystem services program?" Don Kennedy explained that Denver Water does not include line item fees on bills to customers; instead it incorporates the cost of the program into rates. He added that grants from the federal government and other partnership opportunities have helped to reduce the program's cost for customers.

The RMLUI's 2014 conference was a success due to informative panels like this one. Each panel focused on timely and pressing issues while providing innovative approaches to consider for the future.

Emily Dowd

CELEBRATING 40 YEARS OF SUCCESS AND CHALLENGES FOR ***COLORADO***'S INSTREAM FLOW PROGRAM

Denver, ColoradoJanuary 15, 2014 "O, dear daughter, be not discomforted!

They can attempt to possess your beauty

Beyond measure, without sufficient ends

And looking glasses, frenzy, berserk, de-

Hydrate marvels they have engineered in

Fact, conveyance, deed, statute, law, decree,

Cannot substitute for the Natural Stream

Of your loving boundless intimacy." -Excerpt from "Mother to Daughter," written and read by Justice Gregory J. Hobbs, Jr. in celebration of the fortieth year of ***Colorado***'s instream flow law January 15, 2014.

**[\*398]** Roughly 200 western water policy enthusiasts gathered in the ***Colorado*** Supreme Court's Courtroom on January 15, 2014 to celebrate the 40th anniversary of the state's Instream Flow ("ISF") Program and discuss the program's role in the future. Twenty-four entities generously hosted the cordial event including the Rocky Mountain Land Use Institute, the ***Colorado*** Water Congress, the Nature Conservancy, the University of Denver's Water Law Review, and the law firm Kaplan, Kirsh, & Rockwell just to name a few. Several of the attendees were Water Law Review former staff, Board members, and contributors.

ISF Program Background

In 1973, the ***Colorado*** legislature integrated instream flow water rights by entrusting the ***Colorado*** Water Conservation Board ("CWCB") with the state's appropriation authority to preserve the natural environment to a reasonable degree. ISF water rights are non-consumptive and in-channel or in-lake uses of water that the CWCB holds to ensure minimum flows on certain reaches of streams and ***rivers*** and in lakes. The CWCB consults with hydrologists, engineers, natural resource scientists, and geomorphologists, among others, to make factual determinations about which lakes and stretches of stream to preserve and improve to a reasonable degree. The IFS Program helps the state protect diverse ecosystems ranging from coldwater fisheries and waterfowl habitat to glacial ponds.

A series of lawsuits challenged the CWCB's authority to appropriate water without diverting it from streams. Several water users claimed that in ***Colorado***, the right to use water requires a physical diversion in addition to the claimant showing the water will be put to a beneficial use. Over time, the ***Colorado*** Supreme Court clarified that ISF appropriation by the CWCB is a legal means of ensuring minimum stream flow to preserve the natural environment to a reasonable degree, the CWCB's ISF water rights are subject to temporal priority under the prior appropriation doctrine and newly appropriated ISF rights are typically junior, and that the CWCB has a fiduciary duty to enforce the use right in the name of the people of ***Colorado***.

***Colorado***'s 1986 legislature recognized the value of marketable water rights for instream flow by allowing the CWCB to accept donations and purchase senior vested water rights. "The board also may acquire, by grant, donation, bequest, devise, lease, exchange, or other contractual agreement… water, water rights, or interests in water...The board may use any funds available to it for acquisition of water rights and their conversion to instream flow rights." In this state, the right holder vests water rights through beneficial use of the water. The 1986 statute permitted the CWCB to convert the beneficial use from the original right holder's use (e.g., agricultural use, irrigation) to the CWCB's use of preserving or improving the environment to a reasonable degree and maintaining minimum stream flows and lake levels.

Since 1973, the CWCB has appropriated over 9,000 miles of stream and roughly 480 natural lakes and acquired over twenty-five water right donations or long-term contracts for water totaling 500 cubic feet per second. That means that by 2014 the CWCB appropriated either junior or senior rights on nearly **[\*399]** one third of the state's perennial streams for preserving and improving the natural environment to a reasonable degree.

The ISF Program's 40th Anniversary Celebration

***Colorado*** Supreme Court Justice Gregory J. Hobbs Jr. welcomed attendees at the ISF Program's fortieth anniversary celebration with his keynote historical overview of the state's water laws. For twenty-three years before joining this state's highest court, Justice Hobbs practiced environmental, land use, and water law. Since 1996, Justice Hobbs served the people of ***Colorado*** on our Supreme Court and plans to retire in 2016. Justice Hobbs read his fortieth anniversary ISF Program poem, "Mother to Daughter." Hobbs spoke enthusiastically about how the advocacy that led to instream flow rights demonstrates our community's common bond: a deep value in ***Colorado***'s ***rivers***, streams, and lakes. He stressed that Coloradans put their hearts, minds, and passions into the water policy shift that the ISF Program embodies. Hobbs submitted that the ISF Program "is a landmark of the integration of the values of the flow into a prior appropriation water law system."

Justice Hobbs explained that the ISF Program came about following an intense pro-development era and represents the paradigm shift of the 1970's, when many people simply wanted to protect what was left of the natural world. During this period the United States legislature enacted the Clean Water Act, the Clean Air Act, the Endangered Species Act, and the Federal Land Policy and Management Act, along with other significant environmental legislation.

According to Justice Hobbs, the central challenge of the ISF right in ***Colorado*** was determining whether the state's water laws allow a use-right without diversion. He explained that the 1975 ***Colorado*** Supreme Court gave deference to the legislature by upholding the ISF law because the CWCB's water right is junior to the senior right holders and does not cause injury to prior water rights. Today, the ISF Program enables the CWCB to protect waterways and improve water quality. Justice Hobbs concluded his introductory remarks by characterizing the ISF Program as "work well-done and work well to be done!"

A Retrospective on the ISF Program at 40

Linda Bassi discussed the ISF Program's accomplishments and moderated the first panel of speakers, which included Patti Wells and Eric Kuhn. After working for the CWCB for a decade, Bassi is now the CWCB's Stream and Lake Protection Section Chief. She has extensive experience with the ISF Program both from her work at the CWCB and in the Attorney General's office representing the Division of Water Resources and the CWCB.

Bassi explained the ISF Program has a multifaceted role in the water community. The program involves the CWCB's (i) coordination with federal agencies to address federal resource protection goals through state-held water rights, (ii) partnerships with water suppliers to enable water projects to move forward while protecting the natural environment, and (iii) collaboration with ***Colorado*** Parks and Wildlife and conservation groups to protect and improve **[\*400]** ***Colorado***'s ***rivers***, streams, and lakes. Bassi's presentation included photos of stunning landscapes and waterways throughout ***Colorado*** that the ISF Program empowered the state to protect through appropriations, acquisition agreements, and donations. Boulder Creek, the ***Colorado*** ***River***, Dead Horse Creek, and Hanging Lake are just a few of the watercourses benefiting from the IFS Program. Bassi noted that Governor Hickenlooper's executive order compelling the CWCB to create ***Colorado***'s first Water Plan ("CWP") directs the CWCB to foster "a strong environment that includes a healthy watershed, ***rivers*** and streams, and wildlife."

Patti Wells discussed the IFS Program's elements that make it work and allow it to endure today. Wells serves as the Denver Water Board's ("DWB") General Counsel as she has since 1991. She also represents the City and County of Denver as a CWCB board member. Wells is a former board member of the Water Quality Control Commission and the ***Colorado*** Water Trust. Mayor Pena appointed Wells as Denver's first female City Attorney.

According to Patti Wells, the ISF Program's two essential elements are its "requirement for balance and the involvement of the public." To demonstrate the balance element, Wells quoted the statute's directive for the CWCB "to correlate human activity with reasonable preservation of the natural environment" and mentioned that over time this phrasing turned out to be brilliant. Wells maintains that the CWCB tends not to engage in extremist, absolutist discussions because the wording of the statute guides the CWCB to consider what is necessary to a reasonable degree.

Wells emphasized the ISF Program's public notice and comment process while comparing the administrative agency setting to litigation. Wells suggested that much of the program's flexibility is because the CWCB makes decisions in a boardroom with public input instead of in a courtroom. The fact that the CWCB's determinations are reviewed under the Administrative Procedure Act is especially significant to Wells because it means that courts usually defer to the CWCB's findings. In addition, when experts appear in front of the CWCB they do not duel each other as they might in a judicial proceeding.

Another strength of the ISF Program, according to Wells, is that the CWCB must have a natural landscape that requires protection in order to acquire rights unlike the federal government's methods of water right acquisition. She used the example of Hanging Lake to illustrate part of the CWCB's decision-making with regards to water rights acquisition. The Board hiked to Hanging Lake and after seeing "the mist in which the Columbine grows" determined that the landscape needed all unappropriated water there to protect that particular environment to a reasonable degree. Wells considers the ISF Program to function well because it is a robust form of state-based environmental protection that enables ***Colorado*** to protect itself from the "heavy hand of the federal government." Wells concluded by commending the ISF Program for its contemplation of all water uses, inherent flexibility, and great results.

Eric Kuhn followed Patti Wells in the first panel of speakers. He is the General Manager of the ***Colorado*** ***River*** Water Conservation District, (the "***River*** District"), a former board member of the CWCB representing the ***Colorado*** ***River*** Basin, and an at-large Inter-Basin Compact Commission ("IBCC") representative. Working for the ***River*** District since 1981, Kuhn **[\*401]** possesses a deep understanding of the work it does in this state. The ***River*** District's charter from 1937 empowers it to "preserve and conserve for ***Colorado***, its ***Colorado*** ***River*** Compact entitlement."

Kuhn outlined the ***River*** District's "evolution" in relation to the ISF Program, explaining that it originally opposed the program, then supported the program, then opposed the program again. Today the ***River*** District works to improve the ISF Program. A future challenge Kuhn detects for the ISF Program relates to how the state should deal with recreational activities. He clarified that providing water for recreation is outside the scope of the CWCB's charge to protect the environment to a reasonable degree but he perceives it as a looming dilemma that requires a broader discussion.

A Forecast for the ISF Program: Its Challenges for the Future

Melinda Kassen, the Principal of WaterJamin Legal and Policy Consulting Services and member of the IBCC, moderated the second panel, which included James Eklund, Drew Peternell, and Amy Beatie. Kassen posed several introductory questions to the panel such as "what new types of water rights could the state create;" "how far should the ISF Program go;" "should we be protecting shoulder flows;" "should we be protecting more than just cold-water fisheries;" "should we be protecting peak flows;" "what else can the state do to protect current flows while looking at warmer, drier times;" "who should be allowed to hold these flows - should it always remain exclusively in the hands of the CWCB;" and "how should the state evolve the program to make it stronger and more meaningful?"

James Eklund, the CWCB's executive director, said, "people think of ***Colorado*** water law as a slow, lumbering beast with little ability to change - but if you step back and squint your eyes a little bit, or maybe a lot, you could get the impression that we actually have the capacity to innovate when the conditions demand it in this state." Eklund submitted that the ISF Program is part of ***Colorado***'s tradition of innovation in water law and policy and asserted that the CWCB's Water Plan is the next step.

To Eklund, the ***Colorado*** Water Plan represents "shaping the future of ***Colorado*** with intention." He warned that without a comprehensive state water plan, we run the risk of chaotic consumption of our most valuable resource in a divided and inefficient way that fails to provide certainty to water users - consumptive and non-consumptive alike. Eklund urged that the Water Plan is crucial for maintaining state ownership and control over our waterways and the habitat the waters provide. He posited that if ***Colorado*** wants to maintain control over its water, then it requires "a way to preserve, improve, and enhance - to a reasonable degree - our ISF Program." Eklund said that the CWCB is in the business of learning more about ***Colorado***'s ***rivers***, streams, and lakes. He believes the future of the ISF Program involves a deeper scientific understanding of the state's water resources that will hopefully lead to an informed and engaged public with access to good facts about water.

Drew Peternell, the Director of Trout Unlimited's ("TU") ***Colorado*** Water Project, followed James Eklund. TU is a national, nonprofit fisheries **[\*402]** organization. TU's Water Project mission is to maintain and restore ***Colorado***'s ***rivers*** and creeks in order to sustain healthy coldwater fisheries. Peternell argued that the future of the ISF Program would increasingly involve the acquisition of senior water rights in order to put water back into depleted streams. Additionally, Peternell urged that the CWCB must address concerns from irrigators since they own the majority of the senior water rights. Peternell understands irrigators' interests because his organization regularly partners with them on projects that mutually benefit agricultural operations and coldwater fisheries. He believes that the state needs to do more to make the ISF Program attractive to irrigators. Irrigators hesitate to participate in the program because they must transfer their beneficial water use to the CWCB. The process leading to the CWCB's acquisition of senior water rights for restoring streams is too difficult, costly, and risky for many irrigators, according to Peternell.

Peternell discussed pending legislation proposed by Senator Gail Schwartz and endorsed it as a way to make the ISF Program attractive to irrigators. Senate Bill 23 would allow irrigators who make water efficiency improvements to transfer the right to the water saved by the efficiency improvement to the CWCB for instream flow use. Otherwise, little incentive exists for irrigators to implement water efficiency measures in ***Colorado***'s prior appropriation system. This would open a new category of water for ISF use to the CWCB. This bill would also incent organizations like TU to finance repairs of irrigators' aging irrigation infrastructure and allow irrigators to modernize their diversion structures more easily, which would ultimately keep more water in the streams. Peternell's emphasis on making it simpler, less expensive, and less risky for senior water rights holders to transfer their water rights to the CWCB for IFS use seems well placed.

Amy Beatie, the Executive Director ***Colorado*** Water Trust ("CWT"), left attendees with a sense of urgency to protect ***Colorado***'s waterways. As a University of Denver Water Law Review founder and current Advisory Board member, former law clerk for Justice Hobbs, and member of the ***Colorado*** Water Congress's Board of Directors, Beatie ardently spreads her passion for water law and policy. Beatie pointed out that the CWT does not have an advocacy or policy agenda. The CWT mainly participates in projects focused on restoring streams in times of drought. Beatie said that even though the CWT does not do policy, its people can still dream about what they want ***Colorado***'s ***rivers*** to look like. Amy Beatie emphasized the "obvious, yet understated power of people." She asked the audience questions about what could be accomplished if every person in the room spent five hours thinking of ways to make the program better and acting upon their ideas. Beatie stressed the power of innovation. Beatie compelled the audience to imagine what the success of the ISF Program looks like and what they could do to make the program better. Beatie then pressed the audience to "stop imagining and let's go out the door and start doing!"

Audience Questions & Conclusion

Both panels fielded questions related to instream recreational water use and recreational in-channel diversions ("RICD"s). Patti Wells expressed concern **[\*403]** about the prospect of legally requiring water providers to deliver recreational flows and said, "I am not sure that those flows are the responsibility of the state to provide." Drew Peternell mentioned the RICD Program and suggested the state should protect recreational values in ***rivers*** that do not currently have RICD protection with a water right or protective measure that goes beyond RICD's. Amy Beatie believes adequate protections for recreational flows are in place because the ***Colorado*** Supreme Court acknowledged recreational use as a beneficial use. Beatie posited to the extent that recreational flows are "important to communities, they may be appropriated just like any other water right for a beneficial use." Justice Hobbs opined on the matter of recreational flows stating, "we should be optimistic." Hobbs does not believe ***Colorado*** needs to amend its constitution to address issues arising from recreational flows because he trusts the minds of the next generation to create new policies that serve all water users.

Some themes emerged throughout the afternoon of speakers as they discussed the ISF Program in the context of ***Colorado*** water law. Speakers stressed the ISF Program's balance and flexibility as its strong points and highlighted ***Colorado***'s role in water rights innovation. The concern about recreational flows and the RICD Program demonstrates the next horizon of innovation for instream water rights. Hobbs', Eklund's, and Beatie's optimism and enthusiasm for the future of water law and policy in ***Colorado*** left many attendees with a smile as they trickled downstairs for the reception.

Emily Dowd

***COLORADO*** WATER CONGRESS ANNUAL CONFERENCE 2014: OUR WATER PLATFORM

Investing in Public Water Education Denver, ***Colorado*** January 29-31, 2014 The ***Colorado*** Water Congress held its annual convention at the end of January at the Hyatt Regency Denver. On the last morning of the convention, Nicole Seltzer, the Executive Director of the ***Colorado*** Foundation for Water Education, moderated a four panel discussion titled "Platform Plank V: Investing in Public Water Education." The discussion focused on effective ways to engage citizens in the water permitting process. Seltzer explained the importance of educating the public to help make them a partner in problem solving. The panelist included Rick McCloud, the Water Resources Manager of the Centennial Water and Sanitation District; David Nickum, the Executive Director of ***Colorado*** Trout Unlimited; Brian Werner, the Public Information Officer of Northern Water; and Lurline Curran, County Manager of Grand County. The four panelists represented a range of perspectives and commented on effective ways to facilitate public input. They each commented on the purpose of public involvement, the issues associated with public communication, and suggested ways to make public communication in the permitting process more effective.

**[\*404]** Rick McCloud of the Centennial Water and Sanitation District spoke of his challenges and victories with public engagement in the Chatfield Reallocation Project, a project aimed at expanding the Chatfield Reservoir. McCloud acknowledge that the federal requirement is the underlying reason for public involvement in the water permitting process. However, his team also realizes that their projects impact people and it is in the organization's self-interest to receive public input from people who have superior knowledge. McCloud admitted that it is often challenging to have meaningful public involvement because there is frequently a great disconnect in communicating some of the fundamental issues of a project. When such disconnect arises, people tend to make untrue conclusions about the plan, he noted.

To ameliorate communication issues, McCloud suggested agencies should engage the public more than the required federal minimum. There should be open, honest, and straightforward attempts to involve the public early because the days of backroom decisions are over. McCloud implemented his suggestions in the Chatfield Reallocation Project. Because Chatfield is such a beloved and highly visited ***Colorado*** park, McCloud said they made it their mission to inform the public early and often so their plans to alter the park would not surprise the park visitors. His team created a public relations program where they handed out flyers to park visitors, posted signs in the park, created a website, and also managed a hotline for people to call and comment about the project. McCloud also stated they held a series of monthly meetings to discuss the mitigation plans for the park, and four out of the five environmental firms found reasons to support the project.

David Nickum of Trout Unlimited represented the public interest group voice among the panelists. He spoke to how groups like his involve citizens in the water permit process. Nickum noted that public interests groups allow a large number of people to organize and let the interest groups publicly reflect their values. He explained that involving the people who live near a proposed project in the permitting process is extremely important. Those are the people who will care the most and give the greatest insight because they see the area on a day-to-day basis.

Nickum also highlighted the lack of dialogue present in the federal permitting process. He stated that the federal requirements provide a "propose and respond" kind of process, where people just submit comments and the agency responds. When asked about potential solutions to more effectively engage the public, Nickum suggested the integrated licensing process is a good model because it frontloads the public input. Getting the public involved early helps navigate what issues require closer study. This process is also beneficial because it encourages public dialogue and helps the agency seem more credible to the public. Additionally, he noted, the more public engagement before triggering the National Environmental Protect Act ("NEPA"), the quicker the NEPA process runs.

Brian Werner of Northern Water has worked with the public agency for 32 years and spoke of his experience with public involvement on the Windy Gap Project. The purpose of public involvement is to figure out how to make projects better. Also, Werner remarked, "the public gets us to a place where we can build the project."

For Werner, the length of permitting process is the most frustrating aspect **[\*405]** with regards to public involvement. He explained the difficulty of keeping the public engaged for ten years on the same project. Werner also discussed the challenges associated with public misinformation. In addition to the public often getting wrong details about a project, citizens do not realize that the federal agencies dictate the process, and state agencies do not have as much leeway and control in the process as the public thinks.

When asked about potential solutions for the public communication struggles, Werner noted that there has to be a better way to do the Environmental Impact Statement ("EIS") process. Werner would like to see a briefer and more simplified process as well as shorter and more easily understandable documents to facilitate public comment. Additionally, Werner thinks that there needs to be more coordination during the comment period because there is a lot of cherry picking by the various agencies.

Lurline Curran, County Manager of Grand County, primarily commented on her experience working with the public on the Windy Gap Project. Public involvement facilitates the permitting process, Curran explained. Once the locals approve a project, the federal process flows more smoothly.

Curran also discussed some of the downfalls of the federal permitting process as well as other challenging aspects with public communication. Specifically, Curran mentioned that the EIS process eliminates the public dialogue. People send in their comments, and although the agency might answer them on one page in their report, the EIS excludes an actual interchange. She believes that Grand County found a solution to the limited dialogue present in the federal setting and created a template for how groups should work with the public. Curran credits the 1041 permitting process with helping achieve necessary dialogue that lets all people feel like the permit issuer heard them. For example, in Grand County when the staff presents their recommendation for a project, the people in the audience get a chance to make statements in response in a town hall setting.

To Curran, the most frustrating part of public communication is trying to determine how to communicate with all groups in a way that they feel secure in a process with lag time between the various steps. To keep the public informed, Grand County developed a list with everyone who wants to receive information about the Windy Gap Project, and sent those individuals updated information. If you really want public input, Curran notes, you have to be willing to take the time to get it.

Despite the varying backgrounds of each panelist, Rick McCloud, David Nickum, Brian Werner, and Lurline Curran all found that public participation, if approached correctly, could enhance the water permitting process.

Elizabeth Kutch Managing Financial Risk to Secure our Water Future

Building on the framework adopted at the first ***Colorado*** Water Congress in 1958, this year's annual convention addressed six important issues affecting the development of the ***Colorado*** Water Plan. The Water Congress refers to each issue as a "plank." The convention featured moderated panel discussions **[\*406]** on each plank, which included (i) ensuring a strong water program for ***Colorado***, (ii) constant reappraisal of the strength of ***Colorado***'s position in respect to its interstate water obligations, (iii) the importance of hydropower to ***Colorado***'s water policy, (iv) allocating funding for flood mitigation, (v) the necessity of investing in public water education, and (vi) ideas for managing financial and political risk in order to fund water projects. Together, these planks serve as the ***Colorado*** Water Congress's "platform for action."

The final panel of the three-day convention tackled the issue of managing financial risk. Mike Brod of the ***Colorado*** Water Resources and Power Development Authority moderated a discussion of how calculated political and financial risks are sometimes necessary to build new water infrastructure.

The first panelist, John Entsminger, General Manager of the Southern Nevada Water Authority ("SNWA"), discussed how SNWA solicits the input of the community before making short and long-term decisions regarding the financing of water infrastructure projects. Formed in 1991, the SNWA addresses southern Nevada's unique water needs on a regional scale. The SNWA also manages the Southern Nevada Water System, which includes facilities used to pump, treat, and deliver ***Colorado*** ***River*** water from Lake Mead to the Las Vegas Valley.

At the beginning of the 1900s, the small community of Las Vegas claimed it had an inexhaustible artesian supply of water in an attempt to persuade people to move there. Eventually, rising population and limited supplies required that the city take significant steps to address growing water shortages. In response, Las Vegas predominantly turned to the ***Colorado*** ***River*** to supplement the city's diminishing groundwater supply.

By 2000, southern Nevada had nearly exhausted its share of water from the ***Colorado*** ***River***. When drought struck in the 2000s, the people of southern Nevada watched as their primary water supply, the ***Colorado*** ***River***, dramatically diminished in flow. From 2000 to 2014, the water level of Lake Mead dropped more than one hundred feet, with current levels around 1,106 feet. SNWA anticipates water levels will drop an additional twenty feet in 2014. Consequently, the first water intake (located at 1,050 feet) will likely be out of service in the near future. When this happens, the second intake (located at 1,000 feet) would be insufficient to continue uninterrupted delivery of water to the Las Vegas Valley. As a result, in 2008 SNWA began installing a third intake at 860 feet. This marvel of engineering, however, comes with an $ 850 million price tag. Entsminger stated that neither federal nor state government showed a willingness to assist in covering this cost, which, of course, placed the financial burden for the project squarely on southern Nevada consumers.

According to Entsminger, the key to gaining community support for water infrastructure projects such as the Lake Mead intake is to involve stakeholders in policy and program directives. In 2012, SNWA created a committee of residents, business owners, school directors, and representatives of the gaming and golf industries to help guide future water resource planning. The task given to this "Integrated Resource Planning Advisory Council" ("IRPAC") was to figure out the best way to allocate costs for the Lake Mead intake and other projects. For example, one of the biggest concerns for the committee was ensuring that Las Vegas' large population of fixed-income seniors could adjust to any proposed increases in their water bills.

**[\*407]** For years, developers essentially subsidized these sorts of water infrastructure projects through new connection and construction fees. When economic recession hit in 2008, these subsidies dried up. For example, in 2005-06, SNWA collected $ 188 million in connection fees from developers. By 2011, this income dropped to $ 11 million. As a result, it became imperative to find new funding sources. In 2012, at the recommendation of IRPAC, SNWA instituted an infrastructure charge that imposed a fee on every water user regardless of their level of consumption.

Entsminger added that, in addition to the infrastructure fee, a significant amount of funding comes from sales taxes, commodity charges, and connection charges. Despite the addition of the infrastructure charge and other fees, SNWA is proud to offer its customers lower water rates than many large metropolitan areas, including Santa Fe, San Diego, Phoenix, and Seattle.

SNWA is also employing conservation measures to address the water shortage. For example, SNWA is currently paying residents to remove turf from their yards. SNWA has spent $ 195 million on this project since 1995. According to Entsminger, conservation is a double-edged sword and an upside-down business model. On the one hand, the water authority has spent millions of dollars encouraging people to stop using the product they are selling. However, in return, SNWA experienced the benefits of reducing consumptive use of the ***Colorado*** ***River*** by one-third even as the population grew by twenty-five percent.

Next, Steve Hogan, Mayor of the City of Aurora, discussed Aurora's approach, which focused less on direct citizen input and more on leaders who are willing to make tough political decisions for the benefit of the city as a whole. Mayor Hogan explained that much of Aurora's past mirrors that of Las Vegas. Aurora draws water from three ***river*** basins and stores it in a dozen different reservoirs in the plains and mountains. In addition, Aurora's water system, like SNWA's, is only about fifty years old.

In 2002, as a result of rapid population growth and a multi-year drought, Aurora found itself with just a nine-month supply in its system. As a result, the Aurora City Council directed Aurora Water to ensure it was capturing all of the water that the city legally owned. The challenge was to find the most sustainable, cost-effective way to deliver water to the city. The result was Prairie Waters, a state-of-the-art water recycling and purification system that allows the city to draw South Platte ***River*** water, which is then filtered through sand and charcoal filters and eventually piped thirty-four miles to a treatment facility. Prairie Waters delivers an additional ten thousand acre-feet of water per year, an increase of approximately twenty percent.

The Prairie Waters Project took five years to complete and cost the city $ 660 million. Much like the Lake Mead project, neither federal nor state government contributed financial support to the project. To pay for the project, the city raised residential water rates and tap fees and also issued $ 450 million in bonds. Unlike SNWA, however, elected officials, rather than water consumers, made most of the decisions regarding how to finance the project.

Hogan pointed out that, unlike some municipal water suppliers, Aurora Water is a part of the city government. This means that eleven citizens sitting on the City Council have control over water policy decisions. According to **[\*408]** Mayor Hogan, while the Prairie Waters project had some community input, overall it was a political decision to go ahead with the project. While Mayor Hogan recalled debates over whether developers should pay their own way, he noted that the city ultimately paid for most of the Prairie Waters Project through increased water rates. The Aurora City Council has since received numerous complaints about increased water rates. According to Mayor Hogan, there are ongoing discussions about water rates in Aurora, but he noted that opinion on what constitutes an appropriate water infrastructure charge changes along with shifts in the city's political landscape.

Hogan further explained that while government staff input and recommendations are important, politics still play an important role in these decisions. Mayor Hogan emphasized the importance of having "project-specific leadership." In other words, having a knowledgeable spokesperson who can deliver accurate information to the public will make these tough political decisions easier on the community as well as on the City Council.

Overall, Entsminger and Hogan provided a good discussion of the differences, but also similarities, of their financial approaches to infrastructure improvements. Their discussion highlighted the major methods of securing funding for such projects, but also exposed the need for each water district or agency to tailor their methods to their specific situation and needs.

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