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# Can we Plan a Better Future?

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Waterman also mentioned a number of projects being implemented along the river, including the successful Rocky Mountain Sheep and Big Horn Sheep restoration projects. He further discussed how the Yuma flood has helped restore wetlands, and the success of the projects encouraging ecological re-growth. Waterman concluded with a challenge to the audience to protect and preserve the Colorado River for future generations.

*Leigh Auerbach*

## CAN WE PLAN A BETTER FUTURE?

Mike Gibson, Vice President of the Colorado Water Congress, began the session on future water challenges by introducing the speakers.

Steve Maxwell, author of *The Future of Water* (American Water Works Association, 2011), gave a presentation outlining trends that will have a significant effect on the future of water. He opened by discussing the unique nature of water and how it essential to life. He explained that there is a fixed amount of water on Earth, and as it becomes scarcer due to factors like population growth and increased standards of living, there will be greater conflict stemming from people's need to obtain water. He also noted that there are increasing problems with not only the quantity of water, but also the quality of the resource throughout the United States.

Maxwell then discussed emerging solutions to these water challenges, including municipal conservation (namely, low-flow appliances and block-tier pricing) and agricultural conservation measures such as center pivot drip irrigation (an irrigation system in which drip hoses are attached to a center pivot sprinkler and dragged along the top of the ground to reduce water use), and laser field leveling (leveling the field to a desired slope using a guided laser beam for better water distribution). In talking about technological advancements, he pointed out that technology alone cannot solve the world's water problems. He stressed that a change in consumer behavior is also essential.

Maxwell next made his predictions for the future of water. He explained that water will increasingly be viewed as an essential factor in agricultural production, and companies will increasingly add the cost of water to their balance sheets. Additionally, people may move from cities like Las Vegas and Tucson to locations where water is more abundant. He stated that water consumption will come to be viewed in a more holistic manner and conservation programs will increasingly focus on the amount of water that goes into producing food and other consumer products ("virtual water"), not just the water that comes out of a faucet.

Maxwell also claimed that the distinction between different "types" of water will fade and the focus will shift to one "concept" of water, rather than individual focuses on clean water, rainwater, groundwater, wastewater, and recycled water. He also emphasized that the price of water will dramatically increase to reflect the true cost of both the water and its de-

livery. He concluded his presentation by advocating that society deal with water in a more market-based and efficient manner, but also in a way that ensures everyone gets what they need to survive.

Eric Hecox of the Colorado Water Conservation Board spoke next. Hecox's presentation addressed how Colorado could develop a statewide water plan and analyzed other states' water plans.

He first discussed the history of Colorado's pending water plan, which is currently still in the planning process. Hecox spoke about several programs including the 1993 Metropolitan Water Supply Investigation, and the 2002 and 2010 Statewide Water Supply Initiatives, explaining that these programs are the foundation for the future state plan. The plans looked at consumptive needs, non-consumptive needs, and available water supply, acknowledging that there is a shortage of water in Colorado, and concluded that the State will need to implement multiple solutions to solve this problem.

Hecox then discussed other states' water plans. He explained that each state's approach to water planning is different, though they all look to conservation as an important factor. He noted that some states also include strategies like reuse, transfers from agriculture, and desalination projects. He mentioned that California approaches implementation of its plan from a programmatic perspective; Texas makes specific project recommendations; and Kansas focuses on policy issues. He noted that Colorado's planning process should proceed by identifying the State's specific future goals and then figuring out how to achieve them.

The session concluded with a panel discussion moderated by John Stulp, Special Policy Advisor to the Governor of Colorado for Water. The panel consisted of Eric Kuhn, General Manager of the Colorado River District; Alan Hamel, Director of the Pueblo Board of Water Works; Steven Vandiver, Manager of the Rio Grande Water Conservation District; Geoff Blakeslee, Manager of Carpenter Ranch and member of the Colorado Water Conservation Board; and Christ Kraft, a Morgan County Dairyman.

Kuhn began by giving a western slope perspective on Colorado's water problems. He stressed that good choices at the outset prevent later problems and said that it is important to understand where the water comes from in order to manage it properly. He also mentioned that cooperation between Denver and the Western slope have generally been good and will continue to be important in the future.

Hamel discussed about the need to get input from various parties and work together to solve Colorado's water problems. He also discussed the importance of water storage for both consumptive and non-consumptive uses.

Vandiver discussed the drought in the San Luis Valley and how the pumping of the area's aquifer needs to be reduced to a sustainable level. He asserted that the aquifer should be used like a reservoir and there should be fees for pumping water from it. He said people have to understand that large amounts of water cannot be moved without causing significant sociological, economic, and environmental impacts.

Blakeslee then discussed the great potential for multi-purpose water projects. He also explained the importance of sustainable funding and the need to secure additional money for water delivery infrastructure.

Kraft spoke from the perspective of the farmer about the need to give everyone an equal voice. He also discussed how water is forgiving in that it eventually cleans itself and will remain consistent in its quantity.

The session concluded with several questions from the audience.

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## THIRTIETH ANNUAL AMERICAN BAR ASSOCIATION WATER LAW CONFERENCE

San Diego, California February 22-24, 2012

### HOT WATER TOPIC: WATER AND SHALE GAS DEVELOPMENT

At the 30th Annual ABA Water Law Conference in San Diego, three professionals with ties to the oil and gas industry presented an interesting discussion on the effects of hydraulic fracturing ("fracking") on water sources.

First to present was Michael Brownell, the Senior Director of Regulatory Affairs at Chesapeake Energy, Inc. Brownell focused extensively on the importance of natural gas in domestic energy production in the United States. He emphasized that significantly less water is used or produced in shale gas hydraulic fracturing compared with almost every other form of energy production. Fracking a well generally takes between three and five million gallons of water per frack, and over the course of a year each well will use roughly 40 million gallons of water. While these numbers seem large, when compared to the water requirements for production of other energy sources, fracking actually uses significantly less water. For example, in the Marcellus Shale area, power producers used the same amount of water as the entire fracing industry uses in a year in less than fourteen days.

Brownell devoted less time to speaking on water quality issues. Water use and pollution are arguably the most controversial part of fracing, but Brownell focused his water-related comments on the extensive evidence that fracing is tightly regulated and that those regulations are effective in addressing water quality issues. For example, he spoke briefly on the specific issue of methane in drinking water, and said that either the water had methane in it to begin with, or that if the well caused the methane, the responsible companies were quick and thorough in remediating the problem, thus showing that existing regulations are adequate.

Kristin Moseley from the law firm of Porzak Browning & Bushong LLC, spoke second and discussed the interaction of law and industry in relation to water produced during fracing. Moseley explained that water produced during fracing is generally considered waste by the fracing in-