

1-1-2011

Water Law Review 2011 Symposium: A Vision for the Future: Balancing Population Growth with Increasing Water Demand; Needs and Demands: What Does the Future Really Look Like?

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Jessica Lin, Conference Report, Water Law Review 2011 Symposium: A Vision for the Future: Balancing Population Growth with Increasing Water Demand; Needs and Demands: What Does the Future Really Look Like?, 14 U. Denv. Water L. Rev. 430 (2011).

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Finally, Jim Holway, Director of Western Lands and Communities Program at the Sonoran Institute, wrapped up the discussion with an overview of water use in the West. Holway defined the driving forces that will be important in the future: population growth, climate change, increasing demands for energy, agriculture, and maintaining the natural environment. The problem in the West, described by Holway, is that the location of water is almost certainly in a different place than the demand for that water.

Holway contends that water managers must embrace and plan for uncertainty in this new era. The twenty to thirty year planning horizons are not enough; plans need to encompass long horizons and include many people with different backgrounds to reach the most comprehensive plan. This concept, Holway described, comes down to democratization. He maintained that local governments wield too much when there should be wider-ranging state standards.

Water infrastructure is very important because it shapes growth patterns of communities. Holway concluded that there should be a comprehensive management plan for water infrastructure that includes system optimization of groundwater, surface water, and effluent use that all comes together under one cohesive plan.

Joseph Norris

WATER LAW REVIEW 2011 SYMPOSIUM: A VISION FOR THE FUTURE: BALANCING POPULATION GROWTH WITH INCREASING WATER DEMAND

Denver, Colorado April 15, 2011

NEEDS AND DEMANDS: WHAT DOES THE FUTURE REALLY LOOK LIKE?

Jacob Bornstein, program manager at the Colorado Water Conservation Board (CWCB), presented the first session of the day on possible solutions to Colorado's growing water demands.

Bornstein began his presentation with the following questions:

- How many of you drink tap water, shower, or do laundry?
- How many of you enjoy skiing and other amenities of the state?
- How many of you come from farming or ranging communities?
- How many of you consume Colorado beef, lamb, produce, and wine?

The purpose of his exercise was to illustrate that water is not just about politics but that it is personal. Because each one of us uses water each day in so many different ways, water is personal and, therefore, contentious.

Bornstein then discussed the role of CWCB in addressing Colorado's water demands. First, he stated that Colorado faces significant and immediate water challenges. Bornstein noted that Colorado expects its population to double within the next forty years, which may result in a significant transfer of water out of the state's agricultural communities in order to satisfy urban needs. This, Bornstein asserted, would not be acceptable, and Colorado, therefore, needs to implement a mix of strategies concurrently to ensure adequate water supply. Next, Bornstein gave an overview on how the CWCB identifies Colorado's water needs. The CWCB works with the nine basin roundtables to define Colorado's consumptive and non-consumptive water needs. Bornstein explained that consumptive needs include water uses for agricultural, municipal, and industrial needs. Non-consumptive needs refer to environmental and recreational needs. The roundtables also look at water availability, as well as projects and methods implemented to meet the identified needs.

As part of CWCB's efforts to address Colorado's water demands, it developed the Statewide Water Supply Initiative 2010 Mission Statement (SWSI 2010). The mission of SWSI 2010 is to meet Colorado's water management objectives by implementing a mix of solutions concurrently. This includes local water projects and processes, conservation, reuse, agricultural transfers, and the development of new water supplies to ensure adequate water for Colorado citizens.

Next, Bornstein shared some key findings from SWSI 2010. First, the report identified 33,000 miles of streams and lakes that have important environmental and recreational attributes, such as endangered species, that the basin roundtables deemed important to protect. The report also showed that only one-third of the 33,000 miles of focus areas has some sort of project and method to protect the attributes. In addition, the CWCB ran statistical analysis to determine the types of attributes that are protected by these projects. Because of these findings, the CWCB worked with government agencies and non-profit organizations to add to the list of seven hundred projects and methods already in place.

Bornstein then discussed two impacts that the projected population growth would have on Colorado's agriculture economy. He noted that by 2050, Colorado could lose 500,000 to 700,000 irrigated acres primarily due to urbanization and urban transfers. Urbanization results from an increase of communities built on agriculture lands. Urban transfers result from the purchase of agricultural water rights and transfer of those rights to municipal water use for Colorado's population. An increase in population would, therefore, result in a decrease of agriculture. Bornstein elaborated on this concern and noted that half of Colorado's population growth results from an increase in births over deaths. He mentioned that some studies have recommended increasing education and job opportunities as a way to slow population growth because a healthy

economy generally results in fewer children.

Finally, Bornstein talked about the relationship between Colorado's population and its water demands. First, he noted that between the year 2000 and 2010, the statewide water usage rate decreased by 18 percent. The reason and permanence of this phenomenon are unknown. He then stated that Colorado currently uses 1.1 million-acre feet per year (afy) of water for its municipalities and industries. By 2050, Colorado will need an additional 600,000 to one million afy of new water. Bornstein concluded his presentation with four solutions that, in his opinion, would best help prevent dire consequences in the State of Colorado. He proposed the following: agriculture transfers, new supply water development, both active and passive conservation methods, and implementing local water projects and processes.

Jessica Lin

SOURCES OF WATER: WHERE WILL OUR WATER COME FROM AND HOW ARE WE GOING TO HARNESS IT?

Eric Kuhn, Colorado Water Conservation District general manager, and Eric Wilkinson, Northern Colorado Water Conservancy District general manager, discussed the future of water supply and demand in the Colorado River Basin, including the past and present multi-state planning efforts and roundtables, possible new water supply sources, and inherent uncertainties with an emphasis on Colorado-specific issues. Both speakers encouraged statewide plans because the majority of scientific studies agree that supply is decreasing, while on the demand side, the population in Colorado is expected to double in the next forty years.

The speakers stressed that the major problem in Colorado is getting the available water to the population. Both speakers pointed out that eighty percent of Colorado's water is located west of the continental divide, while eighty-five percent of the population resides east of that line. In the Colorado River Basin, ninety percent of the natural flow occurs above 9,000 feet in the mountainous regions of Colorado. Further, almost all of the water comes from only five percent of the drainage area. Therefore, efficient use, transportation, and storage are important issues.

Eric Kuhn first discussed the history of the Colorado Compact of 1937 (Compact) and its implications on Colorado's future water availability. The Compact formed a non-state agency to deal with the allocation problems in the Colorado River Basin and split the affected states into upper and lower divisions. Wyoming, Colorado, New Mexico, and Utah form the upper division, and Nevada, California, and Arizona form the lower division. These states agreed to negotiate with each other for the following reasons. On the one hand, the upper division states were expanding more slowly and did not want the