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Colorado River Study Looked to Future But Did Not Open Up 'Law of the River'

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By *Tripp Baltz*

DENVER--In the course of a three-year, \$4 million study on water supply and demand in the Colorado River Basin, the U.S. Bureau of Reclamation and the seven basin states signaled they were ready to hear any and all ideas.

Options and strategies flowed in, ranging from the prosaic to the exotic. Desalination plants in the Pacific Ocean. Pipelines connecting the Mississippi and the Missouri rivers to the Denver metro area. Tankers hauling icebergs and bags of water to Southern California.

However, the study, known formally as *The Colorado River Basin Water Supply and Demand Study*, did not assess one set of ideas: proposals calling for legal and policy changes, many of which concerned the Law of the River, a collection of compacts, treaties, statutes, and court rulings that governs how water in the basin has been allocated for more than 90 years.

'Taking on Too Much'

From the beginning of the study--completed in December 2012 and funded by the Bureau of Reclamation and the basin states of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming--the participants agreed it would be taking on too much to give serious consideration to changing the Law of the River.

"To rewrite or amend the Law of the River was a place we were not willing to go at this time and in the context of the study," said Ted Kowalski, chief of the interstate, federal, and water information section for the Colorado Water Conservation Board, part of the state's Department of Natural Resources. Kowalski was a member of the options and strategies sub-team that helped write the study.

Carly Jerla, operations research analyst for the Bureau of Reclamation in Boulder, and the bureau's manager for the study, told BNA that officials believed it would not be productive “to start taking apart the Law of the River just for the sake of taking it apart.”

“We were all in agreement from the get-go that we were going to reflect on and consider the policy options, but that they were not going to go through a rigorous assessment,” Jerla said. “We all knew that if we started going down that road, we would get sidelined and never get the report done.”

Authorized by the 2009 SECURE Water Act, the study began in January 2010 and was completed last year. It defined current and future imbalances in water supply and demand in the Colorado River Basin for approximately the next 50 years and developed and analyzed adaptation and mitigation strategies to resolve those imbalances.

Participating in and generating the study were federal and state water officials, municipal water district managers, private companies, environmental groups, and Native American tribes.

Drinking Water for 40 Million People

There is much at stake.

The river and its tributaries provide water for 4 million acres of irrigated land, habitat for fish and wildlife, and critical flow for moisture-dependent ecosystems, in addition to 4,200 megawatts of hydropower generation and multiple opportunities for recreation.

The basin is also the primary supply of drinking water for some 40 million people living in an area that stretches from the Rocky Mountains across the Desert Southwest to the Southern California shoreline.

The basins study report, released by Interior Secretary Ken Salazar Dec. 12, projected an average annual supply imbalance--the amount by which demand will outstrip supply--of 3.2 million acre-feet in the basin by 2060. An acre-foot is 325,851 gallons, the average amount of water consumed by two households in a year.

To resolve these projected imbalances, the study received and considered more than 150 ideas for adaptation and mitigation strategies, analyzing them across four broad categories: increasing supply, reducing demand, modifying operations, and governance and implementation. The latter group consisted of ideas and suggestions related to three major categories: water management and allocation, tribal water, and data and information.

The options and strategies sub-team declined to analyze the legal and policy ideas contained in the governance and implementation category, especially when they involved changes to the Law of the River.

The final study report included language acknowledging that “most concepts related to water management and allocation and tribal water have significant legal and policy considerations.”

Included But Not Assessed

The report acknowledged that those concepts were not assessed by the participants. “Where appropriate, these concepts will require future discussions beyond the scope of the study,” it said.

Mechanisms exist for flexible operations in the basin “without destabilizing the Law of the River or triggering lengthy legal battles that would inevitably occur with any attempt to re-allocate the river,” the report said.

“The Law of the River has turned out to have more flexibility in it than is often thought,” Tom Buschatzke, assistant director of the Arizona Department of Water Resources' Water Management Division, told BNA.

Recent additions to the Law of the River, including guidelines forged in 2007 to deal with shortages caused by drought and an international agreement reached last year allowing Mexico to store some of its annual allotment of Colorado River water in the United States, are examples of the law's flexibility, water officials told BNA.

Fear and Respect

When asked if members of the sub-team were reluctant to analyze legal and policy ideas because they respect the Law of the River, fear changing it, or view changing it as too difficult, sub-team member Don Gross told BNA, “All of the above.”

“I don't think the states want to go there,” added Gross, a civil engineer with the Arizona Department of Water Resources.

Opening up the Law of the River would have risked altering its core purpose--setting the water allocations to which each state is entitled. States worry that doing so could result in changes to their current shares.

That fear is more pervasive in the upper basin states of Colorado, New Mexico, Utah, and Wyoming, which do not use up their full apportionment over a 10-year average, relative to those in the lower basin states of Arizona, California, and Nevada, which have used up their allotments as defined under various compacts, agreements, and court orders dating back to 1922.

States in the upper basin are concerned “they won't get as good a deal,” Reagan Waskom, director of the Colorado Water Institute and the Colorado State University Water Center, said.

“Only Nevada sees itself as getting a better deal if the compact is opened up,” he said. “Opening it up would create a lot of uncertainty. In the states there are few people in positions of power who would say, 'Let's toss this up and re-discuss it.’ ”

Changing Allocations

It is likely all three lower basin states would see advantages to changing allocations as defined under the Law of the River, with Nevada “perhaps having the most to gain by some kind of reallocation scheme,” Kowalski acknowledged.

Nevada's original percentage allotment, set in 1928 along with the other lower basin states, was small, in part because of the view at that time about future development and population growth in the region.

“In the 1920s, you had a strong agricultural orientation, and it was deemed that the quality of the soils in Nevada was poor,” said Kay Brothers, former deputy general manager of the Southern Nevada Water Authority and now a consultant to the authority in Las Vegas. “Also, you weren't looking at cities like Las Vegas” coming along, she said.

On the other hand, Brothers said, Nevada is probably the state that has benefitted the most from changes to the Law of the River that have occurred over the years. “It has benefitted greatly from the flexibility inherent to the framework of the law,” she said.

Jerla noted the study was a technical one designed to demonstrate ways to address supply and demand imbalances. “We didn't go into detailed evaluation of the legal and policy options because of their sensitive nature but also because they don't address the imbalances,” she said.

“Undermining some of the key principles would not have been a productive way to move forward,” she added. “If we really wanted to focus on these, we could have easily taken up the entire three years, with all the skeletons that would come out of the closet.”

'Call to Action'

“This was not a decisional document, but it should be considered a call to action,” said Erin Wilson, professional engineer with Wilson Water Group, a water consulting firm.

Douglas S. Kenney, director of the Western Water Policy Program in the University of Colorado School of Law in Boulder, told BNA it was a shame the study chose not to analyze the legal and policy options.

“Shortages mean there is an inevitability of institutional change needed for the river, and I don't know how you avoid it,” Kenney said. “States have been ignoring the underlying legal issues, but they can't go on doing that forever.

“The reservoirs are just too low, and eventually there will be too many parties who say, 'That last drop is mine.' It would be better to look at this now,” he said.

Under some of the most dire modeling scenarios, Lake Powell, which lies in the upper basin straddling Arizona and Utah, goes dry, he said.

“It will take 20 years to work out the legal implications of an empty Lake Powell,” he said. “Why not start that now, rather than waiting for the system to crash?”

“There is a shortage looming on the horizon, and we have to deal with it,” John Shields, interstate streams engineer in the Office of the Wyoming State Engineer, told BNA. “But I don't envision any pathways where we could get there by legal change without somebody taking something away from somebody else.

“That would lead to litigation and turning to a judge with an incomplete set of facts who would make a decision that would make nobody happy,” he added.

Sensitive Legal Issues

The legal implications of the report were indeed sensitive, Kenney said. In addition to declining to assess the legal and policy options, the study included a page-long disclaimer stating that nothing in the study report is intended for use against any of the main basin partners to “evidence legal interpretations of the law of the river.”

Even the negotiations over the disclaimer became prickly, he said. In June 2011 the Bureau and the seven states released an interim report on the study, coming right up against the release deadline because of last minute debate over the disclaimer's wording, Kenney said.

It is the job of the Law of the River, a complex body of laws, court cases, and regulations, to determine how Colorado River water meets the needs of the various agricultural, industrial, and municipal users. The Law of the River also controls how dams and reservoirs are operated in the basin.

Over the history of the Law of the River, water managers have described it in contradictory terms, at times endowing it with a near-reverent, written-in-stone quality, while at other times touting its flexibility and evolving nature.

“I would say the Law of the River is pretty adaptable,” Bill Hasencamp of the Metropolitan Water District of Southern California told BNA. “In the last 10 years, we have made a lot of changes to it.”

Water Banking

The law now provides for states to engage in interstate water banking, at least in the lower basin, Brothers noted. “Arizona is banking water for Nevada's future use,” she said. “The majority of what we have banked, 2.8 million acre feet, is Arizona's unused apportionment. And we paid them for it.”

Water banking and water marketing were elements of at least nine of the roughly 40 governance and implementation options that were received during the study. Water officials in the upper basin states are now quietly engaged in talks over water banking rules for the basin, sources told BNA.

But they were unwilling to do so in the context of the study--again, because of concerns over the implications for the Law of the River, Hasencamp told BNA.

“The states were unwilling to look at some options relating to the law,” Hasencamp said. When it comes to legal matters in the basin, “the states are more conservative,” he said. “The water districts are more cutting-edge and open-minded.”

One idea that met strong resistance from the states was the formation of an informal basinwide stakeholder governance process.

“Any idea about forming a committee having some governance structure, which would result in states turning that authority over to somebody else, is really a nonstarter,” said Wyoming's Shields.

1922 Compact Is Cornerstone

The cornerstone of the Law of the River is the [Colorado River Compact of 1922](#), the first attempt to decide how water in the basin would be allocated, according to the Bureau of Reclamation.

The 1922 Compact defined the relationship between the upper basin

states of Colorado, New Mexico, Utah, and Wyoming and the lower basin States of Arizona, California, and Nevada.

At the time, the upper basin states were concerned that plans for the Hoover Dam and other development projects in the lower basin would, under the Western water law doctrine of prior appropriation, deprive them of their ability to use the river's flows in the future, the bureau said.

Prior appropriation, often referred to as the Colorado Doctrine, sets forth a “first in time, first in right” principle for ownership of water rights. Under the Western water doctrine, water is not tied to the land, and a landowner may not use water belonging to someone downstream whose rights are more senior.

The 1922 compact gave each basin the right to develop and use 7.5 million acre-feet of river water annually, according to the bureau. The approach reserved water for future upper basin development while allowing lower basin development to proceed, it said.

It resulted ultimately in an annual requirement for an 8.23 million acre-foot minimum release from Lake Powell—in other words, a release of upper basin water to the lower basin.

Agreements Shape Law

Over the next quarter century, various treaties, agreements, and acts became part of the law, including a [1944 water treaty](#) that apportioned 1.5 million acre-feet of the Colorado's annual river flow to Mexico.

Other major moments in the law's history include the following, according to the bureau:

- The [Boulder Canyon Project Act of 1928](#) ratified the 1922 compact, authorized the construction of Hoover Dam and related irrigation facilities in the lower basin and apportioned the lower's basin's 7.5 million acre-feet among Arizona (2.8 million acre-feet), California (4.4 million acre-feet) and Nevada (0.3 million acre-feet). The act also authorized the interior secretary to act as the sole contracting authority for Colorado River water use in the lower basin.

- The [Upper Colorado River Basin Compact of 1948](#) created the Upper Colorado River Commission and apportioned the upper basin's 7.5 million acre-feet among Colorado (51.75 percent), New Mexico (11.25 percent), Utah (23 percent), and Wyoming (14 percent). A small part of Arizona that lies within the upper basin also was apportioned 50,000 acre-feet annually.
- The [Colorado River Storage Project of 1956](#) provided a comprehensive upper basinwide water resource development plan and authorized the construction of Glen Canyon, Flaming Gorge, Navajo, and Curecanti dams for river regulation and hydropower production, as well as several projects for irrigation and other uses.
- *Arizona v. California* (3/9/64), in which the high court settled a 25-year dispute over the then-envisioned Central Arizona Project and the apportionments of California and Arizona. The court ultimately ruled that the doctrine of prior appropriation did not apply to apportionments in the lower basin. It also decreed that the interior secretary did not have the authority to deliver water outside the framework of apportionments defined by the law, and it mandated the preparation of annual reports documenting the uses of water in the three lower basin states.
- The [Colorado River Basin Project Act of 1968](#) authorized construction of a number of water development projects, including the [Central Arizona Project \(CAP\)](#). It also made the priority of the CAP water supply subordinate to California's apportionment in times of shortage and directed the interior secretary to prepare, in consultation with the Colorado River Basin states, long-range operating criteria for the Colorado River reservoir system.
- The [Criteria for Coordinated Long-Range Operation of Colorado River Reservoirs of 1970](#) provide for the coordinated operation of reservoirs in the upper and lower basins and set conditions for water releases from Lake Powell and Lake Mead. They were amended in 2005.
- The [Colorado River Basin Salinity Control Act of 1974](#) authorized desalting and salinity control projects, including the Yuma Desalting Plant, to improve Colorado River water quality.

Federal Laws, Tribal Settlements

Several other laws, contracts, documents and court orders have become part of the law since then. Also, the federal Endangered Species Act and various American Indian claim settlements influence

the extent to which water developments and diversions can be used in the basin.

Minute 319, the accord between the United States and Mexico allowing Mexico to store some of its annual allotment of Colorado River water in the United States, also provides for environmental and waterway improvements in Mexico (2013 WLPM, 2/27/13).

The five-year agreement provides for a pilot program allowing for Mexico to store its Colorado River allotment in Lake Mead for future use in addition to water infrastructure improvement projects, funded by U.S. water districts in exchange for a share of the water the projects will save.

Flexibility, Complexity

[Minute 319](#) is another example of the flexibility of the Law of the River but also its complexity. While it was entered into by two parties, the U.S. and Mexico sections of the International Boundary and Water Commission, it also involved input from the Bureau of Reclamation and roughly 15 water agencies and officials in the seven basin states.

Under the agreement, Mexico will leave as much as 1.5 million acre-feet in Lake Mead over five years, raising the surface of the lake by as much as 15 feet, according to Jayne Harkins, executive director of the Colorado River Commission of Nevada in Las Vegas. Raising the level will help ensure that water flows continue from the lake, the primary water source for Las Vegas, according to Harkins.

In addition to long-term water supply benefits for Mexico, a goal of the agreement is to enhance wetlands and riparian environment along the Colorado River valley in that country, she said.

Also under the deal, the Nevada agencies and the Central Arizona Water Conservation District will contribute \$2.5 million each to Mexico over three years beginning in 2013. The Metropolitan Water District of Southern California will contribute \$5 million over the five-year term.

No Interstate Commission

There is no interstate governance commission involving all seven

basin states like the International Boundary and Water Commission comprised of officials in Mexico and the United States.

States, tribes, and federal agencies add to, enforce, and abide by the principles of the law. Representatives of state water agencies, such as the state engineer or departments of water resources, participate in the informal discussions that lead to changes in the law by way of congressional and state legislative action, court rulings, treaties, and compacts.

States in the study group also cast a wary eye on suggestions for mutual forbearance by the upper and lower basins, a voluntary demand cap in the upper basin, and river flow redistribution based on population, Shields said.

With respect to the flexibility of the Law of the River, Buschatzke cited as the most substantive recent addition the interim guidelines approved by the Interior Department in 2007 to develop management strategies during drought and low reservoir conditions.

The *Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead* were designed to provide greater certainty to the lower basin states about the amount of annual water deliveries in future years, particularly under shortage conditions.

Because of a drought that ultimately lasted eight years, the Interior Department applied pressure on the states to participate in the development of new shortage guidelines.

Drought Conditions

The process began when the drought spurred the upper basin states to say to the department, “We want to release something less than the 8.23 million acre feet” required under the Law of the River, Kowalski said.

Against this background, then-Interior Secretary Gale Norton initiated a public process in May 2005 to develop additional operational guidelines and tools for drought conditions in the basin.

While water storage in Lake Mead, Lake Powell, and other reservoirs afforded great protection from drought, the basin needed detailed, objective operational tools so the department and the states could make informed decisions if shortages caused reservoirs to continue to dwindle, Norton said.

The states were challenged to craft the new guidelines in the context of the Law of the River, Brothers said. “Norton basically said, ‘You work it out, or I’ll work it out for you,’” she said.

“The 2007 guidelines are a great example of change that allows the lower basin states to store water in Lake Mead and have it delivered at a later time,” Jerla said. “If you had suggested it to someone 20 years ago, they might have said, ‘That’s crazy, and the Law of the River won’t allow that to happen.’”

The experience showed “we can find flexibility in the Law of the River, avoid litigation and fights, and avoid opening up the compact,” Buschatzke said.

“The 2007 guidelines were a huge change,” Jennifer Pitt, director of the Colorado River Program at the Environmental Defense Fund in Boulder, Colo., told BNA. “But for some people, they did not go far enough.”

'Age of Limits'

The necessity of change “tends to reflect where the basin is in water use and the perception of whether or not we are in an age of limits,” Pitt said. “The Law of the River has changed over time and will continue to change over time.”

“This report was not the end-all, be-all, but a report for this point in time,” Hasencamp said. “In the future there will be more willingness to look at all the things we didn’t look at with this study.”

Ignoring the legal issues could ultimately put the upper basin states at the biggest risk, Kenney said.

“If you avoid having this conversation and you wait until the system crashes, that’s when the lower basin states will use their political

muscle to go to Congress, and Congress will impose a solution to their liking,” he said.

“My money's more in California than on Wyoming,” he added.

Supply and demand solutions must be accompanied by legal solutions, he said. “Even if you start bringing in icebergs and building pipelines, the legal issues are still there,” he said. “You put new water in the system, and you still have to decide: Whose water is it?”