

The Colorado River Water Users Association (CRWUA) held its 2014 Annual Conference in Las Vegas, Nevada on December 10-12. David Modeer, CRWUA President and General Manager of the Central Arizona Project (CAP), provided a keynote address. CRWUA adopted a package of resolutions covering, among other topics, the Endangered Species Act, invasive species management, U.S. Bureau of Reclamation water and power facilities maintenance and operations, salinity control, settlement of Indian reserved water rights, Interior's WaterSMART initiative, potential climate change impacts, hydro-power allocations and operations, removal of uranium mill tailings, and participation in discussions with Mexico regarding the Colorado River Delta and other international agreements.

On December 12, Michael Connor, Deputy Secretary, U.S. Department of Interior, was a featured speaker. Connor noted that his former position as Commissioner of the Bureau of Reclamation was a personal highlight of his career and he continues to focus on water issues. He said the current drought in the Colorado River Basin and California, the worst in 1,200 years, has been "sobering and exhausting for many water managers." He also announced the posting of a draft 2015 Drought Plan for California's Central Valley Project to provide some operational flexibility to maximize water supplies, while protecting "incredibly important" environmental and water quality needs in the Sacramento/San Joaquin River Bay-Delta area. He added recent storms have led to flows of up to 80,000 cubic feet per second (cfs), allowing for maximum pumping from the Delta.

Connor also mentioned President Obama's personal interest and involvement regarding the drought, having met in February 2014 in California with Governor Jerry Brown and in Washington, D.C. with a bipartisan group of eight governors. He further expressed appreciation for Nevada Governor Brian Sandoval's WGA Drought Forum Initiative (see WSW #2117). He also addressed the President's Climate Action Plan and National Drought Resiliency Partnership (NDRP), as well as the increased spending authority for WaterSMART grants, the Administration's Open Water Data Initiative, and tribal water settlements, including the recently authorized Hualapai agreement. Connor also touched on negotiations with Mexico, and noted U.S. investments in water conservation in Mexico, as well as a number of issues in California, including the State's 4.4 million acre-feet (Maf) Implementation Plan, its Quantification Settlement Agreement, and the Salton Sea.

Connor's presentation was followed by a panel of Mexican and U.S. officials who discussed collaborative efforts that have led to landmark agreements to better manage Colorado River water supplies and share both shortages and any future surplus supplies. Dr. Felipe Arreguin Cortes, with Mexico's National Water Commission, reported that the dialogue and process has been a success in itself. "It has been a learning experience for all of us, and provides a framework for future cooperation." He specifically noted the recent release of some 100,000 af creating a "pulse flow" that temporarily supplied water for environmental restoration efforts in the Colorado River Delta and the Gulf of California, which has been recognized worldwide by environmental advocates. He declared, "To the Mexican Government, the condition of the Colorado River is of great concern.... We recognize that this may be the challenge of a lifetime.... We have a lot of work ahead of us, and the clock is ticking."

On December 11, there were a number of diverse speakers and panels on various topics. Addressing the sustainability of basin water supplies, Tom McCann, CAP Deputy General Manager asked, "What is sustainability?" John Entsminger, General Manager, Southern Nevada Water Authority (SNWA), defined sustainability as achieving equilibrium or a balance between supply and demand, with a tolerable risk of shortage, while adapting to change. What maybe a "tolerable risk," will vary by basin, state and sector of use. As the level of Lake Mead drops, it threatens two current intakes for the water system serving the Las Vegas Valley and 70% of Nevada's population. Therefore, in 2008 SNWA began constructing a \$1.5B third intake, tunneling under the reservoir through solid rock some 2.5 miles, to ensure it is able to draw water should the lake level drop as low as 1,000 feet above sea level, which would essentially be a dead pool. This enormous undertaking involved 143 barge trips transporting over 1,000 truckloads of concrete off shore. Once completed and connected with the existing Intake No. 2, water will be conveyed to existing treatment facilities and wholesale customers. However, the project only ensures access to Nevada's current entitlement and will produce no new water.

Terry Fulp, Lower Colorado Regional Director, U.S. Bureau of Reclamation, noted that the Upper Colorado River Storage Project units, together with Lake Powell and Lake Mead, have the capacity to store four times the average annual flow of the river. Over the past 15 years, reservoir levels have dropped from 95% of capacity system-wide to 50% of capacity, with Lake Powell currently at 49% and Lake Mead at 40%. Lake Mead continues to drop. Lake Powell releases and inflows from lower basin tributaries average about 9.0 Maf annually, with releases of 9.6 Maf for downstream uses, and losses from evaporation of about 600,000 af, leaving an annual deficit of 1.2 Maf. This has been the driest 15-year period of record ever recorded, including 1,200 years of reconstructed paleoclimatological records. Declining water levels also threaten hydropower supplies and related revenues for operation and maintenance expenses at Hoover Dam. Every ten foot drop in the reservoir costs approximately \$1M for replacement power, due to reduced generation efficiency. Arizona Power has lost 25% of its hydropower allocation.

A separate panel addressed conservation and augmentation opportunities. Of particular interest was the release of the findings of a 10-year \$15M study of weather modification sponsored by the Wyoming Water Development Commission to provide a systematic scientific and statistically valid analysis of snowpack augmentation efforts. Using three different mountain ranges, including paired control areas, this long-term study provided data that was independently evaluated by the National Center for Atmospheric Research (NCAR). The study was designed to address sampling issues raised in the past by the National Research Council, which called into question the validity of augmentation claims from disparate and scientifically uncontrolled cloud seeding operations. NCAR's initial analysis found no statistically significant increases in snowfall. However, upon further review, focusing on those portions of the study areas with the most data (given the overall sparse coverage achievable with a limited number of generators), NCAR concluded that a reasonable estimate of the effectiveness of operations was about a 10% increase in snowfall over the targeted areas (measured by tracking deposition of the silver iodide used in seeding).

On December 10, a panel on the proposed Clean Water Act Rule defining Waters of the United States expressed general alarm with the proposal. During the panel, CAP attorney David Johnson and Deborah Freeman, an attorney with Trout, Raley, Montano, Witwer & Freeman in Colorado, gave an overview of the rule's provisions and their concerns about potential onerous impacts. Don Parrish, American Farm Bureau, declared, "This is not business as usual. This is land use planning. If there is any evidence of any connection or any land on which water leaves a mark, it would be under EPA's jurisdiction. Volume, frequency and duration do not matter." He stated that if you read the fine print, "Water is optional to assert jurisdiction," adding that there are also implications for National Pollutant Discharge Elimination System (NPDES) permitting. A principal from WaterJamin LPC, Melinda Kassen, defended the rule. In response to questions regarding the expansive nature of the proposed rule, she suggested that definitions of "waters of the State," were just as comprehensive if not more so.

Other panels over the 3-day meeting covered environmental restoration and ecological compromise, next steps for a basin study undertaken by Reclamation to evaluate supply and demand in the face of a changing climate, and a voluntary shortage sharing agreement for Navajo Reservoir with representatives from the State of New Mexico, Reclamation, Navajo Nation and Jicarilla Apache Nation. A panel composed of members of the boards of the CAP, Colorado River District, Metropolitan Water District of Southern California, and SNWA discussed setting policy for success in challenging times.

There were numerous side meetings with various individuals and interests, including a well-attended meeting of the Upper Colorado River Commission. The latter included a number of presentations on salinity control efforts, weather modification, emergency drought contingency operations, and endangered species recovery. Jennifer Gimbel, Principal Deputy Assistant Secretary of the Interior for Water and Science, addressed the Commission. Of note, the Commission expressed support for a Colorado Systems Conservation Agreement involving temporary agriculture to urban water transfers, and other demand management and water supply augmentation efforts. The Commission also approved resolutions of appreciation for Larry Walkoviak, retired Upper Colorado Regional Director, Bureau of Reclamation, and outgoing New Mexico State Engineer, Scott Verhines, while welcoming the new New Mexico State Engineer, Tom Blaine.