**GUEST OF THE MONTH**

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**BILL HASENCAMP, MWD MANAGER OF COLORADO RIVER ACTIVITIES**

**CAN THE COLORADO RIVER MEET THE FUTURE NEEDS OF THE AMERICAN SOUTHWEST?**

**Summary by Robert Yoshimura**

Bill Hasencamp is a former DWP employee who subsequently moved to the Metropolitan Water District of Southern California (MWD) with a brief stop at Contra Costa Water District in between. For the last 22 years, he has been in charge of managing the water rights and other issues on the Colorado River on behalf of MWD. His presentation included a brief history of the MWD, which was created specifically for the purpose of bringing Colorado River water to Southern California. MWD still considers its water rights on the Colorado River to be its most valuable resource.

During the span of his career, Bill has been involved with all three major sources of imported water to Southern California (Los Angeles Aqueducts, State Water Project, and Colorado River) and many of the issues associated with them. During the 1990s, all three aqueducts flowed full most of the time and provided a constant and reliable supply of water year in and year out. That, unfortunately, is no longer the case.

The California Aqueduct has delivered less than 50% of MWD’s contracted allocation over the last 20+ years and only 30% for the last 10 years. While climate change is likely responsible for those flow reductions, had the Delta Tunnel Project been built, much of the water that discharged to the ocean during major storm events could have been diverted to Southern California and alleviated much of the shortages we have experienced recently. As it stands, this year’s allocation is only 15% of the contracted amount pending further accumulations of snowpack later this spring.

Similarly, Los Angeles Aqueduct deliveries have been curtailed significantly because of efforts to save Mono Lake, prevent dust on Owens Lake, and for diversions to other environmental mitigation projects in the Owens Valley. During those 20+ years when various issues befell both the State Water Project and the Los Angeles Aqueducts, the Colorado River continued to provide at least its full allocation to Southern California. However, the 23-year drought in the Colorado watershed has caused water levels in Lake Mead to decline nearly to the trigger point for curtailment of deliveries to California.

The Colorado River Aqueduct was the brainchild of William Mulholland, the first General Manager of the Los Angeles Department of Water and Power. Shortly after completion of the Los Angeles Aqueduct in 1913, he soon realized that the rapid development and population growth of Southern California demanded another source of water to provide for the needs of the area, particularly outside the City of Los Angeles, into the distant future. Because of the magnitude of such a project, he enlisted the cooperation of twelve other nearby cities who recognized the need for such a project and agreed that cost-sharing would yield an efficient regional benefit. Jointly, the 13 cities formed the Metropolitan Water District of Southern California.

Outside of Los Angeles County, farmers began settling in the Imperial Valley region of Southern California in the early 1900s because of its ideal weather (that enabled year-round growing of wheat) and an abundant supply of water from the Colorado River. A major problem with the River became apparent when it jumped its banks and flowed through irrigation canals to a low spot now called the Salton Sea for 18 months before it was finally redirected back to its original course. Thus, to assure reliability through control of the river, the need for a major dam was recognized. An ideal location for such a dam was Black Canyon, near the city of Las Vegas. However, before the federal government could approve its construction, the other 6 states adjacent to the Colorado River demanded a compact that would assure their rights to the river in the future.

The Colorado River Compact was signed in 1922. The Compact allocated annual amounts of 7.5 million acre-feet (MAF) to the upper basin states (Colorado, Utah, Wyoming, New Mexico), 7,5 MAF to the lower basin states (California, Nevada, Arizona), plus an additional 1.0 MAF to Arizona in recognition of their existing use of the Gila River (a tributary of the Colorado River) by the city of Phoenix, and 1.5 MAF to Mexico for a future treaty that was not signed until 1944. Subsequently, Congress passed the Boulder Canyon Construction Act of 1926 and Hoover Dam was begun in 1928 and completed in the early 1930s. Subsequent agreements further apportioned the water to each state (in MAF per year) as follows: California, 4.4; Arizona, 2.8 (plus 1.0 MAF from the Gila River); Nevada, 0.3; Colorado, 3.86; Utah, 1.71, Wyoming, 1.04; and New Mexico, 0.84. A unique element of the Compact was that the upper basin states were obligated to deliver 7.5MAF annually to the lower basin on a 10-year average, which has now become a point of contention during the 23-year drought.

In the early ‘60s, Arizona proposed construction of the 1.4 MAF per year Central Arizona Project (CAP). However, California objected on the basis that insufficient water was available to Arizona because it was already using 1.3 MAF of Colorado River water annually plus 2.1 MAF of Gila River water which was 1.1 MAF greater than its allocation under the Compact. California sued, but lost at the Supreme Court and Arizona proceeded with the CAP. That decision enabled Arizona to use their full allotment of 2.8 MAF from the Colorado River plus 2.1 MAF from the Gila River for a total of 4.9 MAF from the Colorado River watershed. They thus became the largest user of Colorado River water despite the Compact limitations. This fact has been kept quiet for many years and has resulted in a “structural deficit” where the lower basin can use up to 9.6 MAF each year, which, of course, exceeds the average flow of the river when all allocations (upper basin, lower basin, and Mexico) are considered.

The above decision created a dilemma for California, which had been using 5.1 MAF of Colorado River water since the 1950s due to the surplus available from other states. Because the CAP was a federally funded project requiring Congressional approval, California was able to negotiate an agreement with Arizona by which it would continue to use the surplus until the CAP needed it. Furthermore, Arizona agreed that in the event of a shortage requiring California to cut back deliveries below 4.4 MAF, the CAP’s water rights would be junior to California’s. With that agreement in place, California continued to use 5.1 MAF yearly until 2002, when the driest year in history occurred on the Colorado River watershed and California’s water deliveries were curtailed to the 4.4 MAF limit.

As explained below, MWD was the beneficiary of all the surplus water above 4.4 MAF per year. The problem for MWD, because of their low priority within California for Colorado River water, when the surplus deliveries were eliminated, all the cutbacks had to be absorbed by them. Under the 1931 California Priority System, the Palo Verde Irrigation District (PVID), the Yuma Project, and the Imperial and Coachella Valley Irrigation Districts (IID and CVWD) held the first three rankings for the basic 4.4 MAF allotment of water. Those three agencies were granted a combined 3.85 MAF leaving 0.55 MAF for MWD. Furthermore, under this Priority System, MWD was granted the first right to any additional surplus water available from the Colorado River. Thus, during the period when 5.1 MAF was being delivered to California, MWD received 662,000 AF of additional water which more than doubled its allocation. In 2002, because of the drought, MWD essentially lost 662,000 AF of water overnight.

To alleviate such situations in the future, MWD negotiated with the irrigation users and arrived at the Quantification Settlement Agreement (QSA) in 2003 that capped the water allocations for each individual irrigation user to replace the shared allocation for all irrigation users that was established in the 1931 Priority System. The capped annual amounts per the QSA are as follows: 1) PVID and Yuma Project – 0.42 MAF; 2) IID – 3.1 MAF; 3) CVWD – 0.33; and 4) MWD – 0.55 MAF.

Once the QSA was in place, MWD began developing the California 4.4 Plan by negotiating conservation measures with IID where MWD pays IID to implement sprinkler irrigation and other methods to save water in exchange for a major portion of the water saved. San Diego County Water Authority similarly negotiated agreements to exchange conservation for saved water. Additionally, the State of California stepped up and agreed to fund the concrete lining of the All-American and Coachella canals to save additional water that would then go to MWD. Those projects required an act of Congress to exempt them from Environmental Impact Documentation because claims that the project would reduce groundwater flow to Mexico would have to be addressed. Thus, the USA avoided setting a precedent that projects in the US need to mitigate impacts in other countries. Another element of the California 4.4 Plan is paying PVID farmers to fallow land in exchange for the water saved by not growing crops.

In 2007, because of the continued decline in Lake Mead storage, the US Department of the Interior (Bureau of Reclamation) approved the Interim Guidelines that established triggers for cutbacks of water to Arizona and Nevada based on the water level elevation of Lake Mead. It also created a concept called Intentionally Created Surplus (ICS) which enabled MWD to store water in Lake Mead in those years when abundant water was available from the SWP or other sources. It greatly increased MWD’s flexibility and storage capacity for managing seasonal variations in water supply. The Interim Guidelines expire at the end of 2025 and negotiations are underway for new guidelines to enable continued use of the Colorado River in the future.

Lake Mead water levels declined significantly in the few years after the 2002 dry year. However, after the 2007 interim guidelines were established, Lake Mead water levels remained above the trigger point for cutbacks to Nevada and Arizona for 13 years and appeared to be stabilized. In that time, California reduced its use of Colorado River water by 30 percent. Then, the hottest and driest period in history (worse than 2002) occurred in the Colorado River watershed between spring 2020 and late fall 2022. Runoff efficiency (the percentage of precipitation that runs off into the river) declined alarmingly to 57% in 2020, 37% in 2021, and 58% in 2022. At the same time, a severe drought also occurred in Northern California resulting in a 5% allocation of State Project (SWP) water for 2022. The Owens River watershed was similarly affected by the drought.

MWD was forced to turn to the Colorado River to compensate for its supply deficit from the

SWP and increased demand from Los Angeles, which, combined with the reduced runoff in the Colorado River watershed, caused the water level in Lake Mead to drop precipitously between 2020 and 2022. It dropped below the trigger points for delivery cutbacks to Arizona and Nevada and briefly touched the trigger point for cutbacks to California in 2022. Adding to the problem was a reduction in releases from Glen Canyon Dam to prevent Lake Powell’s elevation from dropping below the point at which hydroelectric energy could no longer be generated. The situation seemed dire, with most climate-related agencies predicting a worsening of conditions and painting several gloom and doom scenarios.

At that point, the commissioner of the Bureau of Reclamation, Camille Touton, called for a 2 to 4 MAF annual reduction in usage from all the Colorado Basin states. In response, six states other than California sent letters to the commissioner complaining that they are already doing enough to preserve the river and that others need to do more. California, on the other hand, proposed a 400,000 AF yearly reduction for the next three years. Although California was the only state to volunteer a specific amount of water use reduction, all of the other states complained that it was not enough. Thus, it appeared that a consensus resolution to the problem was unlikely to occur.

Fortunately, two things occurred that changed the outlook for a resolution at an opportune time. First, the 2022 Inflation Reduction Act allocated $4 billion for western drought relief. Second, the doom and gloom weather forecasts turned out to be extremely wrong and instead, record precipitation and snowpack in the west resulted in a more-than 30-foot increase in water elevation in Lake Mead by the end of 2023.

In May of 2023, the lower basin states came together to propose a combined 3 MAF reduction in Colorado River water usage through 2026, contingent upon appropriate federal funding. Also included were provisions for additional cuts if needed to protect Lakes Mead and Powell. In early March of 2024, the Bureau of Reclamation (USBR) accepted the proposal, issued its final Environmental Impact Statement on the proposal, approved federal funds, and considered the crisis averted.

Now, the stakeholders in the Colorado River can refocus on the development of a post-2026 set of guidelines for operation of the River to replace the 2007 Interim Guidelines that will expire in 2025. Bill Hasencamp pointed out that contrary to the prevailing narrative, those guidelines were successful in maintaining 30 MAF of storage in Lake Mead from 2007 until 2020 in spite of the ongoing drought. The reason for that success is because lower basin consumptive use has dropped from more than 8.5 MAF in the early 2000s to 5.8 MAF last year. Only during the periods of 2002 to 2007, and 2020 to 2022 did the Lake levels drop significantly due to exceptional dry conditions. It is not known currently if the dearth of flow in the Colorado River during those periods was the result of short-term droughts that will eventually end, or the longer term consequence of climate change that will continue to get worse.

A major issue in developing guidelines for the future is determining what that future will look like. Climate scientists can’t agree on the extent to which Colorado River flows will decline. The anticipated range is from 9 to 14 MAF in the future, which will require responses ranging from extreme at 9 MAF, to moderate at 14 MAF, which is not much different than flows we are experiencing now. Another issue in developing new guidelines is the fact that USBR is the watermaster for the lower basin but not for the upper basin. The upper basin states are watermasters for each state. USBR will have much less control over upper basin operations than they will in the lower basin.

While USBR is hoping for a 7 state solution, the upper basin has not yet agreed to work with the lower basin on the new guidelines. Consequently, the lower basin states have developed a proposal that considers the key issues:

* Address the supply-demand imbalance
* Reductions based on total system contents including all upper basin reservoirs (not just Mead and Powell)
* Two reduction tiers – one to address the lower basin structural deficit, and one to address climate impacts in both basins
* Expand storage in Lake Mead and incentivize conservation

The lower basin proposal is based on the remaining storage in Lake Mead. When Lake Mead is between 100% and 69% full, no cutbacks in deliveries are needed. From 69% to 58%, lower basin cutbacks gradually increase from zero to 1.5 MAF. From 58% to 38%, lower basin agencies will cutback a fixed 1.5 MAF total. Between 38% and 23%, lower AND upper basin states must cutback from 1.5 to 3.9 MAF. Below 23%, all states continue to cutback 3.9 MAF. To address the structural deficit, the lower basin states and Mexico agree to the following cutbacks totaling 1.5 MAF: Arizona, 760,000 AF/year (27%); California, 440,000 AF/year (10%); Nevada, 50,000 AF/year (16.7%); and Mexico, 250,000 AF/year (16.7%). This is a consensus proposal under which California is volunteering more water than legally needed. However, as structured, the proposal reduces litigation risk, decreases risk of unfavorable Legislative action, and maintains MWD’s flexibility to continue negotiating mutually beneficial initiatives such as cost-sharing on their Pure Water Recycling program in exchange for an additional portion of their Colorado River water.

The next steps involve USBR’s collection and review of all submitted alternatives, which are due this month. Notably, the upper basin has submitted a proposal that offers no cutbacks from their four states. Proposals are also expected from environmental organizations and the Native America Tribes. USBR will then prepare a Draft EIS to be published in December, 2024, and obtain legislative actions by mid-2026, when the Final EIS is expected to be published.