Minutes of Meeting
COLORADO RIVER BOARD OF CALIFORNIA
Wednesday, October 11, 2017

A meeting of the Colorado River Board (Board) of California was held on Wednesday, October 11, 2017.

Committee Members and Alternates Present

Dana B. Fisher, Jr., Chairman
Jeanine Jones
James Hanks
Glen D. Peterson
David R. Pettijohn, Vice-Chairman
Jack Seiler
David Vigil
Doug Wilson

Committee Members and Alternates Absent

Norma Sierra Galindo
Christopher Hayes
Hank Kuiper
Peter Nelson
John Powell, Jr.
Mark Watton

Others Present

Steve Abbott
Pablo Arroyave
David DeJesus
Dan Denham
Gail Farber
Bill Hasencamp
Michael Hughes
Ned Hyduke
David De Jesus
Tom Levy
Lindia Liu
Vic Nguyen
Jessica Neuwerth
Autumn Plourd
Angela Rashid
Ivory Reyburn
Lauren Steely
Gary Tavetian
Kimberlyn Velasquez
Michael Yu
Christine Wendel
Jerry Zimmerman

CALL TO ORDER

Chairman Fisher announced the presence of a quorum and called the meeting to order at 10:07 a.m.

OPPORTUNITY FOR THE PUBLIC TO ADDRESS THE BOARD

Chairman Fisher invited members of the audience to address the Board on items on the agenda or matters related to the Board. Hearing none, Chairman Fisher moved to the next agenda item.

ADMINISTRATION

Chairman Fisher asked for a motion to approve the September 13, 2017, meeting minutes. Mr. Pettijohn moved that the minutes be approved, seconded by Ms. Jones, and with unanimous consent, the September 13, 2017 meeting minutes were approved.

Executive Director Christopher Harris asked Board members to review the proposed 2018 Colorado River Board meeting schedule to ensure they don't conflict with other meetings. The meeting dates are often set to coincide with conferences such as the annual Colorado River Water Users Association conference. Mr. Harris then introduced the new Deputy Director, Ms. Gail Farber, an engineer with executive experience working at Caltrans, City of Orange, and most recently, serving almost nine years as the Director of the Los Angeles County Department of Public Works.

COLORADO RIVER BASIN WATER REPORTS

Ms. Rashid reported that Water Year-2018 (WY-18) officially began on October 1, 2017. She reported that as of October 2nd, the water level at Lake Powell was at 3,628.41 feet with 14.78 million acre-feet (MAF) of storage, or 60% of capacity. The water level at Lake Mead was at 1,082.15 feet with 10.19 MAF of storage, or 39% of capacity. As of October 1st, the total system storage was 32.93 MAF, or 55% of capacity, which is about 2.75 MAF more than the total system storage at this time last year. Ms. Rashid reported that the preliminary observed precipitation for WY-2017 was 11.91 MAF, or 110% of normal. The observed April to July inflow was 8.17 MAF, or 114% of normal. For August, precipitation was below normal for the entire Basin, although the month is not a significant-producing water month. For September, precipitation in the Lower Basin was below average while some areas in the Upper Basin were above normal.

Ms. Rashid stated that drought in the western United States, particularly California, has greatly improved. This time last year, nearly three quarters of the State was experiencing some

type of drought condition. Ms. Rashid noted that Montana is currently experiencing severe drought conditions.

Ms. Rashid reported that as of October 2nd, the Upper Colorado River basin reservoirs, excluding Lake Powell, ranged from 76% of capacity at Fontenelle in Wyoming, 93% of capacity at Flaming Gorge in Wyoming and Utah, 97% of capacity at Morrow Point and 88% of capacity at Blue Mesa in Colorado, and 76% of capacity at Navajo in New Mexico.

Ms. Rashid reported that through October 9, 2017, Brock and Senator Wash reservoirs have captured 82,348 AF and 84,923 AF, respectively. She also reported that the excess deliveries to Mexico this calendar year were 15,856 AF as of October 9, 2017. As of October 2, 2017, the total bypassed flows to the Cienega de Santa Clara in Mexico were 77,045 AF.

State and Local Reports

Ms. Jones, representing the California Department of Water Resources (DWR), noted that DWR last week issued a press release that discussed the WY-18 and provided a summary of of WY-17. She reported that the WY-17 was the second wettest on record with respect to statewide runoff, coming in second only to 1983. She noted that the snow pack for WY-17 was not record breaking and explained that although the storms were heavier than in previous years, they were warmer with less precipitation falling as snow. Ms. Jones reported that in 2014 and 2015 California experienced a record for the warmest average temperature and since the 1990s, the State has been in a period of warming temperatures. She stated that although some of the snow accumulation reached 163% of average, it did not compare to the snowfall of 1983.

Ms. Jones noted that within the Central Valley watershed, DWR's eight-station precipitation index set a new record for 189% of average for precipitation. She remarked that during WY-17, the Sacramento Valley received a lot of rainfall, and was similar to WY-1983 in that both were very wet years, but neither were huge flood years due to the timing and patterns of the storms. Ms. Jones noted that the last big flood year was 1996-1997. Ms. Jones continued to compare the WY-17 to previous years by noting that the flood control gates on the Sacramento River have not been opened since the 2005-2006 season because of low runoff. She stated that the opening of the gate was a good indication of how wet WY-17 had been. Responding to a question about whether DWR was able to capture the excess water, Ms. Jones stated that releases were made in the February and March time frame at a time when agencies did not have the capacity to store the water, and as a result, a lot of the water flowed out to the Bay-Delta.

Board member Peterson, representing the Metropolitan Water District of Southern California (MWD), reported that the East Branch system has been at capacity. He also noted that MWD is using more water to aid in replenishing their storage system.

2018 Annual Operating Plan

Mr. Harris provided an update on the 2018 Annual Operating Plan (AOP) process. He stated that based on the August 24-Month Study report, the operational tier for Lake Powell was the Upper Elevation Balancing, which calls for an initial planned release from Glen Canyon Dam of 8.23 MAF and allows for an April mid-year adjustment according to the 2007 Interim Guidelines. Mr. Harris stated that there is a high probability of that adjustment occurring, which would increase the annual release from Glen Canyon Dam to 9.0 MAF for the year. For Lake Mead operations, the Intentionally Created Surplus condition will govern the reservoir's operations and Mexico will be allowed to schedule up to 1.5 MAF for delivery during the calendar year. The final draft AOP and presentation is online on both Reclamation's Lower Colorado and Upper Colorado webpages. He noted that the Secretary of the Interior is expected to approve the final AOP between now and December.

STATUS OF COLORADO RIVER BASIN PROGRAMS

Status of Basin States Principals Discussions

Mr. Harris reported that a Basin States Principals meeting was held in Santa Fe, New Mexico on September 26-27 and shared several slides presented at the meeting. Mr. Harris described the first slide, which illustrates how voluntary water contributions by U.S. and Mexican parties since 2007 have "bent the curve" at Lake Mead, keeping the lake above the Level 1 Shortage tier. Mr. Harris noted that the likelihood of Lake Mead reaching elevation 1025 feet has increased since modeling was done for the 2007 Interim Guidelines and now hovers around approximately 50% under scenarios where the past 28 years of hydrology represent future hydrology. Similarly, the risk of Lake Powell reaching critically low elevations is also significantly higher than was contemplated in the 2007 Guidelines. Mr. Harris noted that this increased risk forms the basis of the current drought contingency plan (DCP) discussions.

Chairman Fisher noted that the Lower Basin's success in using voluntary conservation to avoid shortage at Lake Mead has, for some parties, diminished the urgency of finalizing the DCP and its water conservation requirements. Mr. Zimmerman remarked that DCP discussions are still needed, because of the fairly high likelihood of reaching elevation 1025 feet without the program in place. Mr. Harris and Chairman Fisher both noted that, at elevation 1025 feet, Lake Mead has severely limited capacity for downstream deliveries. Mr. Harris also stated that, at elevation 1025 feet, the Secretary of the Department of the Interior has control of water delivery decisions, potentially without the input of State parties.

Ms. Jones noted that the University of Arizona is currently working on reconstructing the paleohydrology data for the Colorado River, as well as other southern California watersheds.

Mr. Harris reported that the Basin States meeting also included a review of proposed intentionally created surplus (ICS) creation for WY-18, including up to 390,000 AF by MWD, up to 25,000 AF by the Imperial Irrigation District, and up to 42,000 AF by the Southern Nevada Water Authority (SNWA). Mr. Harris noted that a letter from the seven Basin States on MWD's proposed modified 2017 ICS creation plan had been sent to Secretary Zinke and a response approving the modification was on the way.

Mr. Harris also noted that the Upper Basin reported that, over the last three years, approximately 23,000 AF of water had been conserved through the Pilot System Conservation Program. Mr. Harris reported that, through the same program, the Lower Basin has conserved about 110,000 AF of water through the end of this calendar year. Mr. Harris noted that the Upper Basin is looking to focus on fewer but larger projects in future years of the program, potentially with administrative help managing the program from U.S. Bureau of Reclamation (Reclamation). Mr. Fisher added that the Upper Basin had seen greater participation than expected from small operators, an encouraging sign that Upper Basin water conservation doesn't have to target only its largest agricultural agencies.

Status of the Drought Contingency Plan

Mr. Harris reported that the Upper Basin continues to work on the elements of its DCP. The weather modification program is ongoing and the Upper Basin is working on the drought operations memorandum of agreement between the Upper Basin States and Reclamation. Mr. Harris also noted that the third element of the Upper Basin DCP, demand management, still involves a lot of uncertainty.

Mr. Harris reported that the Lower Basin developed a term sheet on its DCP in fall 2016, which is being revisited. The DCP process is also likely to include a companion agreement, which would lay out the responsibilities of the United States and the agreements between the Upper and Lower Basins. Mr. Harris noted that federal legislation may also be sought. Mr. Harris reported that, based on the increasing likelihood of low Lake Mead elevations, completing the DCP before the August 24 Month Study is issued in 2018 would be preferable.

Additionally, Mr. Harris reported that the Basin States principals would meet again on October 23rd to discuss next steps and the schedule for moving the DCPs forward.

Chairman Fisher remarked that under the current Lower Basin DCP framework, California would be contributing volumes of water that would later be recoverable. However, Chairman Fisher noted that recent modeling has indicated that it may take many years for the lake to reach an elevation of 1100 feet, the elevation at which stored DCP water would become available. Chairman Fisher noted that this might be an item to consider adjusting during upcoming DCP

discussions.

Status of Minute 323

Mr. Harris reported that Minute 323 had been executed by the Basin States and federal agencies on September 21st, with the U.S. and Mexico exchanging "entry-into-force" letters in Santa Fe, New Mexico on September 27. Mr. Harris noted that Minute 323 is contemporaneous with the 2007 Interim Guidelines and will expire at the end of December 2026. Mr. Harris also noted that signed copies of the final agreements would be distributed to signatories shortly. Both Chairman Fisher and Mr. Harris remarked on the nice ceremony and celebration accompanying the exchange of letters in Santa Fe.

Status of the Colorado River Basin Salinity Control Program

Mr. Nguyen reported that the Work Group met from September 12 to 14 in Farmington, New Mexico, with the primary purpose of finalizing the 2017 Triennial Review. The purpose of the Review was to evaluate and, if necessary, modify the water quality standards, as well as the plan of implementation for controlling an additional 63,500 tons of salt in the next three years. There was no change proposed for the water quality standards. The next step is for the Forum members to formally adopt the Review at the upcoming meeting in Sacramento and for each state's water quality agencies to then approve and adopt the standards. The report will then be submitted to the U.S. Environmental Protection Agency for their concurrence and adoption.

Mr. Nguyen reported that Work Group members toured irrigation projects in the upper and middle San Juan River areas, particularly the farming operations of the Navajo Agricultural Products Industry (NAPI), which is owned and operated by the Navajo Nation. The Work Group members were also treated to a tour of the Navajo Dam and heard a presentation on the Navajo-Gallup Water Supply Project (Project) at Reclamation's Farmington office. The Project will provide a long-term water supply to the Navajo Nation and the city of Gallup, New Mexico, and will divert 37,300 AF of water annually from the San Juan River basin and convey it via 280 miles of pipelines and pumping plants. Mr. Harris added that the Project has similar Colorado River Compact issues associated with the proposed Lake Powell Pipeline project near St. George, Utah, in which water is delivered from the Upper Basin to a Lower Basin location. This would constitute a Lower Basin use, raising questions about how the water will be accounted for. . Mr. Harris emphasized that interbasin water transfers between the Upper and Lower basins would be precedent setting, and the Upper Basin states would carefully contemplate this matter.

Mr. Nguyen reported that the Work Group heard an update on the Paradox Valley Unit (PVU) EIS process, which identifies and evaluates brine disposal alternatives to replace the existing brine injection well. The three action alternatives under evaluation are construction of a second injection well, implementation of a Zero-Liquid Discharge (ZLD) technology, and construction of evaporation ponds. Demonstration projects for the ZLD technology are being

planned at the PVU site to evaluate the effectiveness of reducing the brine to a solid suitable for disposal. The technology has promise because it would require a smaller footprint than evaporation ponds and may potentially reduce environmental impacts. On the other hand, the disadvantage would be potentially greater energy use. Mr. Nguyen reported that two contractors were recently selected and awarded contracts to do the demonstration projects, and the revised EIS completion schedule would be pushed back a few months. The plan to release the Record of Decision would now be near the middle of 2020.

Mr. Nguyen reported that Mr. Don Barnett, Executive Director of the Salinity Control Forum, recently participated in a Reclamation-led Value Planning effort on the PVU. This effort is required as part of Reclamation's alternative study for the PVU. The purpose of the meeting was to step back and think outside the box to see whether the options being studied in the EIS are adequate. Experts spent three days brainstorming for other possible alternatives, and created a matrix looking at all the factors such as cost effectiveness, land ownership, and environmental impacts to rank viable alternatives. This effort confirmed that the top three options were already the ones being considered in the EIS, with the ZLD technology ranking the highest.

Mr. Nguyen reported that the Work Group also received an update on the Public Private Partnership (P3) initiative to see if there is interest from the private sector to fund water resources projects. Reclamation showcased five projects, two of which may be of interest to the Salinity Control Program—the Yuma Desalting Plant and Paradox Valley Unit. There were 37 responses to the workshop and they were generally supportive of the two projects. Reclamation's next step is to review their internal policy to see if there is opportunity to move forward and to develop a framework for evaluating options.

Mr. Nguyen reported that the Federal Accomplishment Report (FAR) compiles the accomplishments of the federal agencies including Reclamation, Bureau of Land Management, U.S. Fish and Wildlife Service, U.S. Geological Survey, and U.S. Department of Agriculture. The FAR is expected to be completed next week and will be available before the meetings in Sacramento. The Advisory Council will also provide recommendations to the federal agencies on their programs. The federal agencies in turn will prepare responses to the recommendations from the Advisory Council and will provide a report of their responses at the upcoming Advisory Council meeting in Sacramento.

Mr. Nguyen reported that the Forum and Advisory Council will meet on October 23 to 26 in Sacramento. The meeting will include a tour of the Sacramento-San Joaquin Delta and the proposed California WaterFix project. There will be a reception and a dinner cruise on a boat along the Sacramento River.

Mr. Wilson asked for information on how the ZLD technology works. Mr. Harris explained that instead of being discharged into the Dolores River, or injected in the deep well, the brine would move through a series of ponds and precipitate out various concentrated solid materials that

would require disposal. Ms. Jones added that this is not a new technology and has been proposed for use in the past at places like the Salton Sea.

Status of the Glen Canyon Dam Adaptive Management Program

Board Staff Neuwerth reported that the Glen Canyon Dam Adaptive Management Work Group (AMWG) met on September 20th in Tempe, Arizona. Ms. Neuwerth noted that the group's charter had been signed by the Secretary of the Interior, allowing the group to continue operating. The AMWG also approved the FY18-20 Triennial Budget and Work Plan, which will guide research and monitoring below Glen Canyon Dam.

Ms. Neuwerth reported that, following the AMWG meeting, a workshop on nonnative brown trout was held, with the aim of determining why the population had suddenly increased and how it could be managed. Ms. Neuwerth also noted that insufficient sediment had been delivered by tributaries below Glen Canyon Dam to trigger a High Flow Experiment (HFE) this fall.

Mr. Harris remarked that one of the theories for the increasing number of brown trout is the frequent implementation of HFEs. Ms. Neuwerth agreed, noting that HFEs began being regularly implemented in 2012, around the same time that brown trout catches began increasing. In response to a question from Chairman Fisher, Ms. Neuwerth reported that, among other options for brown trout management, targeted angling is being considered.

Mr. Peterson asked whether the Salinity Control Program charter had undergone a similar process as the AMWG charter. Mr. Harris confirmed that it had, and the Salinity Control Program's Advisory Committee had also been recently reactivated.

Status of the Lower Colorado River Multi-Species Conservation Program

Ms. Neuwerth reported that the Lower Colorado River Multi-Species Conservation Program (LCR MSCP) Steering Committee would be visiting several fish hatcheries on October 24th and holding a meeting on October 25th in Las Vegas, Nevada. Ms. Neuwerth noted that the group would be discussing the northern Mexican gartersnake, a threatened species the Steering Committee had moved to add to the Program as a covered species.

ANNOUNCEMENTS

Mr. Harris reported that the U.S. House and Senate are working on appropriations legislation. He indicated that there is no update yet on the nominee for the Reclamation Commissioner, Ms. Brenda Burman, who has been moved out of committee to the full Senate. The nomination of Mr. Ryan Nelson as a Department of the Interior solicitor has also been moved out of committee, and Secretary Ryan Zinke has appointed Mr. Jason Larrabee as Principal Assistant Deputy Secretary for Fish and Wildlife and Parks. Finally, Mr. Harris reported that the Natural Resources Agency recently held a meeting in the Coachella Valley on October 4th to receive

feedback on its latest version of the Salton Sea Management Plan, Phase 1, and requested that comments be submitted by October 27th.

ADJOURNMENT

With no further items to be brought before the Board, Chairman Fisher adjourned the meeting at 11:13 a.m.