

**EXECUTIVE DIRECTOR'S REPORT
TO THE
COLORADO RIVER BOARD OF CALIFORNIA**

September 11, 2019

ADMINISTRATION

Minutes of the June 12th Meeting of the Colorado River Board

A draft of the minutes from the June 12, 2019, Board meeting held in Ontario, California has been prepared and is included in the Board folder for review and proposed adoption during the September 11th Board meeting.

COLORADO RIVER BASIN WATER REPORT

As of September 9th, the water level at Lake Powell was 3,617.75 feet with 13.53 million-acre feet (MAF) of storage, or 56% of capacity. The water level at Lake Mead was 1,083.47 feet with 10.3 MAF of storage, or 39% of capacity. As of September 8th, the total system storage was 32.1 MAF, or 54% of capacity, which is about 3.45 MAF more than system storage at this same time last year.

As of September 3rd, the Upper Colorado River basin reservoirs, excluding Lake Powell, ranged from 85% of capacity at Fontenelle Reservoir in Wyoming; 92% of capacity at Flaming Gorge Reservoir in Wyoming and Utah; 96% of capacity at Morrow Point and 94% of capacity at Blue Mesa Reservoirs in Colorado; and 85% of capacity at Navajo Reservoir in New Mexico.

As of September 3rd, the unregulated forecasted inflow in Lake Powell for Water Year 2019 was 13.2 MAF (122% of normal). The observed April to July 2019 runoff into Lake Powell was 10.41 MAF (145% of normal). The August observed Lake Powell inflow was 0.47 MAF (94% of normal), and the September Lake Powell inflow forecast is 0.39 MAF (94% of normal). The WY-2019 precipitation to date is 114% of normal.

The 2019 August 24-Month Study Report indicated that the most probable end-of-calendar-year 2019 elevation for Lake Powell is projected to be 3,618.56 feet. Pursuant to Section 6.B.1. of the 2007 Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead (2007 Interim Guidelines), the Upper Elevation Balancing Tier will govern the operation of Lake Powell and a release of 8.23 MAF is expected to be made from Glen Canyon Dam for WY-2020. The Upper Elevation Balancing Tier also provides for an opportunity for a mid-year adjustment to Powell's operations based on the April 2020 24-Month Study projection of the September 30, 2020 elevation.

Lake Mead’s most probable projected elevation at the end-of-calendar-year 2019 is 1,089.4 feet (just under the 1,090’ threshold elevation in the Lower Basin Drought Contingency Plan) (LB DCP). In accordance with the August 2019 24-Month Study Report, the LB DCP, and the Minute No. 323 Binational Water Scarcity Contingency Plan (BWSCP), CY-2020 Lake Mead operations will be the Normal/ICS Surplus Condition, with LB DCP and Minute No. 323 water savings contributions being required from Arizona, Nevada, and Mexico. As noted in Exhibit 1, Table 1 of the Lower Basin Drought Contingency Plan Agreement, Arizona and Nevada will contribute 192,000 AF and 8,000 AF, respectively; and in accordance with the Minute No. 323 BWSCP, Mexico will contribute 41,000 AF, for a combined total of 241,000 AF of contributions.

Intervening side-inflows, which enter the river between Glen Canyon Dam and Lake Mead, were significantly below average for both July and August (e.g. July was only 26% of average). Side-inflows were significantly reduced because of limited summer monsoon storm activity in the region.

On September 5th, Reclamation released the August 2019 updated version of the CRSS Five Year Probability table based upon modeling results of the August 2019 24-Month Study Report. The table was last updated in June 2019 to include the DCP and Mexico’s BWSCP. The updated tables indicate a decreased probability of any level of shortage in Lake Mead in 2021 and 2022, which decreased from 6% to 4% and from 26% to 24%, respectively. In addition, the results indicate an increase in the probability of shortage in Lake Mead from 31% to 37% in 2023 and from 37% to 43% in 2024.

**Upper Basin – Lake Powell
Percent of Traces with Event or System Condition
Results from August 2019 CRSS (using the Full Hydrology)
(values in percent)**

Event or System Condition	2020	2021	2022	2023	2024
Equalization Tier (Powell ≥ Equalization [EQ] Elevation)	13	26	24	30	27
<i>Equalization – annual release > 8.23 maf</i>	13	26	24	29	26
<i>Equalization – annual release = 8.23 maf</i>	0	0	0	<1	<1
Upper Elevation Balancing Tier (Powell < EQ Elevation and ≥ 3,575 ft)	87	72	59	53	55
<i>Upper Elevation Balancing – annual release > 8.23 maf</i>	3	39	35	36	32
<i>Upper Elevation Balancing – annual release = 8.23 maf</i>	84	33	24	17	23
<i>Upper Elevation Balancing – annual release < 8.23 maf</i>	0	0	0	0	0
Mid-Elevation Release Tier (Powell < 3,575 and ≥ 3,525 ft)	0	2	17	16	16
<i>Mid-Elevation Release – annual release = 8.23 maf</i>	0	0	0	0	2
<i>Mid-Elevation Release – annual release = 7.48 maf</i>	0	2	17	16	14
Lower Elevation Balancing Tier (Powell < 3,525 ft)	0	0	0	<1	2
<i>Below Minimum Power Pool (Powell < 3,490 ft)</i>	0	0	0	0	<1

Notes:

¹ Modeled operations include the 2007 Interim Guidelines, Upper Basin Drought Response Operations, Lower Basin Drought Contingency Plan, and Minute 323, including the Binational Water Scarcity Contingency Plan.

² Reservoir initial conditions on December 31, 2019 were simulated using the August 2019 Most Probable 24 Month Study.

³ Full Hydrology uses 112 hydrologic inflow sequences based on resampling of the observed natural flow record from 1906-2017 for a total of 112 traces analyzed.

⁴ Percentages shown in this table may not be representative of the full range of future possibilities that could occur with different modeling assumptions.

⁵ Percentages shown may not sum to 100% due to rounding to the nearest percent.

**Lower Basin – Lake Mead
Percent of Traces with Event or System Condition
Results from August 2019 CRSS (using the Full Hydrology)
(values in percent)**

Event or System Condition	2020	2021	2022	2023	2024
Surplus Condition – any amount (Mead \geq 1,145 ft)	0	0	7	13	19
Surplus – Flood Control	0	0	<1	3	3
Normal or ICS Surplus Condition (Mead < 1,145 and > 1,075 ft)	100	96	69	51	38
Recovery of DCP ICS / Mexico's Water Savings (Mead \geq 1,110 ft)	0	9	19	27	32
DCP Contribution / Mexico's Water Savings (Mead \leq 1,090 and > 1,075 ft)	100	70	44	28	19
Shortage Condition – any amount (Mead \leq 1,075 ft)	0	4	24	37	43
Shortage / Reduction – 1st level (Mead \leq 1,075 and \geq 1,050)	0	4	24	29	28
DCP Contribution / Mexico's Water Savings (Mead \leq 1,075 and > 1,050 ft)	0	4	24	29	28
Shortage / Reduction – 2nd level (Mead < 1,050 and \geq 1,025)	0	0	0	8	11
DCP Contribution / Mexico's Water Savings (Mead \leq 1,050 and > 1,045 ft)	0	0	0	<1	4
DCP Contribution / Mexico's Water Savings (Mead \leq 1,045 and > 1,040 ft)	0	0	0	3	3
DCP Contribution / Mexico's Water Savings (Mead \leq 1,040 and > 1,035 ft)	0	0	0	2	2
DCP Contribution / Mexico's Water Savings (Mead \leq 1,035 and > 1,030 ft)	0	0	0	2	2
DCP Contribution / Mexico's Water Savings (Mead \leq 1,030 and \geq 1,025 ft)	0	0	0	<1	<1
Shortage / Reduction – 3rd level (Mead < 1,025)	0	0	0	0	4
DCP Contribution / Mexico's Water Savings (Mead \leq 1,025 ft)	0	0	0	0	4

Notes:

¹ Modeled operations include the 2007 Interim Guidelines, Upper Basin Drought Response Operations, Lower Basin Drought Contingency Plan, and Minute 323, including the Binational Water Scarcity Contingency Plan.

² Reservoir initial conditions on December 31, 2019 were simulated using the August 2019 Most Probable 24 Month Study.

³ Full Hydrology uses 112 hydrologic inflow sequences based on resampling of the observed natural flow record from 1906-2017 for a total of 112 traces analyzed.

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RECLAMATION
Managing Water in the West

Figure 1: Upper and Lower Basin Percent of Traces with Event or System Condition Results from August 2019 CRSS

2020 Colorado River Annual Operating Plan, Third Consultation

On September 5th, Reclamation held the third and final consultation for the 2020 Annual Operating Plan (AOP) in Las Vegas, Nevada. As discussed above, based on the August 2019 24-Month Study Report, the operational tier for Lake Powell is expected to be the Upper Elevation Balancing Tier, with a most probable release of 8.23 MAF from Glen Canyon Dam for WY-2020. The Upper Elevation Balancing Tier provides for the possibility of a mid-year adjustment to the operation of Lake Powell based on the results of the April 2020 24-Month Study report, with the opportunity for balancing the contents of Lakes Powell and Mead by the end of the water year. Based on the result of the August 2019 24-Month Study Report, Lake Mead will be operated under the Normal or ICS Surplus Condition; and up to 1.5 MAF may be scheduled for delivery to Mexico pursuant to the 1944 U.S./Mexico Water Treaty, as further adjusted for water savings contributions as required pursuant to the Minute No. 323 BWSCP.

Reclamation's Final Consultation 2020 AOP Presentation and a copy of the final consultation draft of the 2020 AOP can be accessed on Reclamation's Lower Colorado Region webpage.

COLORADO RIVER BASIN PROGRAM REPORTS

Status of Minute No. 323 Implementation

The Minute No. 323 Environmental Work Group (EWG) met June 27-28 in San Diego, California. The EWG is responsible for overseeing the use of \$18 million for research and restoration and the use of 210,000 AF of water, to be supplied in equal parts by the United States, Mexico, and non-governmental organization (NGOs). So far, no federal water delivery has occurred, and the work group discussed options for the use of federal water in 2020 or 2021. In 2019 and 2020, approximately 360 acres of habitat creation are planned across three different restoration sites.

The EWG met via teleconference call on September 3rd to discuss planned maintenance on the Main Outlet Drain Extension (MODE), which carries saline agricultural drainage flows from the Wellton-Mohawk Valley and Yuma area to the delta region of the Gulf of California where it is discharged into the Cienega de Santa Clara wetland complex. Starting on September 5th, Reclamation will dewater the MODE and redirect flows to the main river channel below Morelos Dam while the canal between the northerly and southerly international boundaries undergoes repairs. Concurrently, Mexico plans to conduct canal maintenance and repairs on sections of the Bypass Drain south of the Southerly International Boundary. This repair work is expected to take approximately 120 days and will be administered through Reclamation's Yuma Area Office.

Reclamation estimates that approximately 35,000 AF of water will be diverted to the largely dry river channel in the Limitrophe reach of the Colorado River during this time and flows to the Cienega will be similarly reduced. Members of the NGO community will be working to monitor impacts to surface and groundwater flow, habitat, and wildlife resulting from these maintenance activities.

The next meeting of the EWG will be held October 17-18 in Tijuana, Baja California, Mexico.

In late-August, the Minute No. 323 Desalination Work Group received a pre-decisional preliminary draft of a feasibility assessment for water desalination opportunities on the Sonoran coast of the Sea of Cortez (Gulf of California). This draft report identifies five potential opportunities for the siting, construction, and operation of desalination plants and conveyance facilities that could provide up to 200,000 acre-feet per year (AFY) of product water to an area near Morelos Dam for delivery to Mexican water users and facilitating an exchange for mainstream water. The draft report indicates that product water conveyance pipeline facilities range in length from 130 miles to as much as 240 miles depending upon the location of the desalination plant on the Sonoran coast.

Additional attributes of the draft feasibility assessment include plant sizing so that each plant could produce up to 100,000 AFY, conveyance pipeline terrestrial routing paths, potential marine impacts related to both saltwater intake and the brine-stream discharge, and power and

energy transmission requirements to operate the plants. The five sites identified are on the Sonoran Coast of the Gulf of California from about 50 miles south of Puerto Penasco to just south of Puerto Libertad.

The Desalination Work Group is in the process of reviewing the report and will provide feedback to the contractor through the binational work group process. Finally, this report does not address the mechanisms and processes associated with the exchange agreements between Mexico and its users, the U.S. and its water users regarding direct delivery or through exchange for Treaty water supplies. It is anticipated that those binational discussions will occur as other feasibility assessments called for under Minute No. 323 are completed and both countries can review and evaluate all potential system augmentation opportunities.

Glen Canyon Dam Adaptive Management Program

The Adaptive Management Work Group (AMWG) of the Glen Canyon Dam Adaptive Management Program met August 21-22 in Flagstaff, Arizona. The group recommended approval of the FY-20 work plan and budget, which is expected to be funded with federal appropriations to Reclamation. Researchers provided an update on the amount of sediment brought into the Grand Canyon by tributaries this summer, which could trigger high flow experiment (HFE) releases from Glen Canyon Dam. Based on low monsoon activity this summer and limited tributary sediment input, a fall HFE is currently unlikely to occur.

Representatives from the U.S. Fish and Wildlife Service (USFWS) reported on the proposed downlisting of two endangered fish found in the area: the humpback chub and the razorback sucker. In fall 2018, the USFWS signaled its intent to propose reclassifying these two fish from endangered to threatened. Based on recent USFWS regulations, the exact protections these species will be afforded once they are reclassified will be described in a separate rule to accompany the downlisting proposals. The proposal to downlist the humpback chub is expected within the next several months.

The AMWG also reviewed the Glen Canyon Dam Adaptive Management Program Guidance document prepared by the Secretary of Interior's designee to the program, Dr. Tim Petty, the Assistant Secretary for Water and Science. This document lays out the Administration's priorities for the group, including continued implementation of the 2016 Long Term Experimental and Management Plan (LTEMP) EIS; development of clear monitoring metrics, resource goals, and objectives; and consideration of experiments that would allow for more frequent spring high flows or increased hydropower production. A copy of the Department's Guidance document has been included in the Board folder materials.

The Technical Work Group of the Glen Canyon Dam Program will meet October 21-22 in Phoenix, Arizona.

Lower Colorado River Multi-Species Conservation Program

The Steering Committee of the Lower Colorado River Multi-Species Conservation Program (LCR MSCP) met via teleconference on June 26th. The Steering Committee approved a resolution adopting the *Final Implementation Report, Fiscal Year 2020 Work Plan and Budget, Fiscal Year 2018 Accomplishment Report*, which looks at a three-year period of past, current, and future accomplishments and expenditures. The final accomplishments report and work plan is available on the LCR MSCP webpage at www.lcrmscp.gov.

Members of the LCR MSCP Steering Committee continue to meet to discuss potential changes to program coverage for changes in flow. The LCR MSCP provides coverage for the environmental effects of changes in point of diversion along the Lower Colorado River, including for the effects of water transfers and water storage in upstream reservoirs such as Lake Mead. Currently, the LCR MSCP change-in-flow coverage is as follows: Hoover Dam to Davis Dam- up to 845,000 AFY; Davis Dam to Parker Dam- up to 860,000 AFY; Parker Dam to Imperial Dam- up to 1,574,000 AFY. The group is preparing to initiate pre-consultation discussions with the USFWS for increasing change-in-flow coverage to 1,574,000 AFY from Hoover to Parker Dams, making coverage for this reach consistent with the flow coverage from Parker to Imperial Dams.

Colorado River Basin Salinity Control Program

Staff participated in the Salinity Control Forum Work Group meeting on August 26-28 in Salt Lake City, Utah. The Work Group reviewed additional information for the 2020 Triennial Review report and received updates on several activities including the Paradox Valley Unit earthquake and EIS, a potential salinity control project at Pah Tempe Springs, and the Water Conservation discussion paper.

The 1972 Federal Water Pollution Control Act requires that at least once every three years the Basin States review water quality standards relating to the salinity of the Colorado River. The states collectively initiated this review under direction of the Forum. The Work Group is reassessing the potential for future salinity control benefits associated with U.S. Bureau of Land Management activities resulting in a decrease in future salinity control estimates. Three model scenarios are being developed to consider the effects of continuing current controls of 1.31 million tons through 2040, 1.58 million tons through 2040, and 2.24 million tons through 2040. Only the more aggressive control scenario of 2.24 million tons shows continued long-term reduction in salinity concentration in Colorado River water.

Reclamation provided an update on the Paradox Valley Unit (PVU) EIS preparation schedule. Reclamation continues work on completing the EIS analyses and coordinating with BLM and DOI solicitors on the review process and EIS content. Reclamation has identified four alternatives to be analyzed in the EIS including: 1) No Action, 2) New Injection Well, 3)

Evaporation Ponds, and 4) Zero Liquid Discharge. The schedule for the EIS remains the same, with the Administrative Draft EIS provided to the cooperating agencies for a 30-day comment period ending in September. The Draft EIS should become available for a 45-day public comment in November to December of this year. The Final EIS is scheduled for release in May of 2020, with the Record of Decision anticipated to be issued in June of 2020.

The PVU remains shut down since March 4th when a Magnitude 4.5 earthquake occurred near the injection well facility. The number and strength of aftershocks experienced at the site is gradually dissipating. Reclamation has been conducting a seismic analysis of the project including stress analysis, seismic hazard, and aftershock analysis. Results of the analysis are expected in late September, after which Reclamation will evaluate options for restarting the project.

The U. S. Geological Survey (USGS) continues to work with Washington County Water Conservancy District to investigate developing a potential salinity control project at the Pah Tempe Springs on the Virgin River east of St. George, Utah. As part of the study effort, the USGS is exploring an existing Reclamation well to assist in characterizing the hydrothermal aquifer properties at Pah Tempe Springs instead of drilling new holes.

The Work Group continues to work on the preparation of a draft Water Conservation discussion paper describing the linkage and potential benefits associated with water conservation activities in the Upper Basin and contributing to salinity control program goals and objectives.

Finally, the Fall Salinity Control Forum and Work Group meeting is scheduled for October 22-23 in Phoenix, Arizona, followed by the Salinity Control Forum and Advisory Council meetings on October 24-25 in Phoenix, Arizona.

Weather Modification Program

The Basin States received final program exhibits for the 2020 Winter Weather Modification Program. Consistent with the June 2018 funding agreement, the Lower Basin states cost-share activities in the Upper Basin that improve water supply conditions in the Colorado River Basin. For the 2020 winter season, Colorado, Utah, and Wyoming will continue implementation of existing weather modification activities with some minor enhancements as following:

Colorado

- Extend operations and support programs upgrades for existing weather modification projects that benefit the Colorado River Basin; and
- Purchase a remote cloud seeding generator for the Western San Juan Mountains program, which will replace a generator that is currently being leased.

Utah

- Fund the extension of existing weather modification projects in Utah;

- Operate, report on, and maintain icing rate meters to support weather modification operations; and
- Fund a third-party study to optimize Utah cloud seeding projects.

Wyoming

- Fund the ongoing Wind River Range weather modification project; and
- Conduct a project optimization study for Wind River Range project not to exceed \$15,000.

Basin States Climate and Hydrology State of the Science Draft Report

On August 21st, the Basin States Climate and Hydrology Workgroup released the preliminary draft State of the Science (SOS) report, prepared by Western Water Assessment (WWA), for review and comment. The purpose of the report is to synthesize and assess the current science on climate and hydrology of the Colorado River Basin. The report is also intended to identify knowledge gaps and uncertainties that exists in the current state-of-the-science.

The WWA is requesting comments from members of the work group to be submitted by Tuesday, September 17th. Additionally, a conference call with representatives of WWA and the Basin States Climate and Hydrology Work Group is scheduled for September 26th. Following this call, WWA will begin preparation of an updated draft of the report and circulate for additional review and comment by members of the work group. Board staff are reviewing the draft report and may submit comments.

GENERAL ANNOUNCEMENTS AND UPDATES

Washington, D.C. Updates

Appropriations Update

The U.S. House and Senate both return from the August Recess on September 9th. While the House has passed 10 of 12 appropriations bills, the Senate has yet to move forward on its bills. The Senate Appropriations Committee will mark up four bills next week including the FY-2020 Energy and Water Bill.

The House has passed its FY- 2020 Energy and Water Appropriations legislation on June 19th, which contains Reclamation and Army Corps of Engineers funding. After, the Senate passes its version, the two chambers will conference their bills to work out the differences before any final funding legislation is sent to the President's desk.

Details of the House Energy and Water bill are as follows:

- \$400M in additional funding for water resources projects, including those authorized in last year's WRDA (the Water Infrastructure Improvements for the Nation (WIIN) Act);

- \$121M for rural water projects above the budget request;
- \$510M, a \$30M increase, for SECURE Water Act;
- \$70M to the Upper Colorado River Basin Fund; and
- \$5M to the Lower Colorado River Basin Development Fund.

Water Reuse Plan

On September 10th, the Environmental Protection Agency will release a draft report on the reuse of wastewater. The draft public comment period for this proposal ended on July 1st. The report, to be unveiled at the WaterReuse Association annual conference, in San Diego, California, will look at changes to policy, financial incentives, information gaps, performance audits, and more.

WGA Army Corps of Engineers Water Supply Rule Concerns

The U.S. Army Corps of Engineers' (USACE) proposed rulemaking, "Policy for Domestic, Municipal, and Industrial Water Supply Uses of Reservoir Projects" (Water Supply Rule) is slated to go into effect in October. The proposed regulations are intended to enhance the USACE ability to cooperate with State and local interests in the development of water supplies in connection with the Congressionally authorized operations of USACE reservoirs. The proposed rule would apply only to reservoir projects operated by the USACE, not to projects operated by other federal or non-federal entities. The Western Governors' Association (WGA) sent a letter to the current OMB Director and White House Chief of Staff, Mick Mulvaney, citing continued concerns with the Rule. WGA is concerned about the preemptive effects on and interference with state laws and regulations governing the management, allocation, and protection of water resources; and advocates that natural flows (waters that would have existed within the state without the USACE reservoirs) must be excluded from any USACE definition of "surplus water," as such waters remain under the states' authority.