

**MONTHLY REPORT TO THE  
COLORADO RIVER BOARD OF CALIFORNIA**

August 10, 2022

**ADMINISTRATION**

Consideration of Application for Water Subcontract from the Lower Colorado Water Supply Project (Action)

*Overview of the Lower Colorado Water Supply Project*

The Lower Colorado Water Supply Act (Public Law 99-655) was enacted by Congress in 1986 as a mechanism for California water users without Boulder Canyon Project Act Section 5 contracts to access small amounts of water for domestic and industrial uses by exchange of up to 10,000 acre-feet of water per year from the Colorado River for current and future uses within California. Constructed by the U.S. Bureau of Reclamation (Reclamation), the Lower Colorado River Water Supply Project consists of four wells and pumping facilities in the Sand Hills area along the All-American Canal in Imperial County. The Project water is intended for domestic, municipal, industrial, and recreational uses only. Eligible Project beneficiaries are limited to “persons or Federal or non-Federal governmental agencies whose lands or interests in lands are located adjacent to the Colorado River in the State of California, who do not hold rights to Colorado River water or whose rights are insufficient to meet their present or anticipated future needs as determined by the Secretary.”

The City of Needles serves as the administrator for the Project to enable eligible water users to subcontract for the use of Colorado River water subject to Project availability. In the subcontract, Reclamation and Needles periodically re-examine the subcontractor’s reasonable and beneficial use of water at 5-year intervals beginning 10 years after the effective date of the subcontract and reduce as necessary the amount of water that may be diverted pursuant to the subcontract. The Board reviews applications for use of Project water supplies and then makes a recommendation to Reclamation as to whether a subcontract should be approved. Since 2001, the Board has received over 650 applications for the use of water from the Project and recommended approximately 5,900 acre-feet of current or future water uses for subcontracting with the City of Needles under the Project. This includes current approved uses of 798 acre-feet and future approved uses of 5,100 acre-feet.

### *Staff Recommendation for Board Consideration*

The Board packet includes proposed Board Resolution 2022-3 recommending a subcontract for Lower Colorado Water Supply Project (Project) water in San Bernardino County, California be offered to the applicant and directs the executive director to forward the application to Reclamation for its review and consideration. The applicant, Ms. Susan McClanahan, is requesting a new contract for 1.0 acre-feet of future use. If the Board recommends approval, a new subcontract with the City of Needles would be developed by Reclamation for the owner at a future point in time. Board staff recommends that the Board approve and adopt Resolution 2022-3 during its meeting on August 10, 2022.

### **COLORADO RIVER BASIN WATER SUPPLY CONDITIONS REPORT**

As of August 8<sup>th</sup>, the surface water elevation of Lake Powell was 3,535.24 feet with nearly 6.15 million-acre feet (MAF) of storage, or 26% of capacity. The surface water elevation of Lake Mead was 1,041.46 feet with 7.08 MAF of storage, or 27% of capacity. As of August 7<sup>th</sup>, the total System storage was 20.07 MAF, or 34% of capacity, which is about 3.89 MAF less than the total System storage at this same time last year.

As of August 2<sup>nd</sup>, storage in the Upper Basin reservoirs, excluding Lake Powell, was 4.49 MAF (68% of capacity), including the following capacities: 96% of capacity at Fontenelle Reservoir in Wyoming; 76% of capacity at Flaming Gorge Reservoir in Wyoming and Utah; 95% of capacity at Morrow Point and 44% of capacity at Blue Mesa Reservoir in Colorado; and 56% of capacity at Navajo Reservoir in New Mexico.

As of August 2<sup>nd</sup>, the July observed inflow into Lake Powell was 0.49 MAF (51% of normal) and the August forecasted inflow is 0.25 MAF (66% of normal). The preliminary forecast unregulated inflow into Lake Powell for Water Year (WY) 2022 is 5.96 MAF (62% of normal). The preliminary observed April through July 2022 unregulated inflow into Lake Powell is 3.75 MAF (59% of normal). To date, WY-2022 precipitation is 99% of normal.

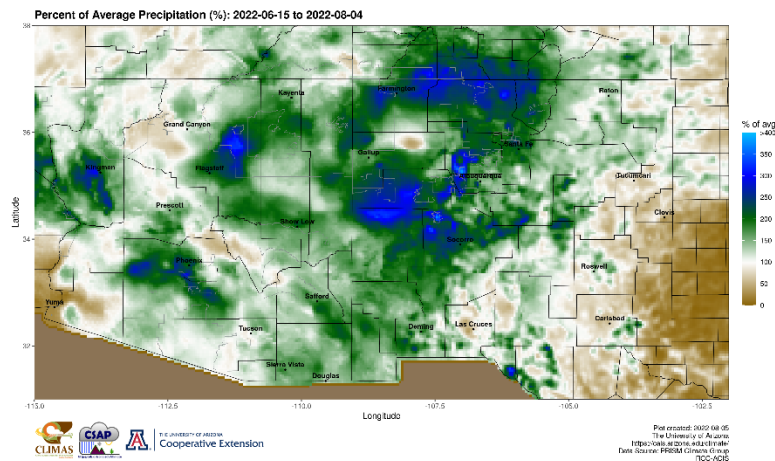
### Southwestern Summer Monsoonal Activity

The National Weather Service (NWS) defines the summer “Monsoon Season” in the Southwest region as the period from June 15<sup>th</sup> through September 30<sup>th</sup>. According to the National Integrated Drought Information System (NIDIS) summer monsoonal precipitation provides between 40% and 75% of Arizona’s and New Mexico’s yearly precipitation.

In 2020, the southwestern monsoonal activity was ranked among the top 10 driest in several areas of Arizona, New Mexico, and southwest Texas, while in 2021, it was ranked among top 10 wettest monsoon seasons for many areas in the region.

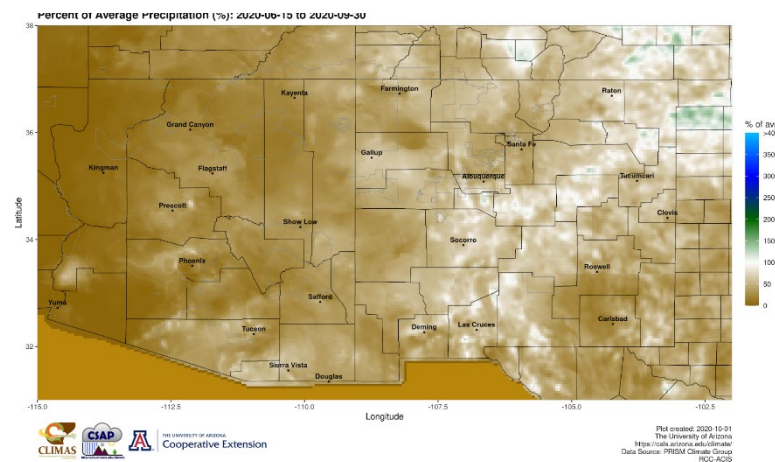
The current monsoonal activity has produced average to above average precipitation throughout the Southwest region. Figure 1 shows the percent of the long-term (1991 – 2020) average precipitation from the June 15<sup>th</sup> to August 4<sup>th</sup>. The shades of dark green and blue indicate precipitation that is above the long-term average, ranging from 100% up to 400%.

**Figure 1: 2022 Monsoon Season: Percent of the Long- Term (1991- 2020) Average Precipitation of Southwest Region (Source: National Weather Service)**



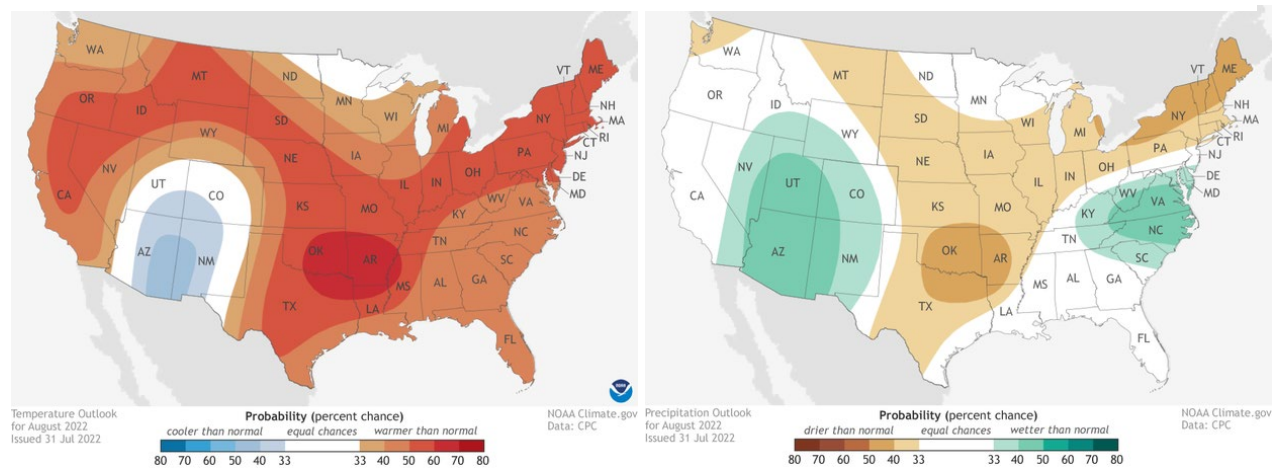
For comparison, Figure 2 shows the percent of the long-term average precipitation for the 2020 monsoonal season, which was much below the long-term average for a majority of the region.

**Figure 2: 2020 Monsoon Season: Percent of the Long- Term (1991- 2020) Average Precipitation of Southwest Region (Source: National Weather Service)**



Below, Figure 3 shows the temperature and precipitation outlook for August. There is a greater probability of cooler than normal to normal temperatures in most of Arizona, New Mexico, Colorado, and Utah during August. In addition, these same areas also have a greater probability of wetter than normal to normal precipitation (Climate Prediction Center).

**Figure 3: August Temperature and Precipitation Outlook (Source: Climate Prediction Center)**



While drought conditions continue to persist throughout the basin, it is encouraging that the 2022 Southwestern monsoon season is providing some relief to the basin. To continue tracking the 2022 monsoon season and learn more about previous monsoon seasons, visit the National Weather Center and/or the University of Arizona’s Climate Assessment for the Southwest (CLIMAS) at the following links:

<https://www.weather.gov/twc/Monsoon> and <https://climas.arizona.edu/>

### 2023 Colorado River Reservoir System Annual Operating Plan—Second Consultation

The second consultation meeting for the development of the 2023 Annual Operation Plan (AOP) for the Colorado River System was held on August 2<sup>nd</sup> via webinar to provide an update of the draft 2023 AOP and accept additional comments from stakeholders. The 1968 Colorado River Basin Project Act (P.L. 90-537) requires that the Secretary of the Department of the Interior prepare a report documenting the actual operations for the previous water year and the projected operations for the upcoming water year. Based on the operating criteria established within the 2007 Interim Guidelines, the August 24-Month Study Report projections for January 1<sup>st</sup> elevations in the following year sets the operational tiers for the coordinated operations of Lakes Powell and Mead.

Based on the July 2022 24-Month Study Report Study, which incorporates the Lake Powell annual operating decision in water year 2022, including operational neutrality in Lake Powell and Lake Mead operations, the projected operational tier for Lake Powell in WY-2023 is the Lower Elevation Balancing Tier, with a most probable release of 7.0 MAF from Glen Canyon Dam.

It was determined that the most probable operational tier for Lake Mead is the Level 1 Shortage Condition. However, as noted above, it is the August 2022 24-Month Study that will determine the official operating tiers for both Lakes Powell and Mead, and this will be updated and documented in the final version of the 2023 AOP. Finally, the draft 2023 AOP currently projects a delivery to Mexico, pursuant to the 1944 Water Treaty, of 1.43 MAF; but this delivery amount may be adjusted based upon Mexico's utilization of its Water Reserve and obligations under Minute No. 323. The draft 2023 AOP can be accessed and viewed online at the websites maintained by Reclamation's Upper and Lower Colorado Basin Regions. The link for the most recent draft of the 2023 AOP is:

[https://www.usbr.gov/uc/water/rsvrs/ops/aop/AOP23\\_draft.pdf](https://www.usbr.gov/uc/water/rsvrs/ops/aop/AOP23_draft.pdf)

The third AOP consultation meeting is scheduled for September 7<sup>th</sup>, 2022, at 10:00 a.m., Pacific Time. Due to the number of new comments received during the second AOP consultation meeting, Reclamation indicated that there may be a need for a fourth consultation to finalize the AOP for 2023.

### Basin States Activities

The seven states continue to meet and discuss the development of additional activities that can reduce the use of Colorado River System water supplies and assist in bolstering storage and protecting critical elevations in both Lakes Powell and Mead. This effort is the result of preliminary modeling prepared by Reclamation indicating between 2.0-4.0 MAF of annual water use reductions would be required to protect critical elevations in Lakes Powell and Mead over the remaining interim period of 2023-2026. Reclamation Commissioner Touton, in her testimony before the Senate's Energy & Natural Resources Committee on June 14<sup>th</sup>, indicated that if the states could not reach consensus on a collaborative effort that Reclamation and the Department of the Interior would take steps to protect the reservoir system.

The federal team and representatives from Arizona and California have met frequently over the past few weeks in an effort to identify and develop a range of water conservation activities that could be implemented, beginning in 2023, to assist in meeting the goals of Reclamation's

proposed protection volumes effort. Additionally, stakeholders in California have engaged in meaningful discussions with the federal team and the State of California to address the mitigation and management of impacts to the Salton Sea associated with the implementation of additional water conservation activities in the Imperial and Coachella Valleys. It is expected that there would need to be an agreement between the State and federal government addressing long-term Salton Sea management sustainability concurrent with an agreement for California's participation in the reservoir system protection volumes effort.

The seven Basin States have also engaged with a working group of the Basin's Native American Tribes, through the Water & Tribes Initiative, in a series of webinar discussions. These discussions have generally revolved around identification of shared goals and objectives, areas of concern, reservoir operations, mitigation activities associated with the current drought and climate change, the proposed interim period protection volumes efforts, and expectations associated with development of the longer-term post-2026 guidelines for Colorado River operations. The seven states and Tribes are expected to reconvene, via webinar, in late-August to continue these important discussions.

## **COLORADO RIVER BASIN PROGRAM UPDATES**

### Colorado River Basin Salinity Control Program Implementation

#### *Colorado River Basin Salinity Control Advisory Council Meeting*

The Colorado River Salinity Control Advisory Council met virtually on July 7, 2022, to discuss program implementation and approve cost-share dollars for new studies, investigations, and research. The Advisory Council's role is to advise the federal agencies in program administration including the Secretary of the Department of the Interior, the Secretary of the Department of Agriculture, and the Administrator of the EPA. During the meeting, the Advisory Council approved funding for a study by the U.S. Geological Survey (USGS) to reassess hydrologic conditions and salinity loading associated with agricultural areas around Green River, Utah. The Advisory Council also approved a study by the USGS to assess salinity loading to the Colorado River in Spanish Valley, Utah near Moab, Utah.

#### *Paradox Valley Unit*

As mentioned at the Board's June 15<sup>th</sup> meeting, on June 1<sup>st</sup>, Reclamation restarted injection of brine at the Paradox Valley Unit (PVU) as part of a six-month test injection plan. PVU has not operated since March 2019 in response to a significant seismic event. When fully operational,

the PVU removed about 100,000 tons of salt per year that would have otherwise entered the Colorado River. Under the test injection plan, PVU is injecting brine at a rate of 115 gallons per minute, equivalent to approximately 5,500 tons of salt control per month (about 66% of the most recent injection capacity). Two months into the test there have been no significant operational issues or seismic events. Figure 4 shows the salt load and flow for the Dolores River during 2022. There is an evident downward trend in the observed salt load since the injection resumed in June.

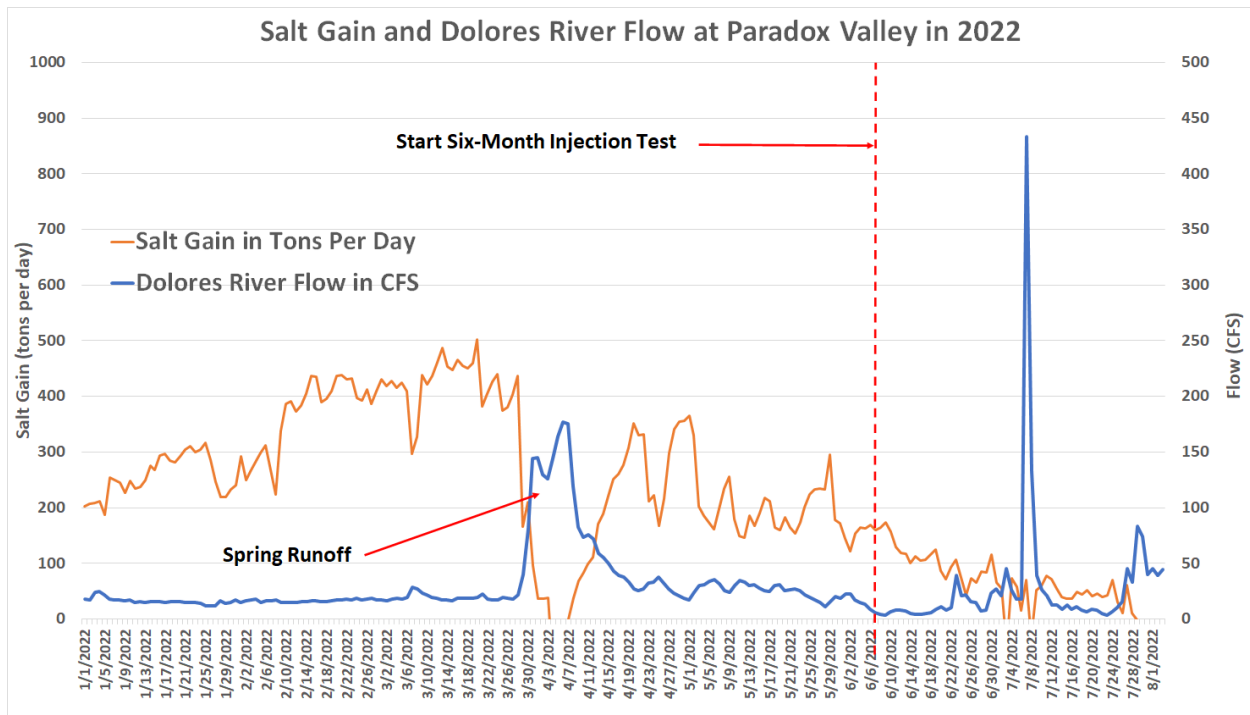


Figure 4. Salt Gain and Dolores River Flow

### Glen Canyon Dam Adaptive Management Program

Board staff participated in a river trip composed of members of the Adaptive Management Work Group (AMWG) July 13<sup>th</sup> – July 22<sup>nd</sup>. Discussion of future planning and direction for the AMWG included consideration of potential updates to the Glen Canyon Dam Adaptive Management (GCDAMP) Program Vision and Principles, how the GCDAMP is meeting the needs of agencies represented on the AMWG, Tribal perspectives regarding Colorado River management and significance, and issues and potential interventions related to the passage of smallmouth bass through Glen Canyon Dam.

## GENERAL ANNOUNCEMENTS AND UPDATES

### Reclamation initiates public input on the development of future Colorado River operations

On June 24, 2022, Reclamation posted in the federal register, a “Request for Input on Development of Post-2026 Colorado River Reservoir Operational Strategies for Lake Powell and Lake Mead Under Historically Low Reservoir Conditions”. Board staff participated in public webinars on July 12<sup>th</sup> and July 14<sup>th</sup>, where Reclamation provided additional clarification on the requested input. The Federal Register notice asks for specific suggestions on the process and the substance of how best to analyze future operations and what those operations should include. It also highlights the changing circumstances in the Colorado River Basin since 2007, including declining hydrology, drought and low-runoff conditions impacted by a warmer, changing climate, inclusivity in Colorado River decision-making and the need for continued operational alignment and partnership with the Republic of Mexico. Written comments on the proposed development of Post-2026 Colorado River Operational Strategies can be sent by September 1, 2022, to [CRB-info@usbr.gov](mailto:CRB-info@usbr.gov). Additional information can be found at <https://www.usbr.gov/newsroom/#/news-release/4248>

### Lake Powell Bathymetry Analysis and Area/Capacity Update

Reclamation has recently updated the storage-capacity data for Lake Powell used in its water supply studies including the 24 Month Study and Annual Operating Plan. During 2017 and 2018, the USGS conducted bathymetric surveys of Lake Powell using a 1-meter multibeam echosounder and lidar, resulting in the development of a new bathymetric dataset for Lake Powell in 2021 (The report is available at: [pubs.er.usgs.gov/publication/sir20225017](https://pubs.er.usgs.gov/publication/sir20225017)). Two previously published studies have estimated the Lake Powell storage capacity: (1) the original, pre-Glen Canyon Dam elevation-area-capacity tables that were calculated from contour maps and (2) a reservoir-wide, range-line bathymetric survey that was completed 25 years post-impoundment in 1986. Both studies utilized the best-available technology at the time but lacked the precision of current surveying methods.

In multiple meetings in late June through July—including a public webinar on July 13<sup>th</sup>—Reclamation updated the Seven States Modeling Team and others on its work updating its area-capacity curves using this new bathymetric data for both modeling and planning of Lake Powell. Reclamation has also communicated about updated bathymetry through the 2023 AOP consultation process, the second of which was held on August 2, as noted above.

The USGS concluded that deposition at the deltas of the sediment-laden Colorado and San Juan Rivers is the primary cause of storage loss in Lake Powell. The new bathymetry has resulted in a “skinnier bucket” – i.e., Lake Powell is narrower than previously thought. Compared to previously published estimates, the storage capacity at full pool (3,702.91 feet elevation) is estimated to be



6.79 percent or 1,833,000 acre-feet less than at the time of construction of Glen Canyon Dam in 1963. The implication of incorporating this change is that both CRSS and the CRMMS 24-Month Study will show higher rates of changes in pool elevations for any given inflow and/or release volume. In the 24-Month Study, for example, releases from Glen Canyon Dam result in a 9-foot lower modeled end-of-period Lake Powell pool elevation compared with the previous bathymetric data. This change is not only due to direct changes in the reservoir shape, but also indirect changes from updated inflow forecasts, which are back-calculated partly from assumptions about Lake Powell's bathymetry. From a planning perspective, this will result in a more conservative end-of-year estimate of elevation when using the 24-Month Study.

#### Water Utility Climate Alliance (WUCA) training

During July 19-21, 2022, Board staff participated in a webinar-based training/workshop organized by the Water Utility Climate Alliance (WUCA; [www.wucaonline.org](http://www.wucaonline.org)) at the behest of the Colorado River Basin Climate and Hydrology Technical Workgroup to “help water sector professionals use climate information in planning.” WUCA is a national alliance of water utilities focused on addressing climate change in urban water systems and includes The Metropolitan Water District of Southern California and San Diego County Water Authority as members. The goals of the workshop were to: “Enhance understanding of the capabilities and limitations of climate science and learn best practices for using it in long-term water agency planning; Understand the different planning frameworks that address deep uncertainty associated with climate change; [and] Learn different communication tools to be able to explain the value and limitations of different planning frameworks to various audiences.”

Board staff participation resulted in a refresher on climate change science, a better understanding of the value and utility of climate models and their derivatives in water system planning, and an overview of the methodological tools available for integrating climate information into water system planning. Recordings and handouts from the training are available at:

<https://www.wucaonline.org/training>

#### Washington, D.C. Report

##### *Nominations*

This week, the Senate confirmed Mr. David Applegate to serve as director of the USGS. Previously, Applegate served as Associate Director for Natural Hazards, overseeing the geologic hazard and coastal and marine programs of the USGS and coordinated the hazard response and planning activities for Reclamation.

### *Fiscal Year 2023 Appropriations*

The House has taken another step in the appropriations process, passing a “minibus” of four bills, including the Energy and Water bill which funds Reclamation.

Overall, the bill provides \$1.891 billion, an increase of \$476.7 million above the budget request including:

- \$75 million for WaterSMART Grants
- \$50 million for the Drought Contingency Plan (DCP)
- \$134 million for the WIIN Act Storage Account
- \$30 million for Drought Response under the WaterSMART Program
- \$12 million for WIIN Act desal projects
- \$20 million for Salinity Control Title I
- \$6 million for Salinity Control Title II

The Senate recently released the text of its twelve appropriations bills which included:

- \$55 million for WaterSMART Grants
- \$40 million for the Drought Contingency Plan (DCP)
- \$134 million for the WIIN Act Storage Account
- \$24 million for Drought Response under the WaterSMART Program
- \$12 million for WIIN Act desal projects
- \$20 million for Salinity Control Title I
- \$6 million for Salinity Control Title II
- \$2 million for Salton Sea Research Project

### *Salton Sea Legislation*

On July 21<sup>st</sup>, the Senate Energy and Natural Resources Committee held a markup which included Senator Padilla’s bill, S. 2693, the Salton Sea Improvements Act. The bill, which passed out of committee on a voice vote, would broaden federal authorities and authorize \$250 million to address the environmental impacts of decreased water availability at the Salton Sea, which has contributed to poor air quality for communities and degraded habitat for wildlife.

### *House Wildfire and Drought Package*

The House recently passed a package of western water and forestry related bills. Bills of note that were included in the package are:

- *H.R. 7612, the Desalination Research Advancement Act (Rep. Levin)*, which reauthorizes Reclamation’s Desalination and Water Purification Research program to support research and development of new desalination technologies to improve water supply availability. The bill also prioritizes funding for research on ways to minimize desalination impacts on aquatic species and coastal resources.
- *H.R. 3877, the Salton Sea Projects Improvements Act (Rep. Ruiz)*, broadens federal authorities and authorizes \$250 million to address the environmental impacts of decreased water availability at the Salton Sea, including poor air quality for communities and degraded habitat for wildlife.

The package also includes:

- Authorization of \$500 million for the Secretary of the Interior to use available legal authorities to prevent key reservoirs of the Colorado River from declining to critically low water elevations.
- Authorization of an additional \$700 million for the competitive grant program created in the Infrastructure Investment and Jobs Act (IIJA) for large-scale water recycling and reuse projects. It also eliminates the IIJA’s five-year sunset on this program to ensure long-term investment in large-scale water recycling projects.
- Authorizes \$50 million for a grant and technical assistance program to help public water systems establish and implement water efficiency incentive programs. And provides \$40 million to assist water systems in detecting and addressing water losses (similar to a bill from Sen. Padilla).
- Authorization for the Colorado River Indian Tribes (CRIT) to lease a portion of its Colorado River allocation to assist Arizona communities. This authority will enable the CRIT to enter agreements to lease or conserve water to support tribal economic development and help address water shortages in the Colorado River Basin, which is currently in its 23<sup>rd</sup> year of an historic drought.

There are several provisions that come directly from Congressman Huffman’s H.R 3404, the FUTURE Western Water Infrastructure and Drought Resiliency Act, including:

- \$600 million for Title XVI water recycling and reuse projects; and
- \$260 million for innovative water desalination projects.

### *Inflation Reduction Act of 2022*

On August 7<sup>th</sup>, The U.S. Senate passed a sweeping \$430 billion bill, the Inflation Reduction Act of 2022, intended to fight climate change, lower drug prices, and raise some corporate taxes. The

action sends the measure to the House of Representatives for a vote, likely Friday August 12<sup>th</sup>, when representatives plan to reconvene briefly during a summer recess. The House is expected to pass the bill, which would then be sent to the White House for Biden's signature.

The bill, passed by the Senate includes \$4 billion for drought relief that will help drought-stricken communities in the Colorado River Basin. This funding will help preserve water deliveries from the Colorado River, which supplies water for 5.5 million acres of farmland and more than 40 million residents in the basin. To maintain this water resource in the face of climate change, the states are working with Reclamation to proactively reduce water usage to keep Lake Mead above critical elevations. In order to achieve the goal of reducing Colorado River uses, the bill provides temporary financial assistance to the agricultural sector to encourage voluntary water use reductions. It also funds water conservation and efficiency projects and activities to retain additional water supplies in the reservoir system.

#### Summary of proposed funding for Colorado River Drought Relief and Salton Sea

- \$500 million under the House Wildfire and Drought Package for the Secretary of the Interior to use available legal authorities to prevent key reservoirs of the Colorado River from declining to critically low water elevations.
- \$250 million under HR 3877 to address the environmental impacts of decreased water availability at the Salton Sea.
- \$4.0 billion under Inflation Reduction Act for Colorado River Basin drought relief.

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