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**COLORADO RIVER COMMISSION**  
**OF NEVADA**  
**April 6, 2017**

*Testimony of Jayne Harkins, P.E.*  
*Executive Director*

Thank you, Chair and distinguished members of the Committee. My name is Jayne Harkins, Executive Director of the Colorado River Commission of Nevada.

Assembly Joint Resolution No. 4 (AJR4) urges the National Research Council of the National Academy of Sciences to undertake a study that provides scientific and economic analysis of the current management practices of the Colorado River, including an alternative management option to drain Lake Powell and decommission Glen Canyon Dam, and directs the Nevada State Department of Conservation and Natural Resources to consult with comparable agencies in the seven Colorado River Basin States regarding options for funding this independent study.

I am here to provide the Committee with some information for your consideration of AJR4, specifically regarding the existing management of the Colorado River.

**Colorado River Commission**

The Colorado River Commission of Nevada (CRC) is the State agency which holds and protects the rights of the State of Nevada to its share of Colorado River water under federal law and contracts, and represents the state before federal agencies, other states, and other countries in a wide range of issues affecting the management and operation of the river. NRS 538.041 to

538.251, inclusive, has broad statutory authority to establish policy for the management of Nevada's allocation of electrical power and water resources from the Colorado. The CRC is the exclusive state agency with authority over the Colorado River. The CRC partners with the Southern Nevada Water Authority (SNWA), the wholesale provider of water in southern Nevada, in working with these Colorado River stakeholders in a collaborative effort to efficiently and effectively manage the River, and to address the current drought, future water imbalances and species and habitat needs within the Colorado River system.

### **Colorado River Overview**

The Colorado River starts in the Rocky Mountains, and flows 1,450 miles to the Gulf of California. The River provides water supplies to 40 million people for municipal, industrial and agricultural needs throughout the Colorado River Basin in the United States and Mexico. Water and power from the Colorado River are absolutely critical to the economy of Nevada. Approximately 2 million people in Southern Nevada rely on the Colorado River for over 90 percent of their water supply. Water from the Colorado River is also used to generate hydropower, a clean renewable low-cost source of energy. Glen Canyon Dam alone produces 5 billion kilowatt-hours (kWh) of hydroelectric power, which is delivered to power users in Wyoming, Utah, Colorado, New Mexico, Arizona, Nevada and Nebraska. These power deliveries also provide low cost power to Tribes. The total amount of hydropower produced on the Colorado River, that the CRC purchases and provided to its customers in 2016, was just under 1 million Megawatt Hours (82,726,544 million kWh). The CRC purchased 93,525,646 kWh from the Salt Lake City Area Integrated Project which includes power generated at Glen Canyon Dam.

The Colorado River is managed and operated under numerous compacts, federal laws, court decisions and decrees, contracts, and regulatory guidelines collectively known as the "Law of the River." This collection of documents apportions the water and regulates the use and management



of the Colorado River among the seven Basin States<sup>1</sup> and Mexico. The Basin is divided into an Upper and Lower Basin, each allocated 7.5 million acre-feet (maf), and an additional 1.5 million acre-feet allocated to Mexico. Nevada receives 300,000 acre-feet annually.

### **Operational Management**

In its natural state, the mighty Colorado River bestowed both extreme flooding and extreme drought conditions which made development of the arid west very difficult. In general, dams create storage and regulation that allows for a more reliable and consistent water supply.

Glen Canyon Dam was constructed to allow the Upper Colorado River Basin states to utilize their 7.5 maf, and to provide for releases to the Lower Basin of their allocated share of the River. To maximize management of the river, Lake Powell created by Glen Canyon Dam, and Lake Mead created by Hoover Dam, work together to provide adequate storage throughout the Upper and Lower basins, particularly in times of drought. Although the Colorado River Basin experienced above average snowpack in 2017, this has been preceded by 16 years of drought conditions. According to tree-ring studies, this has been the worst drought in the Colorado River in 1200 years. We are not yet sure if the Colorado River Basin is out of the drought. Because of the existence of Glen Canyon Dam and Lake Mead, the two primary reservoirs on the River, this stored water in Lake Powell was able to be released downstream to Lake Mead which avoided the declaration of shortages in the Lower Basin and Nevada. For example, in 2002, inflow into Lake Powell was only 2.64 maf, yet releases from Lake Powell to Lake Mead continued at 8.71 maf. The drought has been severe and has had tremendous impact on reservoir storage. When taking both reservoirs in the aggregate, the prolonged drought has depleted the combined reservoir storage by 30.7 maf, which is more than the capacity of either reservoir. It seems history has demonstrated that one reservoir is not likely sufficient to sustain water deliveries over prolonged drought period(s) in the Colorado River Basin.

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<sup>1</sup> Wyoming, Colorado, Utah, New Mexico make up the Upper Basin. Nevada, Arizona, and California make up the Lower Basin.

The Colorado River community is at a critical juncture. This severe drought has placed in jeopardy our 40 million Southwest residents and one of the nation's most productive agricultural centers. As we continue to face these daunting challenges, Nevada's collaboration with the federal government, other States and stakeholders will be critical to our collective success. The CRC and the Southern Nevada Water Authority (SNWA) have been working closely together and with our other partners in addressing the current drought with the negotiation of new operational management plan called the Drought Contingency Plan (DCP). While not yet completed, it will protect Lake Mead elevations from dropping to critical levels. Additionally, ongoing negotiations with Mexico will include them as partners in addressing the need to keep Lake elevations higher, with all stakeholders taking earlier and deeper cuts to their water deliveries and encouraging water contract holders to create additional supplies of water to supplement Lake Mead.

Also of note, the proposed study would largely duplicate the Colorado Rivers Basin Water Supply and Demand Study (Basin Study) that was funded and completed in 2012 by the Bureau of Reclamation (Bureau) and the seven Colorado River Basin States, including Nevada, with participation and input from a broad range of over 100 stakeholders throughout the Basin. The Basin Study defined and analyzed future imbalances in water supply and demand in the Basin through the year 2060 and developed and analyzed options and strategies to resolve those imbalances. The potential impacts of future climate variability and climate changes were also evaluated. The Bureau and a number of non-federal partners, including the CRC and the SNWA, contributed to a 50/50 sharing of costs, in the approximate amount of 7 million dollars.

Following completion of the Basin Study in 2012, the second phase called Moving Forward: Phase 1 was completed in 2015 focusing on water use efficiency, and environmental and recreational flows. A third study called Moving Forward: Phase 2, with a focus from study to action, has begun. These studies are providing a critical investigation through a collaborative process approach, again with a large variety of stakeholder input. Both the SNWA and the CRC



are active members of the study team and have committed a great deal of financial resources and personnel to the Bureau- led efforts.

### **Water Infrastructure**

Several water organizations across the United States are taking steps to ensure that the infrastructure bills that are being introduced in the Congress of the United States during this current administration specifically include water infrastructure. Water infrastructure is perhaps the most important, and sometimes overlooked, form of infrastructure in our nation. Water, by far, is the most critical natural resource needed by everyone, and is slowly but surely getting the attention it deserves in Congress.

We at the CRC are committed to help protect this vital resource, and assist with providing valuable input and participation in those state and federal programs that have responsibility for managing and conserving this resource. The following are some websites that the Committee may find useful in providing additional information regarding the Colorado River and Glen Canyon Dam:

[www.usbr.gov/uc/rm/crsp/gc](http://www.usbr.gov/uc/rm/crsp/gc)

[www.usbr.gov/lc/region/pao/lawofrvr.html](http://www.usbr.gov/lc/region/pao/lawofrvr.html)

[https://qcnr.usu.edu/wats/colorado\\_river\\_studies](https://qcnr.usu.edu/wats/colorado_river_studies)

[http://www.azwater.gov/azdwr/ADWR\\_News/FillMeadFirst.htm](http://www.azwater.gov/azdwr/ADWR_News/FillMeadFirst.htm)

<https://www.usbr.gov/lc/region/programs/crbstudy/finalreport/index.html>

<https://www.usbr.gov/lc/region/programs/crbstudy/MovingForward/Phase1Report.html>

Thank you for this opportunity to provide you with this information. I will be happy to answer any questions.