

**HEARING OF THE  
SENATE ENERGY SUBCOMMITTEE ON PUBLIC LANDS AND FORESTS**

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Statement of Patricia Mulroy  
General Manager, Southern Nevada Water Authority

Mr. Chairman, members of the subcommittee, thank you for the opportunity to testify today.

My name is Pat Mulroy, General Manager of the Southern Nevada Water Authority. I have been involved in water issues in Southern Nevada and the Colorado River Basin for over 20 years.

I would like to offer some perspective on an issue that has far-reaching consequences for future water development and the reliability of existing water supplies in the western United States over the next century. That issue is climate change.

Perhaps nowhere are the consequences of climate change more manifest than in the Colorado River Basin. Here, a sustained drought has altered our historical understanding of the river and challenged many underlying assumptions about its long-term management. It is forcing communities such as ours to adjust infrastructure plans, improve water efficiency and develop additional unused water supplies to maintain the reliability of our delivery systems. All this has happened in only a matter of years.

As inconceivable as it sounds today, the states of the Colorado River Basin and the U.S. Bureau of Reclamation spent much of the nineties in negotiations about dividing surplus water on the river. Predictive models had indicated that the probability of a major water shortage was virtually zero. In the absence of compelling data or evidence to the contrary, most stakeholders on the river accepted this.

This quickly changed as the river entered what soon became the worst drought in the recorded history of the system. The impacts of the drought have been daunting. Since 2001, inflows to

Lakes Powell and Mead have been below average for all but one year, with 2002 being the worst thus far at 25 percent of average. Historical average inflows into Lake Powell over the past seven years have been 61 percent of normal. Today, both Lake Powell and Lake Mead sit at roughly 49 percent of capacity – a combined loss of around 25 million acre-feet of system water, and in only a handful of years. It is sobering to note that Lake Mead would probably be dry today were it not for Glen Canyon Dam and Lake Powell. Almost two million people in the greater Las Vegas Valley depend on Lake Mead for their daily water. Millions of others depend on it downstream in Arizona and California.

Because of the drought, Southern Nevada has had to take steps to protect the operation of its two drinking water intakes in Lake Mead. Both are threatened by the lake's steadily declining water levels. The highest intake, Intake No. 1, sits at elevation 1050 and could be out of service as soon as 2010. The second intake, at elevation 1000, could be threatened sometime after that. To address the situation, Southern Nevada is proceeding as quickly as possible with the construction of a third intake. This new intake is not expected to be completed before 2013. To address the loss of capacity that will occur if lake levels fall below the level of Intake No. 1, we have augmented the pumping capacity for our second intake and constructed bypass pipelines at our Lake Mead water treatment facility. This will allow our second intake to compensate for the loss of Intake No. 1 and move up to 600 million gallons of water per day into the valley while the third intake is being constructed.

To further offset the impacts of the drought, Southern Nevada implemented more aggressive water conservation. When the Authority was formed in 1991, the region embarked on a modest

campaign to achieve 10 percent conservation by 2010. By 2003, with the drought as backdrop, Southern Nevada adopted a comprehensive drought response plan that has resulted in permanent changes to how the community uses water. The plan involves a mix of regional policy, education, pricing and incentive initiatives, including increases to tiered water rates among all local water purveyors, prohibition of turf in front yards of new development, restrictions on time and day of watering, more innovative conservation advertising, and extensive water waste enforcement. The centerpiece of Southern Nevada's new conservation ethic is the Water Smart Landscapes Program. With revenues derived from local connection charges paid by new development, this program provides water customers with rebates for removing turf from their landscaping. To date, the program has provided more than \$85 million in rebates, saving more than five billion gallons of water each year.

As a result of these conservation efforts, Southern Nevada's consumptive water use declined by approximately 18 billion gallons between 2002 and 2006, despite the arrival of nearly 330,000 new residents and 40 million annual visitors. Most importantly, conservation in our community has evolved from a temporary drought response into a permanent way of life.

As Southern Nevada transformed its approach to conservation, the seven states of the Colorado River Basin came together in response to the drought and embarked on negotiations to establish guidelines for dealing with shortage on the Colorado River. After several years of discussion, the states submitted a comprehensive proposal to the Secretary of the Interior in 2006 that establishes shortage guidelines and creates incentives for conservation and efficiency.

The proposal is a milestone in the history of the river. For the first time, a shared shortage among states and cities has been established, one that recognizes the interdependent nature of the river's users and the need to share impacts. To cite one example, in the event that the Secretary of the Interior declares a shortage on the Colorado River and Arizona cities are forced to cut back, Southern Nevada has agreed to reduce its consumption from the river by a proportionate amount. This type of arrangement would have been considered impossible ten years ago. It is happening today in direct response to the drought and long-term concern over how climate change may affect future water availability from the Colorado River.

In conjunction with their proposal to the Secretary of the Interior, the seven basin states are undertaking a number of water management initiatives to increase flexibility on the river system. These include changes in the reservoir operation of Lakes Powell and Mead, additional interstate groundwater banking and other efforts. For example, a demonstration project to assess the use of "intentionally created surpluses," which would allow water from extraordinary conservation gains to be stored in Lakes Powell or Mead and withdrawn in future years, is underway at the Metropolitan Water District of Southern California. Southern Nevada is helping to fund the construction of the Drop 2 Storage Reservoir Project along the All-American Canal in return for a one-time supply of water that can be accessed in future years. The Drop 2 structure is intended to capture water that would otherwise be lost to Mexico over and above existing treaty obligations between that country and the United States. We have also funded a study of future supply options such as desalination for use by the seven basin states.

Beyond these collaborative efforts on the Colorado River, Southern Nevada is moving forward on its own plans to develop an alternate water supply that is hydrologically independent of the river. That supply is comprised of applications and water rights for available, unused groundwater in several hydrographic basins in eastern Nevada.

Two basins in particular form the backbone of this in-state groundwater project: Spring Valley and Snake Valley. Located west of Wheeler Peak and the Great Basin National Park, Spring Valley has perhaps the largest amount of unappropriated water of any basin in Nevada. In April 2007, the Nevada State Engineer granted Southern Nevada the right to 60,000 acre-feet in Spring Valley, the pumping of which we must step into gradually. In Snake Valley, a basin that is shared by both Nevada and Utah, Southern Nevada has applications for approximately 50,000 acre-feet of available, unused groundwater. Both states continue to negotiate over the disposition of water in Snake Valley.

Unlike Snake Valley, there is no community in Spring Valley, only a series of large ranches. Between 2006 and 2007, the Southern Nevada Water Authority acquired seven of these ranch properties as part of its commitment to adaptive management of the groundwater basins that encompass our in-state water project. The properties included more than 33,000 acre-feet of surface water rights and more than 6,000 acre-feet of groundwater rights, as well as a host of biological, recreational and other resources that will help support sustainable development of the water supply while minimizing impacts to the environment. To this end, we are retaining the surface water rights within the valley and will use them to recharge the basin as part of an overall effort to manage and protect the aesthetic and environmental values of the surrounding area. We

will also continue ranching activities in Spring Valley to help the watershed and environment, and have hired a ranch manager who is developing and implementing strategies for more efficient and sustainable agricultural practices. Lastly, we entered into a stipulation agreement with the U.S. Department of Interior in September 2006 on behalf of the U.S. Fish and Wildlife Service, National Park Service, U.S. Bureau of Land Management and U.S. Bureau of Indian Affairs that outlines a detailed process for monitoring and management of Spring Valley as the in-state project moves forward. Through these various efforts, we can develop this essential water supply in a way that meets the needs of Southern Nevada, but does not compromise the basin of origin's natural resources or way of life.

Let me take a few moments to underscore that word "essential." Today, approximately 90 percent of Southern Nevada's water supply comes from the Colorado River. About 10 percent comes from groundwater in the Las Vegas Valley. Climate change and the drought may have helped transform Southern Nevada's conservation ethic to one of the most progressive in the West, but it also reminded us that you cannot supply 100 percent of an area's demands with only 10 percent of its water supply. In other words, further shortfalls in the Colorado River could jeopardize that portion of our water supply, leaving our community exposed unless we move forward as planned and develop alternate supplies such as the in-state groundwater project. There is nothing short of an alternative supply that will protect us from continued drought or future shortages. In terms of conservation, Southern Nevada has noted for over a decade in its regional water resource plan that conservation is the least expensive resource available to us. As such, it remains a priority when it comes to our balancing of the many competing interests that need to be addressed when managing water (1) in the most arid desert in the country, (2) for one

of the fastest growing populations in the country, (3) in a valley with groundwater supplies that are fully appropriated, (4) in a state with the fewest rights to Colorado River water of all the states that use the river, and (5) in a region with no agricultural water use to provide a supply buffer in times of shortage. However, conservation cannot be our only priority. The reliability of our water system and its supply are equally important.

The reliability of a water system is not only a function of its physical infrastructure, but also of its ability to shift water supplies in the event of unforeseen circumstances. California is one example – their ability to shift supplies to alternate sources in response to climatic conditions is allowing them to avert a potentially disastrous shortfall. Reliability is the reason we invested in a second intake long ago and are currently developing a third. It is the reason we continue to diversify our water resource portfolio for current and future use. To solve the water management challenges posed by climate change and our unique situation as a desert community, we will still need additional, permanent supplies of unused water as an insurance policy to protect us from drought and shortages on the Colorado River. Our goal is to reduce our dependency on Colorado River water to approximately 60 percent by 2050.

As the drought has demonstrated, climate change represents an unprecedented challenge for Western communities, particularly as it relates to developing, storing and delivering adequate water supplies. The types of internecine fights for resource independence that marked our past have to be replaced by a recognition of interdependence. If a city develops groundwater supplies in an area outside its own boundaries, it is not a given that the area will be destroyed. There are sufficient environmental standards and regulatory processes to prevent such a thing, but most

importantly, it is not in a community's interest to exhaust or irreparably harm resources that are vital to its own well-being. Rural communities will find that partnerships with an urban area can provide them with the resources needed to survive the impacts of climate change. And while urban conservation has long been the focus of much attention, there are many opportunities for improvement in agricultural irrigation. Urban areas are increasingly willing to finance those ventures.

What we are experiencing today on the Colorado River may be a harbinger of an entirely new reality for the two countries and the seven states within the United States that have come to rely so heavily on this river's scant resources. Old paradigms of single-source supply are relics of a time we cannot assume will return in the foreseeable future. The security of communities in the arid west will depend on conservation, diversification of the resource portfolio and, perhaps most critically, the recognition that we are interdependent. Only by embracing cooperation and partnership, and by balancing competing needs and demands, can we set new standards for resource management that will see our communities through this century and the consequences of climatic uncertainty. Our experiences in the Colorado River Basin and here in Southern Nevada demonstrate that many of our most difficult water issues can be resolved if everyone is willing to work together, take the time to understand one another's point of view, and share in the occasional tradeoffs necessary to achieve meaningful, long-lasting outcomes.

Thank you for your time. I will be happy to answer any questions you may have.