SOUTHERN NEVADA WATER AUTHORITY

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The Southern Nevada Water Authority (SNWA) is a cooperative, not-for-profit agency formed in 1991 to address Southern Nevada's unique water needs on a regional basis.

Las Vegas Wash , Nevada

SOUTHERN NEVADA WATER AUTHORITY

MISSION

Our mission is to provide world class water service in a sustainable, adaptive and responsible manner to our customers through reliable, cost effective systems.

GOALS

Assure quality water through reliable and highly efficient systems.

Deliver an outstanding customer service experience.

Anticipate and adapt to changing climatic conditions while demonstrating stewardship of our environment.

Develop innovative and sustainable solutions through research and technology.

Ensure organizational efficiency and manage financial resources to provide maximum customer value.

Strengthen and uphold a culture of service, excellence and accountability.

Colorado River, Grand Canyon National Park

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Colorado River, Utah

EXECUTIVE SUMMARY

SINCE ITS INCEPTION IN 1991, THE SNWA HAS WORKED TO SEEK NEW WATER RESOURCES FOR SOUTHERN NEVADA, MANAGE EXISTING AND FUTURE WATER SUPPLIES, CONSTRUCT AND MANAGE REGIONAL WATER FACILITIES, AND PROMOTE CONSERVATION.

The Southern Nevada Water Authority (SNWA) was formed in 1991 by a cooperative agreement among seven water and wastewater agencies. Collectively, the SNWA member agencies serve more than 2 million residents in the cities of Boulder City, Henderson, Las Vegas, North Las Vegas and areas of unincorporated Clark County. As their wholesale water provider, the SNWA is responsible for water treatment and delivery, as well as acquiring and managing long-term water resources for Southern Nevada.

SNWA member agencies:

- Big Bend Water District
- City of Boulder City
- City of Henderson
- City of Las Vegas
- City of North Las Vegas
- Clark County Water Reclamation District
- Las Vegas Valley Water District

The SNWA Cooperative Agreement calls for the development of a water resource plan to be reviewed and adopted annually by the Board of Directors. The 2015 SNWA Water Resource Plan fulfills this requirement, providing a comprehensive overview of projected water demands in Southern Nevada, as well as the resources available to SNWA to meet those demands over time.

THE CURRENT PLANNING ENVIRONMENT

Beginning in 2000 and continuing today, a number of water supply and demand changes have occurred—both locally and regionally—that create uncertainty for water planning agencies across much of the western United States. By far, the most significant change affecting Southern Nevada has been the onset and persistence of drought conditions in the Colorado River Basin.

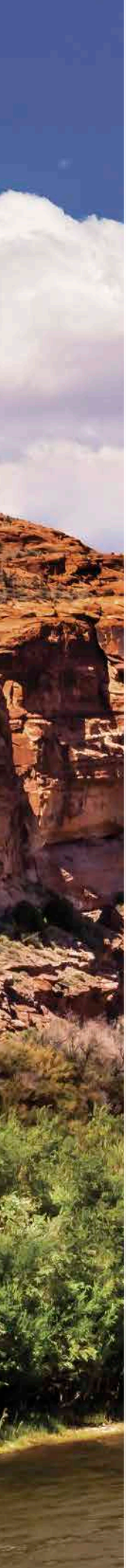
Between 2000 and 2014, snowfall and runoff into the basin were well below normal, representing the lowest 15-year average on record. As a result, the combined water storage in the Colorado River's two primary reservoirs (Lake Mead and Lake Powell) decreased to just 44 percent at the end of 2014.

Beyond the current impacts presented by drought, climate change is another unpredictable variable associated with the long-term availability of water supplies. According to the U.S. Bureau of Reclamation's 2012 Colorado River Basin Water Supply and Demand Study, the Colorado River is projected to experience a median imbalance of 3.2 million acre-feet per year (AFY) between supply and demand by the year 2060 as a result of climate change and increased demands within the basin.

In the near term, hydrologic modeling indicates a high probability that Lake Mead water levels will continue to decline. This creates two distinct challenges for Southern Nevada, which depends on the Colorado River for approximately 90 percent of its overall resource supply. Among other things, lowering Lake Mead water levels has the potential to reduce the availability of community water supplies during declared shortages and put SNWA's current Lake Mead intake pumping facilities at risk.

The current planning environment also includes uncertainty associated with long-term water demand forecasts. In 2007, the United States began to experience a severe economic disruption that lasted for several years. Southern Nevada was among the hardest hit regions in the country. While these conditions temporarily suppressed near-term population growth in Southern Nevada, long-term projections indicate the community will continue to grow in the future.

As experienced in Southern Nevada's recent past, population growth can occur much faster than predicted, or it can be drastically affected by



economic disruptions such as those experienced in the years following the downturn. As the community continues its recovery from these events, it is difficult to predict how long this recovery will take, and what impact this will have on long-term water demands.

These supply and demand considerations, as well as how they are addressed in the 2015 Water Resource Plan, are discussed further below.

SUPPLY & DEMAND

Water resource planning is based on two key factors: supply and demand. Supply refers to the amount of water that is available or that is expected to be available for use. Water demand refers to the amount of water expected to be needed in a given year. Water demand projections are typically based on population forecasts and include assumptions about future water use, such as expected achievements toward water conservation goals.

Precise accuracy from year to year rarely occurs in projecting future demands, particularly during periods of significant social and economic change. While making assumptions is a necessary part of the planning process, assumptions are unlikely to materialize exactly as projected.

To meet current and future water demands, the SNWA has worked for nearly 25 years to develop and manage a flexible portfolio of water resource options that include permanent, temporary and future resources. Some of these resources are available for immediate use, such as Nevada's Colorado River allocation, Las Vegas Valley groundwater and banked resources, while others may require the construction of additional infrastructure or are pending state and/or federal review processes. The portfolio approach allows SNWA to assess its overall water resources and make appropriate decisions regarding what resources to bring online when necessary.

To reduce community water demands and improve overall efficiency, the SNWA has also developed and implements one of the most aggressive water conservation programs in the nation. Over the last decade (2002 – 2014), the region has reduced its net gallons per capita per day or net GPCD water use by 43 percent. Nevada's use of Colorado River water declined by approximately 100,000 AFY during the same timeframe, despite the addition of more than 500,000 new residents. Conservation continues to be an essential and effective demand management tool, and remains a top priority for the organization over the long-term planning horizon.

PLANNING FOR UNCERTAINTY

In 2012, the SNWA Board of Directors initiated an integrated resource planning process that included the formation of the Integrated Resource Planning Advisory Committee, comprised of diverse stakeholder groups throughout the Southern Nevada community. The 21-member committee was formed to provide recommendations on key organizational initiatives, including funding, resources, facilities, conservation and water quality. The committee met between 2012 and 2014, and presented its resources and facility recommendations to the SNWA Board in December 2014 (Appendix 2). These recommendations were adopted by the Board and have been integrated in the 2015 Water Resource Plan.

While preparing the 2015 Water Resource Plan, SNWA also considered a number of other factors related to water supply and demand conditions, including:

- The potential impact of continued drought and climate change on water resource availability, particularly for Colorado River supplies; and
- The potential impact of economic conditions, climate change and water use patterns on long-term water demands.

To help address these factors, the SNWA has used a scenario-based planning approach for its 2015 Water Resource Plan. Scenarios considered as part of this plan address the relative highs and lows of future water demands, as well as supply restrictions that could occur over the long-term planning horizon. The scenarios represent Southern Nevada's future water resource needs under variable supply and demand conditions. The SNWA expects water demands to fall somewhere within this range. As discussed in the chapters that follow, SNWA has sufficient permanent, temporary and future resources to meet all future planning scenarios.

The SNWA has also undertaken a number of important initiatives to help mitigate the impacts of drought and climate change in Southern Nevada.

Collectively, these efforts have proved increasingly valuable as SNWA continues to work to address unprecedented drought conditions in the Colorado River Basin, as well as evolving demand forecasting uncertainties.

Among the organization's top priorities are to preserve access to Colorado River supplies through the development of new intake and pumping facilities, and to continue to identify and acquire permanent and temporary supplies that can be used to offset potential supply reductions. Other efforts include progress on water rights and environmental permitting for the development of future resources.

As of 2015, SNWA has completed the tunneling portion of its new Intake No. 3 and has started work on a new Low Lake Level Pumping Station. Together, these facilities will allow for continued access to Colorado River supplies if Lake Mead reaches levels where Intakes 1 and 2, and their associated pumping stations, become inoperable.

Meanwhile, SNWA continues to collaborate with other Colorado River Basin states to maximize the use and availability of Colorado River supplies. These collaborations have led to new temporary water supplies for Southern Nevada that can be stored in Lake Mead for future use, helping maintain Lake Mead water levels and delay shortage declarations.

The 2015 Water Resource Plan discusses these efforts in detail, and provides a comprehensive summary of SNWA's demand and supply outlook through the year 2065. As with previous plans, the SNWA will review its plan annually and make adjustments as needed.