EXECUTIVE SUMMARY

SINCE ITS INCEPTION IN 1991, THE SOUTHERN NEVADA WATER AUTHORITY HAS WORKED TO SECURE NEW WATER RESOURCES FOR SOUTHERN NEVADA, MANAGE EXISTING AND FUTURE WATER SUPPLIES, CONSTRUCT AND OPERATE 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 2.2 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 adoption of a water resource plan to be reviewed annually by the SNWA Board of Directors. The 2019 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 meet those demands over time.

THE CURRENT PLANNING ENVIRONMENT

Beginning in 2000 and continuing today, several 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 in the Colorado River Basin.

Between 2000 and 2019, overall snowfall and runoff into the Basin were well below normal, representing one of the lowest 20-year periods on record. While snowpack and runoff conditions improved in 2019, the persistence of decades-long drought conditions has resulted in significant water-level declines in major system reservoirs. As of late 2019, the combined water storage in the Colorado River’s two primary reservoirs (Lake Mead and Lake Powell) was at just 47 percent of capacity.

In the near term, hydrologic modeling indicates a high probability that Lake Mead water levels will continue to decline. Under the Colorado River Drought Contingency Plan (DCP), water users in the Lower Basin, including Nevada, will begin making additional contributions to Colorado River storage when Lake Mead is projected to be at or below 1,090 feet. These contributions are in addition to mandatory shortages and together serve to bolster Lake Mead water levels and preserve critical operations.

Beyond the current challenges presented by drought, climate change is another unpredictable variable associated with the long-term availability of water supplies. Multiple studies project a warmer and drier future, both locally and regionally. Projected climate change impacts range from decreased snowpack, precipitation and soil moisture to increased evaporation and stronger, longer and more frequent droughts. 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.

The current planning environment also includes uncertainty associated with facility operations, the availability of future resources, and the accuracy of long-term water demand forecasts. These considerations, as well as how they are addressed in
To promote water efficiency and reduce water waste, the SNWA continues to implement one of the most comprehensive water conservation programs in the nation. The program has helped the region reduce per capita water use by approximately 46 percent between 2002 and 2018, despite the addition of approximately 690,000 new residents.

While conservation gains have been remarkable over the past two decades, progress towards the community’s conservation goal slowed over the last few years. This could be the result of several factors, including favorable economic conditions, warmer and dryer local weather conditions, and/or a fading community conservation drought response.

Improving water efficiency and reducing water waste is integral to SNWA’s resource planning efforts and conservation must remain a top priority for the community over the long-term planning horizon. As described in later portions of this Plan, the SNWA has expanded conservation education, outreach and incentive programs to help the community get back on track with conservation progress. These efforts are ongoing, with notable improvement for 2019.

PLANNING FOR UNCERTAINTY

While preparing the 2019 Plan, SNWA also considered 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.

As in prior years, the SNWA used a scenario-based planning approach for its 2019 Plan. Key factors evaluated include possible reductions of Colorado River supplies, variation in future demands, and additional conservation.

As part of its planning process, SNWA considered the increasing likelihood that water supply reductions would be imposed for Colorado River supplies in the near-term planning horizon. Mandatory water use reductions and other

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 based on population forecasts and include assumptions about future water use, such as expected achievements toward water conservation goals.

Projecting future demands is uncertain, particularly during periods of significant social and economic change. Assumptions are a necessary part of the planning process and conditions are unlikely to occur exactly as assumed. Likewise, climate variations, policy changes, implementation of new regulations and other factors can influence water resource availability over time.

The SNWA has worked for more than 25 years to develop and manage a portfolio of water resource options that can be used flexibly to meet short- and long-term water demands. The portfolio approach allows SNWA to assess water demand conditions and resource options, and make appropriate decisions regarding what resources to bring online when necessary.

The SNWA’s water resource portfolio includes 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, Intentionally Created Surplus (ICS) and banked resources, while others may require the construction of additional infrastructure or are pending state and/or federal review processes.

Likewise, water conservation plays a critical role in helping the community to balance supply and demand. Conservation helps to reduce demands and extend the availability of current and future water supplies. SNWA projects an estimated savings of 24,000 - 28,000 acre-feet of water in 2035 by achieving the community’s current water conservation goal of 105 gallons per capita per day (GPCD) by 2035. As of 2018, Southern Nevada’s use is at 113 GPCD.
contributions are based on the projected surface elevation of Lake Mead. Under federal shortage rules and the DCP, Nevada’s total obligation ranges from 8,000 to 30,000 acre-feet per year (AFY) when Lake Mead’s surface elevation is projected to be at or below 1,090 feet. At the time of Plan publication, Lake Mead’s elevation was at 1,083 feet. Additional information about Colorado River water use reductions is provided in Chapter 3.

The SNWA also considered economic growth in Southern Nevada. Long-term projections indicate that the region will continue to grow in the future. However, a high level of uncertainty remains as to the magnitude and timing of population change, and what impact that change will have on associated short- and long-term water demands.

As further described in Chapter 4, SNWA’s resource planning scenarios consider these factors and bracket the range of reasonable supply and demand conditions that may be experienced over the 50-year planning horizon. This is a conservative approach that demonstrates how SNWA plans to meet future needs, even if conditions change significantly over time.

ADAPTIVE MANAGEMENT

Working with the community, SNWA has implemented several adaptation strategies to respond to drought impacts. From the development of new facilities and aggressive water conservation to water banking and system conservation initiatives, these efforts have reduced the potential for customer impacts.

SNWA’s adaptation response measures include the construction of a new Low Lake Level Pumping Station at Lake Mead to help protect Southern Nevada from potential impacts of continued Lake Mead water level declines. When complete in 2020, the pumping station will work in conjunction with SNWA’s Lake Mead Intake No. 3 to preserve Southern Nevada’s access to Colorado River water supplies below 1,000 feet.

Likewise, water conservation has reduced the potential for near-term supply impacts associated with mandatory reductions and other contributions due to ongoing drought and declining Lake Mead water levels. Nevada’s Colorado River consumptive use was approximately 244,000 AFY in 2018, as described in Chapter 2. This is well below the minimum amount of basic Colorado River supply available to Nevada as further described in this Plan.

Water conservation has far-reaching benefits to the community and the Colorado River system as a whole. Locally, water conservation increases water efficiency and reduces demands. It also allows SNWA to store or “bank” unused supplies. This, in turn, provides SNWA with added flexibility in responding to drought conditions and meeting future demands. As of 2018, the SNWA stored nearly two million acre-feet (AF) of water. This is more than eight times Nevada’s 2018 consumptive Colorado River water use.

Water conservation helped SNWA to meet its commitments with interstate and federal partners to store water in Lake Mead. Together, partners have bolstered Lake Mead storage through Intentionally Created Surplus, as well as System Conservation and other initiatives that benefit the Colorado River system as a whole. Likewise, efforts by interstate and federal partners to develop and implement new Drought Contingency Plans in 2019 are helping to slow the decline of Lake Mead and Lake Powell water levels. To date, collaborations have reduced Lake Mead’s water level decline by approximately 32 feet.

These efforts have provided SNWA with time to complete new intake and pumping infrastructure, helped to forestall a Colorado River shortage declaration, and offer greater opportunities for water storage and recovery. Other benefits to the community include reduced pumping costs, enhanced operational flexibility and increased access to temporary supplies during shortages.

CURRENT PRIORITIES

As discussed in the chapters that follow and with continued progress toward the community’s water conservation goals, SNWA has sufficient permanent, temporary and future resources to meet all future planning scenarios described in Chapter 4.

Continued persistence and resolve will be required as the region faces prolonged drought, and as the entire Southwest region responds to hydrologic challenges related to climate change. Top priorities for SNWA are to:
• Preserve access to Colorado River supplies by completing the development of new facilities at Lake Mead.

• Reduce water demands and maximize the use of available resources through aggressive water conservation.

• Bank conserved resources and grow temporary supplies that can be used flexibly to meet demands and/or offset potential supply reductions.

• Work with interstate and federal partners on initiatives designed to slow the decline of Lake Mead water levels, reduce the magnitude of potential supply reductions, and investigate temporary and future resource opportunities.

• Continue to make progress on water rights and environmental permitting processes for the development of future resources, participating in legal and regulatory processes as needed to protect the availability of future resource options.