PLAN INTRODUCTION

THIS CHAPTER PROVIDES AN OVERVIEW OF THE SNWA'S RESOURCE PLANNING EFFORTS. IT INCLUDES AN ABBREVIATED HISTORY OF WATER IN SOUTHERN NEVADA, FOCUSING ON MAJOR ISSUES AND INITIATIVES THAT OCCURRED DURING THE LAST CENTURY.

INTRODUCTION

For much of its past, the area now known as Clark County was little more than a collection of scarce watering holes for various trails through the Mojave Desert. With the coming of the railroad in 1905, the privately operated Las Vegas Land and Water Company was formed to build and operate the area's first system for conveying local spring water. In these early years, the community viewed its supply of artesian water as virtually inexhaustible and more than adequate to meet the needs of any growth that might occur.[1]

In 1922, the Colorado River Compact defined the geographic areas of the upper and lower basins of the Colorado River, apportioning 7.5 million acre-feet of water per year (AFY) to each. Of the Lower Basin's 7.5 million AFY, the Boulder Canyon Project Act authorized the apportionment of 300,000 AFY to Nevada, 2.8 million AFY to Arizona and 4.4 million AFY to California. At the time, Nevada's negotiators viewed 300,000 AFY as more than a reasonable amount; Southern Nevada had no significant agricultural or industrial users, and groundwater seemed plentiful.[2]

These conditions changed significantly over time. By 1940, local resource managers began expressing concerns about limited groundwater supplies, water waste and declining groundwater levels. While the Colorado River Compact and subsequent construction of Hoover Dam in 1936 made Colorado River water a viable future resource, the lack of infrastructure and sufficient funding for capital improvements precluded any immediate use to support development in the growing region.

In 1947, the Nevada Legislature created the Las Vegas Valley Water District (LVVWD) to help manage local water supplies. The LVVWD acquired the assets of the Las Vegas Land and Water Company and began operations in 1954 as the municipal water purveyor for Las Vegas and unincorporated Clark County.

Shortly thereafter, the LVVWD entered into agreements with what is now known as Basic Water Company (BWC) for the expansion of BWC's small industrial water line to deliver Colorado River water to the LVVWD service area.

Given the astonishing pace of growth that occurred over the next several years and the limits of the existing pipeline, the LVVWD initiated formal engineering studies for new facilities to import additional Colorado River water into the Las Vegas Valley from Lake Mead. This effort ultimately resulted in the construction of the Alfred Merritt Smith Water Treatment Facility and associated intake, pumping and transmission facilities (collectively referred to as the Southern Nevada Water System or SNWS), which became operational in 1971. The SNWS was first expanded in 1982 (and again in the years to follow) in response to increasing demands.

By the latter part of the 20th century, water planners estimated that the region would soon reach the limits of its Colorado River apportionment.[3] In 1989, as a result of profound uncertainty created by population growth and future resource availability, the LVVWD filed applications for unappropriated groundwater in eastern Nevada and began storing its remaining unused Colorado River water for future use (see Chapter 2). During this time, the community also implemented its first significant conservation effort—Operation Desert Lawn. The program resulted in ordinances by the local municipalities restricting landscape irrigation during the hottest times of the day.

CREATION OF THE SNWA

By the end of the 1980s, resource challenges had reached a critical point. With the new decade, local leaders began to aggressively explore different options for extending and managing water resources, while meeting the ongoing demands of the community.

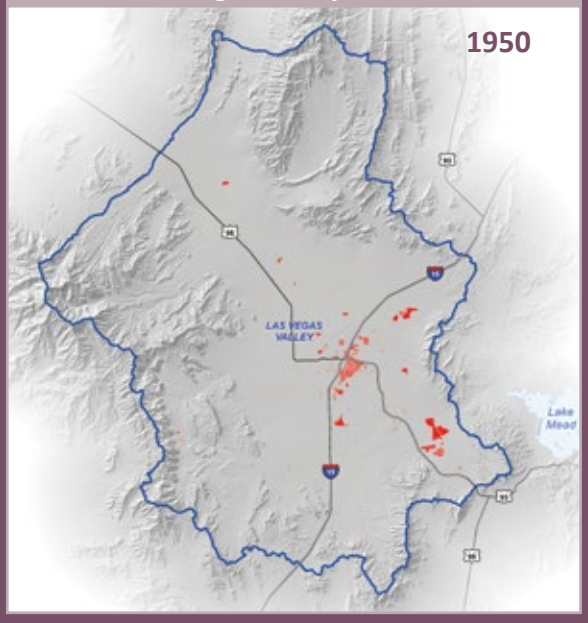
A Century of Change

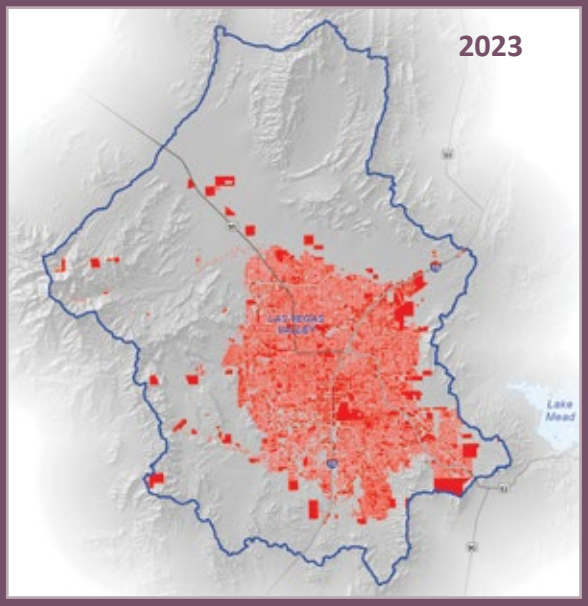
With the birth of Las Vegas in 1905 as a way station for the San Pedro, Los Angeles and Salt Lake Railroad, Southern Nevada began to attract a large number of residents and businesses.

From an estimated population of more than 40,000 in 1950 to nearly 2.4 million in 2023, the Southern Nevada region has experienced change faster than almost any other region in the nation during this same time.

Today, Southern Nevada is home to 73 percent of Nevada's total population. The region uses less than 5 percent of all water available for use in the state.

Las Vegas Valley Land Use





One of the most significant events to occur during this time was the formation of the Southern Nevada Water Authority (SNWA) in 1991 through a cooperative agreement among seven water and wastewater 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

Today, these seven agencies provide water and wastewater service to more than 2.3 million residents in the cities of Boulder City, Henderson, Las Vegas and North Las Vegas, and portions of unincorporated Clark County (Figure 1). Since its inception, the SNWA has worked to acquire and manage water supplies for current and future use, construct and operate regional water facilities and promote conservation.

Water Supply Acquisition and Management

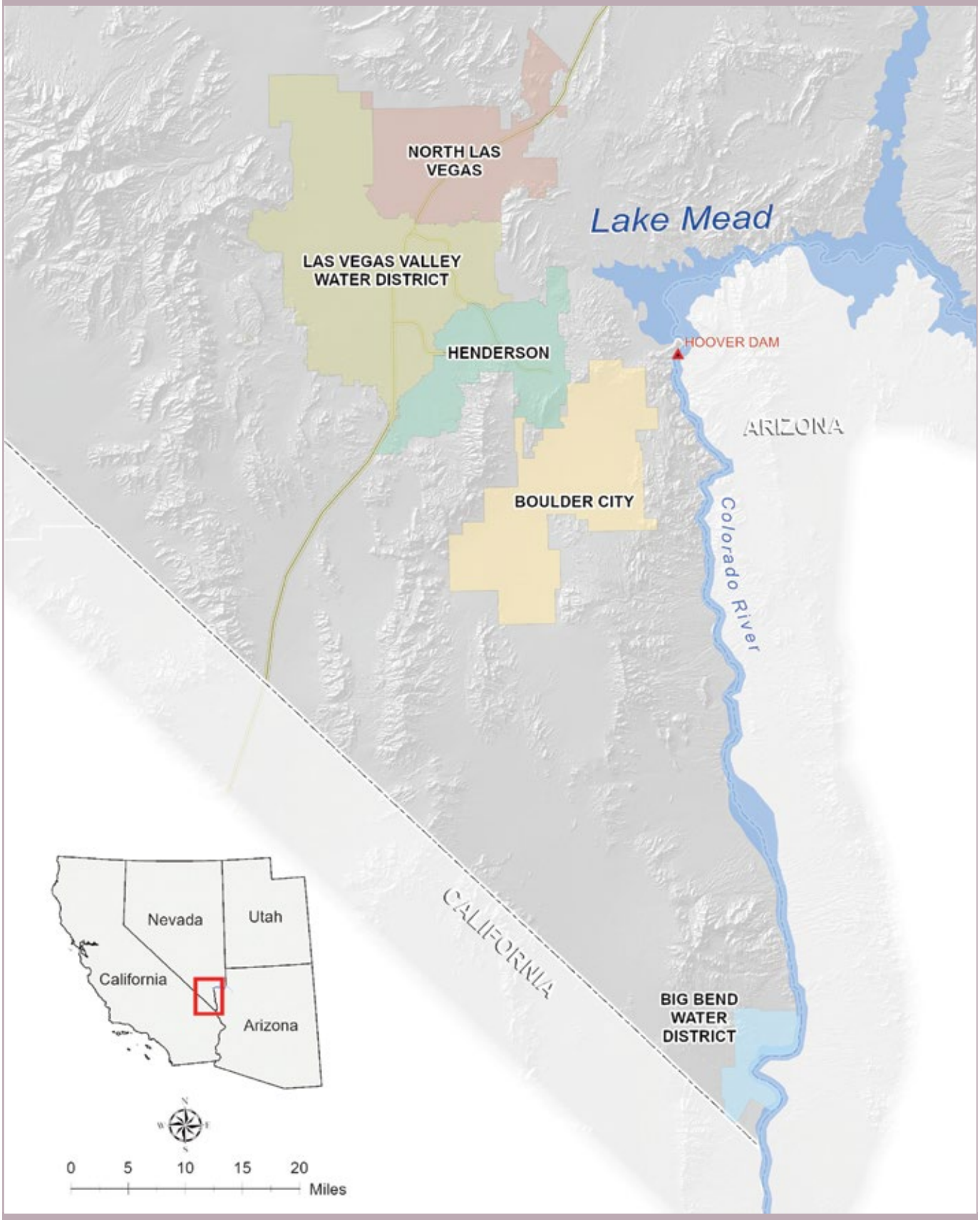
Since 1991, the SNWA has worked diligently to develop and manage a flexible portfolio of diverse water resource options resulting from years of in-state, interstate and international collaborations. These resources include groundwater and surface water rights in the state of Nevada, Colorado River water, as well as temporary resources that are stored in the form of storage credits. A detailed summary of the SNWA Water Resource Portfolio is provided in Chapter 3.

Construction and Operation of Regional Water Facilities

To meet the community's current and long-term water resource needs, the SNWA is responsible for constructing and operating regional water facilities. The SNWA has completed several improvements and expansions to these facilities over the years to increase capacity to 960 million gallons per day (MGD). Pumping facilities and state-of-the-art treatment and laboratory facilities were also constructed and updated to ensure the availability of high-quality, reliable water supplies. These efforts were phased, coming online just in time to meet demands.

As discussed in Chapter 2, the SNWA completed construction of a new raw water intake (Intake No. 3) and Low Lake Level Pumping Station (L3PS) at Lake Mead in response to changing hydrologic conditions in the Colorado River Basin. These facilities offset risk associated with future Lake Mead water level declines and preserve the community's access to available Colorado River water supplies, even under extremely

FIGURE 1 **SNWA Purveyor Service Areas**



The SNWA is responsible for managing Southern Nevada's long-term water resources, constructing and operating facilities and promoting water conservation.

The SNWA's 2025 Plan is based on an integrated resource planning process that involved public stakeholders.

Planning for the Future

The SNWA Cooperative Agreement was amended in 1996 to require adoption of a Water Resource Plan. The SNWA adopted its first Water Resource Plan that same year.[6] The plan is reviewed annually and updated as needed to reflect changing developments in Southern Nevada's overall water resource picture.

The SNWA has a long history of engaging the public in major planning decisions and has formed a number of citizen advisory committees over the years to make recommendations on critical issues. Committees have considered topics ranging from regional water facilities, water resources and water quality issues to capital funding and drought response.

The SNWA's 2025 Plan is based on input from the Integrated Resource Planning Advisory Committee 2020 (IRPAC 2020). The committee was formed in 2019 to evaluate and make recommendations on issues of interest to the SNWA's long-term planning efforts. The committee met nine times through mid-2020 and made recommendations on the topics of water infrastructure, water resources, water conservation and regional water rates. The SNWA Board of Directors considered and approved the committee's recommendations in September 2020 (Appendix 3).

low reservoir conditions. As detailed in Chapter 3, the SNWA is pursuing water projects with Colorado River partners and will use these facilities to access current and future Colorado River supplies.

Water Conservation

The SNWA and its member agencies have worked diligently over the years to maximize the availability of existing water supplies and reduce overall water demands. The SNWA adopted its first water conservation plan in 1995 and has updated the plan several times since.[4,5] During this timeframe, the community has consistently set and achieved aggressive water conservation goals.

Significant and sustained conservation progress remains critically important for our desert community, particularly as changing hydrologic, climate and economic conditions are anticipated to impact supply and demand. To this end and to help ensure supply and demand balance, the SNWA Board of Directors adopted a new conservation goal in 2021.

The 2025 Plan provides greater insight into changing conditions and details the water supply and demand implications of continued conservation over the SNWA's long-term planning horizon. It also details the planned trajectory of the community's new conservation goal and summarizes progress, including significant efforts planned or underway to increase conservation and efficiency gains.

As noted on left and described in Chapter 3, the SNWA has identified additional actions that will support conservation goal achievement. Some actions are based on recommendations from the Integrated Resource Planning Advisory Committee (IRPAC 2020) while others were identified by the SNWA as part of ongoing strategic planning efforts. Many of these initiatives are being implemented now and will help the SNWA to achieve its current conservation goal while countering upward pressures associated with climate change and system age.

Conservation and efficiency improvements will require continued support from the SNWA's member agencies and from the community at large.

2025 Water Resource Plan

The SNWA's 2025 Plan provides a comprehensive overview of water resources and demands in Southern Nevada and discusses factors that will influence resource availability and use over a 50-year planning horizon. The plan does not intend to specifically address all aspects of water resource

management and development; rather, it serves as a companion to other detailed planning documents, including:

- SNWA Major Construction and Capital Plan
- SNWA Water Conservation Plan
- Regional Water Quality Plan for the Las Vegas Valley Watershed
- Annual Operating Plan for the Las Vegas Valley Watershed
- SNWA Financial Budget and Comprehensive Annual Financial Report
- SNWS Operating Plan
- SNWA Water Budget

Integrated Resource Planning

As part of its overall water resource planning efforts, the SNWA has completed a number of integrated water resource planning processes. Integrated resource planning applies important concepts to traditional resource and facility planning, including involvement of the public early in the planning process as well as frequent reassessment, particularly as conditions change. These efforts have helped identify the appropriate combination of resources, facilities, conservation programs and funding formulas needed to meet current and future water demands in Southern Nevada.

Recommendations resulting from these integrated resource planning processes are presented to the SNWA Board of Directors for consideration and incorporated into overall water resource planning efforts as approved. The 2025 Plan incorporates the recommendations from IRPAC 2020, which were approved by the SNWA Board of Directors in September 2020. (Appendix 3).

CHAPTER SUMMARY

The SNWA Water Resource Plan is an important tool designed to help the SNWA anticipate and plan for future water supply and related facility needs, which have changed significantly over the years.

Since its formation in 1991, the SNWA has worked closely with its member agencies to meet the region's long-term water demands by acquiring and managing current and future water supplies; constructing and operating necessary facilities; and setting and achieving conservation goals. In addition, the SNWA has developed partnerships with other Colorado River Basin States (Basin States), working collaboratively to maximize opportunities for the flexible use of Colorado River resources.

These efforts will continue to be of paramount importance in the years to come, particularly as changing hydrology, climate and economic conditions are anticipated to create new uncertainties for Southern Nevada's short- and long-term water resource needs. These challenges, as well as the SNWA's associated response efforts, are discussed in Chapter 2. The balance of this document provides a comprehensive overview of the SNWA Water Resource Portfolio (Chapter 3); a detailed discussion of how the SNWA plans to meet current and future regional water demands (Chapter 4); and a discussion on environmental initiatives underway to support water resource development and management efforts (Chapter 5).

ENDNOTES

1 "Water: A History of Las Vegas, Volume 1," 1975, Florence Lee Jones and John F. Cahlan, p.53.

2 "The Hoover Dam Documents," 1948, Ray Lyman Wilbur and Northcutt Ely.

3 "WRMI Process—Water Supply Planning for the Las Vegas Region," January 1991, published May 1992, prepared for Las Vegas Region Water Utilities by Water Resources Management, Inc.

4 "Memorandum of Understanding Regarding Southern Nevada Water Authority's Water Conservation/Efficiency Programs," January 26, 1995, amended March 18, 1999, SNWA.

5 "Southern Nevada Water Authority Joint Water Conservation Plan," November 2024, SNWA.

6 "Southern Nevada Water Authority 1991 Cooperative Agreement," between 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 (previously Clark County Sanitation District), and Las Vegas Valley Water District. Amended 1994 and 1996.