

PLAN INTRODUCTION

THIS CHAPTER PROVIDES AN OVERVIEW OF SNWA 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 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, LVVWD entered into agreements with what is now known as Basic Management Inc. (BMI) for expansion of BMI'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 BMI pipeline, 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.

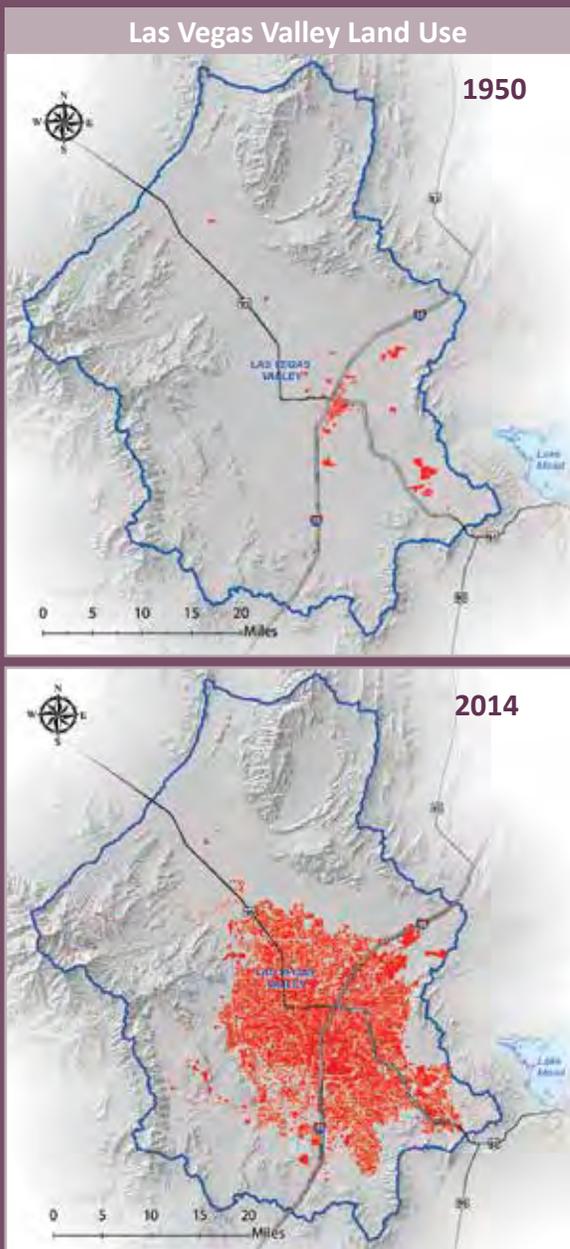
CREATION OF SNWA

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. Over the next century, a series of social and economic developments—including legalized gaming, the construction of Hoover Dam, industrial production for the Second World War, development of a military air base, atomic testing, tourism and trade shows, and ongoing evolution of mega-resorts with world class retail and entertainment—steadily increased local population and associated demands for water.

From an estimated population of more than 40,000 in 1950 to more than 2 million by 2014, the Southern Nevada region has experienced change faster than almost any other region in the nation during this time period. Population density in Southern Nevada is the highest in the interior western U.S.⁴



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 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, 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, 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, SNWA is responsible for constructing and operating regional water facilities, including the SNWS, which was expanded in 2002 to include the River Mountains Water Treatment Facility. The SNWA has completed a number of improvements and expansions to these facilities over the years to increase capacity to 900 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.

FIGURE 1 SNWA Purveyor Service Areas



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

Planning for the Future



The SNWA's 2015 Water Resource Plan is based on an Integrated Resource Planning Process that involved public stakeholders.

In 1996, the SNWA Cooperative Agreement was amended to require adoption of a Water Resource Plan. The SNWA's first Water Resource Plan was adopted in 1996;⁶ the SNWA has reviewed its plan annually since then, adopting revisions as needed.

The plan reflects changing developments in Southern Nevada's overall water resource picture. Since the plan's inception, those developments have come principally from water demand changes as well as from landmark changes in rules, agreements or other factors affecting the region's water supplies.

In 2014, SNWA's 21-member Integrated Resource Planning Advisory Committee was asked to address issues related to the Colorado River drought, the effects of climate change, and the effects of declining water reservoir levels on the reliability of Southern Nevada's municipal water system. The committee was formed in 2012 to assist SNWA with its long-term planning efforts and was comprised of citizens representing diverse areas of the community. Phase 1 and 2 committee recommendations were presented to the SNWA Board of Directors in September 2013 and December 2014, respectively.

As discussed in Chapter 2, SNWA recently completed construction of a new raw water intake (Intake No. 3) and is working to construct associated pumping facilities at Lake Mead to preserve access to existing supplies in response to low Lake Mead water levels due to extraordinary drought conditions in the Colorado River Basin.

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 community's first water conservation plan was adopted in 1995;⁵ since then, the community has consistently set and achieved aggressive water conservation goals. As of 2015, the community remains on target to achieve its current goal.

To promote conservation efforts, SNWA developed and implements a comprehensive water conservation program consisting of regulation, pricing, education and incentives designed to work together to improve water efficiency and reduce demands. The SNWA member agencies also implemented a number of water use and development ordinances, which have since become a permanent part of the community's overall conservation effort. Information on Southern Nevada's conservation efforts is provided in Chapter 3.

2015 Water Resource Plan

The SNWA's 2015 Water Resource 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 Water Budget
- 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

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 2015 SNWA Water Resource Plan incorporates the recommendations from SNWA's most recent Integrated Resource Planning Advisory Committee, which were approved by the SNWA Board of Directors in December 2014 (see Appendix 1 and 2).

CHAPTER SUMMARY

The SNWA Water Resource Plan is an important tool designed to help 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 promoting conservation. In addition, 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 climate change and drought are anticipated to reduce the availability of supplies, and as the Southern Nevada region rebounds from the effects of economic downturn. These challenges, as well as 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 SNWA plans to meet current and future demands (Chapter 4); and a discussion on SNWA 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 Metropolitan Statistical Area Distance Profiles 2010, U.S. Census Bureau.
- 5 "Memorandum of Understanding Regarding Southern Nevada Water Authority's Water Conservation/Efficiency Programs," January 26, 1995, 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.

