



Southern Nevada  
Water Authority

# **Conservation Plan 2009-2013**

**May 2009**

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## **OVERVIEW OF THE SOUTHERN NEVADA WATER AUTHORITY**

The Southern Nevada Water Authority (SNWA) was formed in 1991 by a cooperative agreement among seven water and wastewater agencies in Southern Nevada:

- 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

Collectively, these agencies provide water and wastewater services to nearly 2 million citizens in Las Vegas, North Las Vegas, Henderson, Boulder City, Laughlin and portions of unincorporated Clark County.

As the wholesale-water provider to Southern Nevada's municipal water agencies, the SNWA is responsible for managing the region's current and future water resources. This includes managing all water supplies available to Southern Nevada through an approved water budget; managing regional water resources and conservation programs; ensuring regional water quality meets or exceeds state and federal standards; water-resource planning; and building and operating regional facilities.

Although the SNWA plays a critical role in managing water, it does not regulate water use by end users or establish customer rates. Such policies, codes and regulations are implemented through its member agencies. In terms of regulatory issues, the SNWA's role is to facilitate information sharing and collaboration. In recent years, this has resulted in the creation of successful community-wide water-efficiency policies, such as permanent mandatory watering restrictions and limitations on lawn installation in new construction. Education, outreach and incentive programs are largely managed by the SNWA through committed involvement from its member agencies, community stakeholders and the public.

## **THE ROLE OF CONSERVATION IN RESOURCE PLANNING**

Water conservation plays a critical role in water-resource planning and management. The ability to increase efficient water use and reduce water waste has a direct impact on the amount of resources that will be needed in the future. The more successful a community's conservation, the lower the community's projected demand for water (relative to levels that would have occurred in the absence of conservation) becomes.

To support its water planning and management responsibilities, the SNWA developed and maintains a Water Resource Plan. The 2009 Water Resource Plan (Plan) projects demands and identifies a portfolio of existing and planned water supply options available to meet those demands over time. The Plan, first developed in 1996, is reviewed annually and updated as needed. As demonstrated in past revisions, adjustments to the Plan are made to account for various uncertainties such as drought, conservation achievements, resource availability and changes in population and demand projections.

The SNWA has worked to develop and manage a flexible portfolio of diverse water resource options. This approach is commonly used in the field of resource planning and is essential in responding to future conditions that may result from drought or other conditions that may limit the availability of resources. The portfolio approach allows the SNWA to assess its overall resource options and make appropriate decisions regarding what resources to bring on-line when necessary. The 2009 Water Resource Plan includes water conservation, water recycling, Colorado River water and groundwater in its portfolio of current and future resources that will be used to meet demands as needed.

Water conservation is a key resource in the SNWA Water Resource Plan, helping to lower projected demands and extend the availability of current and future water resources. The 2009 Plan projects an estimated saving of 276,000 acre-feet of water in 2035 by achieving its current water conservation goal. Gradual savings increases are estimated to occur in following years.

While conservation is an important water management tool, the more aggressive and responsive a community is to calls for conservation, the more difficult it becomes to realize additional conservation gains. This phenomenon of diminishing returns is referred to as “demand hardening.” For communities where a majority of the water supply comes from one source (such as Southern Nevada), the prospect of demand hardening requires development of additional alternative water supplies regardless of conservation levels achieved.

This concept has become increasingly important in recent years. The Colorado River, which provides approximately 90 percent of Southern Nevada’s water supply, continues to experience serious and sustained drought conditions. As a result, Lake Mead’s water levels have dropped more than 100 feet in the past ten years, and Lake Mead is at about half of capacity in early 2009. Mandatory water shortages and critical infrastructure outages are possible should these conditions persist. As a result, the SNWA continues to aggressively pursue development of non-Colorado River resources, work with the Colorado River Basin States on management strategies and initiate construction of a new Lake Mead intake to preserve system capacity.

## **CONSERVATION ACHIEVEMENTS**

Since 1991, the SNWA has developed and implemented one of the most progressive and comprehensive water conservation programs in the nation. Success is measured through the implementation and achievement of regional conservation goals. Over time, these goals have been adjusted to induce higher levels of conservation. An overview of past SNWA conservation efforts is outlined below.

In the mid-1990s and using 1990 as a base year, the SNWA established a goal of 25 percent conservation by 2010. This is equivalent to roughly 280 gallons per capita per day (GPCD).

During the mid-1990s, the SNWA purveyor members also agreed to follow a series of conservation "best management practices" published by the Bureau of Reclamation. The agreement was an important first step in implementing more consistent conservation measures across the service boundaries of SNWA purveyor member agencies. The agreement was updated in 1999 and a comprehensive five-year conservation plan was approved by the SNWA Board of Directors. An update to the conservation plan was submitted to and approved by the Bureau of Reclamation in 2004.

Southern Nevada made consistent progress towards its conservation goal throughout the 1990s. However, beginning in 2000, levels of conservation began to decline, falling short of the interim goals needed to reach a 25 percent conservation goal by 2010. In response, the SNWA and its member agencies launched a conservation strategic planning process in 2001. In 2002, as drought conditions in the Colorado River Basin became more severe, the SNWA member agencies recognized that a more immediate and actionable community response was necessary. As a result, the conservation strategic planning effort evolved to address drought conditions and ultimately set the stage for development of the SNWA Drought Plan. The Drought Plan was approved by the SNWA Board of Directors in February 2003 and implemented thereafter by SNWA's member agencies.

Following the implementation of the Drought Plan in 2003, conservation and drought savings rebounded with a 23.1 percent savings for that year. A year later, the community surpassed the 25 percent conservation goal set in 1996 – six years ahead of schedule.

In an effort to maintain and build upon this success, a citizens advisory committee recommended that the SNWA pursue a strategy to decrease total water demand from 2004 levels to 250 GPCD by 2010 and to 245 GPCD by 2035. The SNWA Board of Directors adopted this goal in 2005.

The following years witnessed extraordinary conservation achievements. Participation in the SNWA's rebate programs realized record-breaking results, including peak participation levels in almost every area. A summary of key SNWA conservation accomplishments is provided in **Appendix A**.

These efforts resulted in a reduction of Southern Nevada's annual water consumption by nearly 21 billion gallons (between 2002 and 2008), despite a population increase of 400,000 people during that span. Available data indicate that in 2008 the SNWA achieved its 2005 conservation goal of 250 GPCD – two years ahead of schedule.

These past achievements provide the basis for current efforts. The following sections provide an overview of the SNWA's current conservation goal and a description of how the SNWA will make progress toward this goal during the 5-year planning period. A table with discussion and analysis also is provided in **Appendix B**.

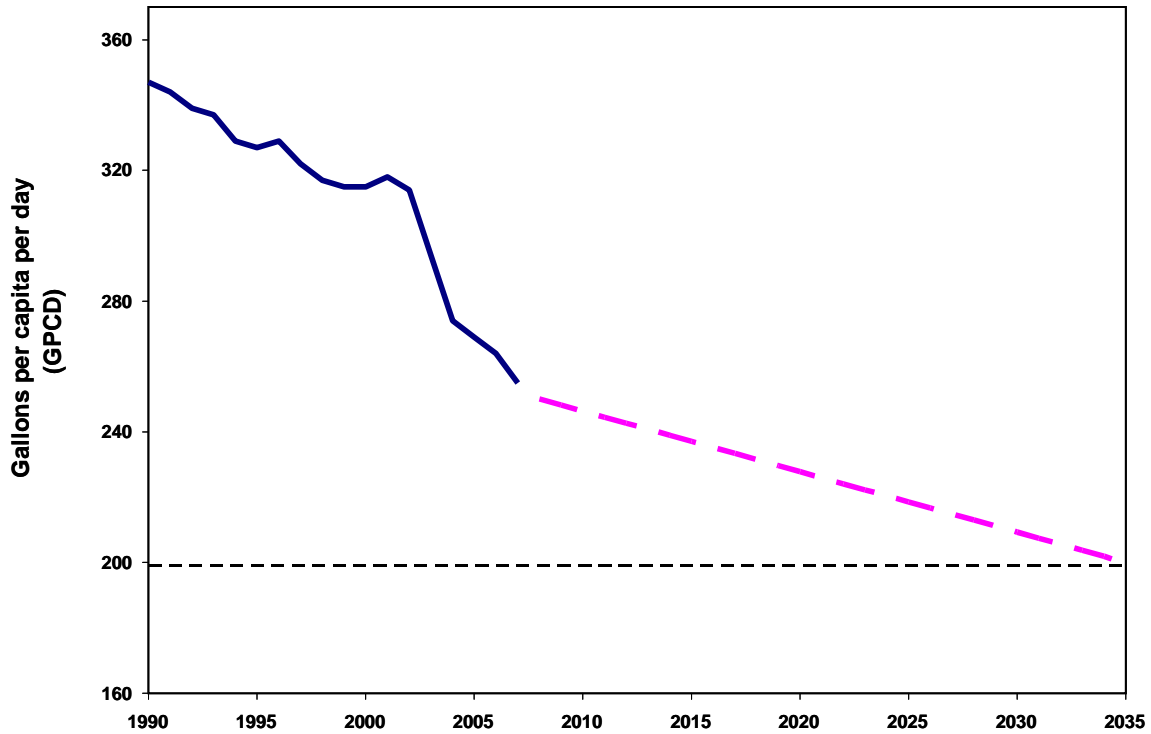
The 2009-2014 Conservation Plan will be submitted to the U.S. Bureau of Reclamation in fulfillment of the requirements for Section 210(b) of the Reclamation Reform Act of 1982 and to the State of Nevada Department of Conservation and Natural Resources, Division of Water Resources in fulfillment of the requirements for Nevada Revised Statutes Chapter 540.

**What is GPCD?** GPCD is a metric used by some communities to measure water consumption. For the SNWA, it provides a general means of monitoring water-use trends and for tracking conservation progress. A variety of factors influence GPCD including climate, demographics, water-use accounting practices and economic conditions. SNWA calculates total system GPCD by first totaling water use for its member agencies, adjusting that water use to account for weather variations, and then dividing by the estimated SNWA population within the SNWA's member agencies' jurisdictions. That number is then divided by the days in a year (weather adjusted total use/total population/365 days).

## CONSERVATION GOALS

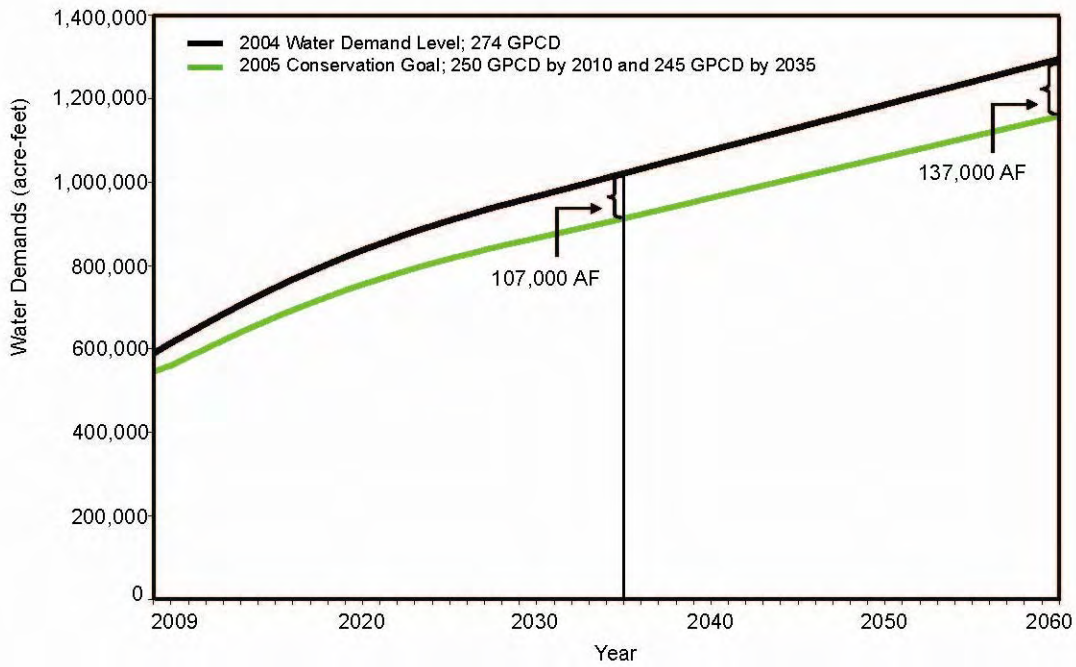
Building upon previous success, the SNWA Board of Directors in 2009 adopted a new conservation goal of 199 GPCD by 2035 for the community. Figure 1 outlines the SNWA's previous conservation achievements (described above) and provides projected achievements through the year 2035.

**Figure 1 – Conservation Achievements (1990-2007) and Projections (2008-2035)**



The SNWA estimates that more aggressive conservation outreach and education, and continuance of incentive programs, rate setting and regulation will yield these additional GPCD savings. Figures 2 and 3 compare the estimated volume of water that would be saved by conservation pre- and post-adoption of the SNWA's current conservation goal. A table with projected annual GPCD reductions for the 2009-2014 planning period is provided in **Appendix C**.

**FIGURE 2 – SNWA Water Demands and Conservation (250 GPCD by 2010 and 245 GPCD by 2035 Conservation Goals)**



**FIGURE 3 – SNWA Water Demands and Conservation (199 GPCD by 2035 Conservation Goal)**

