

A photograph of a river with white water rapids. The water is turbulent and white with foam as it flows over dark rocks. The background is filled with dense, tall grasses and reeds, some of which are dry and brown. The lighting is bright, suggesting a sunny day. The text "SNWA WATER RESOURCES" is overlaid in the lower half of the image.

**SNWA WATER  
RESOURCES**



### **A MISSION OF WATER MANAGEMENT**

The primary mission of the Southern Nevada Water Authority (SNWA) is to develop and manage the resources and infrastructure necessary to meet the region's water needs.

### **RESOURCE PLANNING AND BUDGETING**

As part of its long-term water resource planning initiative, the SNWA projects delivery demands several decades in advance and continuously adjusts to changing conditions by reviewing and prioritizing its menu of resource options.

### **COMMITMENT TO CONSERVATION**

In an effort to improve water-use efficiency in Southern Nevada, the SNWA in the early 1990s developed a long-term water conservation program for Southern Nevada, while water agencies implemented a multi-tier rate structure to promote conservation. Among the many initiatives undertaken to bolster water efficiency, local municipalities adopted turf restriction codes for new and existing residential and commercial properties while strengthening water-waste enforcement. Additionally, the SNWA greatly enhanced its Water Smart Landscapes turf-replacement incentive program, prompting the removal of millions of square feet of grass. About 70 percent of residential water use is for outdoor irrigation. The SNWA has also supplemented its conservation programs with a drought plan in response to the worst drought on record.

### **A REGIONAL RESOURCE**

In addition to providing approximately 90 percent of Southern Nevada's municipal water, the Colorado River supports more than 25 million people in seven states and Mexico while providing water for a portion of the nation's agriculture. Stretching from Wyoming to the Gulf of California in Mexico, the nation's sixth-largest river spans approximately 1,400 miles and is fed by a drainage area encompassing nearly 250,000 square miles.



## THE COLORADO RIVER

### REGULATING THE RIVER

The Colorado River is among the most regulated and litigated waterways in the world. The Colorado's water is divided among the "upper basin" states—Wyoming, Colorado, New Mexico and Utah—and the "lower basin" states—California, Arizona and Nevada. What is commonly referred to as the "Law of the River" is not actually a single law but rather a complex series of agreements developed to manage the Colorado River. When the lower basin's water flows were divided among California, Arizona and Nevada, the Silver State received only 300,000 acre-feet annually—2 percent of the river's average annual flows. By contrast, California received 4.4 million acre-feet and Arizona 2.8 million acre-feet.

### RETURN FLOW CREDITS

Nevada's allocation of Colorado River water is based upon "consumptive" or "net" use. This framework allows Nevada to withdraw more than 300,000 acre-feet from Lake Mead on the condition that it returns enough water to the river to stay within its consumptive use allocation. Southern Nevada accomplishes this by treating the valley's wastewater to state and federal standards, then returning the reclaimed water to Lake Mead. In 2003, return flows provided our community about 150,000 additional acre-feet of water. This system effectively means that the water used inside Southern Nevada's homes, businesses and resorts has virtually no consumptive impact on the community's water supply. Only water that is not captured by the sanitary sewer system—primarily water used outside for landscape irrigation—counts against Nevada's allocation.

# CHANGING CONDITIONS



## INTERIM SURPLUS GUIDELINES

The Secretary of the Interior historically had the authority to determine whether “surplus” water was available beyond states’ base allocations from the Colorado River. A 1964 Supreme Court Decree defined the terms, specifying that a surplus could be declared, “If sufficient mainstream water is available for release.”

Because the Colorado River’s flows vary dramatically from year to year, it is impossible to know in which future years a surplus will occur and what, if any, flows will be available to Southern Nevada. The Interim Surplus Guidelines (ISG), signed in 2001, defined specific reservoir conditions under

which surplus water would be available to Southern Nevada and other lower Colorado River basin users. The ISG defines surplus available through 2016 based on the condition of reservoir levels.

## A HISTORIC DROUGHT

Because the availability of surplus flows is contingent upon the condition of the reservoir system, the amount of water—if any—that Nevada is allowed to withdraw beyond its basic allocation of 300,000 acre-feet per year is tied to the elevation of Lake Mead. Beginning in 2000, the upper basin of the Colorado River entered a drought of historic severity. By mid-2004, Lake Mead’s water level had dropped approximately 80 feet, severely impacting Nevada’s ability to access additional water from the river. In response, the SNWA worked closely with the community to develop and implement a three-stage drought management plan to reduce demand and account for the change in interim surplus water availability.

# RESOURCE PORTFOLIO

## RESOURCE DIVERSITY

Maintaining a menu of water resource options allows the SNWA to quickly respond to changing conditions. Below are some of the existing and potential resources identified in the Water Resource Plan that may be used to supplement water from the Colorado River.

## SAVINGS ACCOUNTS

The SNWA has made water savings deposits in the Arizona and Southern Nevada water banks. Under an agreement between the two states, Arizona will use its best efforts to store up to 1.2 million acre-feet of water in its groundwater systems for Southern Nevada's future use. At the end of 2003, Southern Nevada already had accumulated more than 100,000 acre-feet of water in this system, while storing approximately 275,000 acre-feet of additional water in the Southern Nevada water bank.

## SHALLOW GROUNDWATER

Much of the excess water used for landscape irrigation in the Las Vegas Valley seeps into the ground and is trapped near the surface in what is referred to as the "shallow" aquifer. Although reclaiming this water for potable or irrigation use involves expensive treatment processes, this source has potential as a future resource.

## RECLAIMED NON-COLORADO RIVER WATER

Unlike the water drawn from Lake Mead, groundwater from the Las Vegas Valley returned to the river system does not generate return flow credits for our community. As the SNWA develops additional non-Colorado River resources outside the Las Vegas Valley, it is also exploring opportunities to reclaim or obtain credit for the treated wastewater that originates from these sources.

## DESALINATION AND WATER TRANSFERS

Advances in technology may alleviate high costs and environmental constraints associated with sea water desalination, making it a potentially viable future water resource. Transfer of conserved or Tribal water or agricultural-to-municipal transfers are other potential resource options.

# IN-STATE WATER RESOURCES



The SNWA is presently moving forward with three projects that could supplement existing groundwater and Colorado River supplies: Development of groundwater in Clark County's Three Lakes Valley; surface water development from the Muddy and Virgin rivers; and development of groundwater in Clark, Lincoln and White Pine counties. Although these projects were not originally scheduled for development until 2016 or later, the drought on the Colorado River system requires the SNWA to accelerate work on such efforts. As an organization committed to the principle of sustainability, the SNWA will work closely with the appropriate agencies and stakeholders throughout the program's planning and implementation phases.

## **SURFACE WATER DEVELOPMENT**

The SNWA holds surface water rights on the Muddy and Virgin rivers that could potentially provide more than 120,000 acre-feet of water annually to the Las Vegas Valley. The surface water development project will involve a delivery method that will be determined based upon a variety of environmental and operational factors. The SNWA is committed to responsible environmental practices, and will conduct all of the necessary studies to ensure the environment is not adversely impacted.

## **THREE LAKES VALLEY GROUNDWATER DEVELOPMENT**

In Clark County, close to the Las Vegas Valley, the SNWA has plans to convey water from groundwater production wells. Pipeline and transmission facilities will be located within an existing utility corridor, minimizing environmental impacts and increasing delivery efficiency from this developed area.

## GROUNDWATER DEVELOPMENT

Within neighboring counties are numerous groundwater aquifers. Studies indicate that there is enough water to serve rural communities and existing water rights holders, maintain the hydrologic needs of the environment and supplement Southern Nevada's water resources. In-state, non-Colorado River water resources have represented a key part of the SNWA's water resource portfolio. In fact, work on projects such as the acquisition of groundwater rights from northern Clark County's Coyote Spring Valley has been active for several years.

The SNWA is committed to ensuring the development of these resources does not come at the expense of rural lifestyles or the environment. Extensive outreach

will be conducted in the communities of origin to address questions and concerns about the groundwater development projects. Extensive aquifer monitoring programs also will be conducted to protect sensitive resources. The Nevada State Engineer, who issues groundwater permits and is charged by law with protecting the public interest, closely regulates groundwater development.

For more information, please contact the Water Authority or log on to [snwa.com](http://snwa.com). You can reach us toll free at (866) 300-5600 or at (702) 258-3930. Send written comments to:

SOUTHERN NEVADA WATER AUTHORITY  
PUBLIC SERVICES DEPARTMENT, MS#780  
1001 SOUTH VALLEY VIEW BOULEVARD  
LAS VEGAS, NV 89153





SNWA MEMBER AGENCIES:

BIG BEND WATER DISTRICT

BOULDER CITY

CITY OF HENDERSON

CITY OF LAS VEGAS

CITY OF NORTH LAS VEGAS

CLARK COUNTY WATER RECLAMATION DISTRICT

LAS VEGAS VALLEY WATER DISTRICT