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EXECUTIVE SUMMARY

The Southern Nevada Water Authority (SNWA) was formed in 1991 by a cooperative agreement among the following 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

The Big Bend Water District provides water service to Laughlin. The cities of Boulder City and Henderson provide water and wastewater service to their respective communities. The City of Las Vegas provides wastewater service to its residents. The City of North Las Vegas provides wastewater service to its residents and water service to its residents and adjacent portions of Las Vegas and unincorporated Clark County. The City of North Las Vegas will be constructing its own water reclamation facility and currently has contract wastewater treatment services with the City of Las Vegas and the Clark County Water Reclamation District. The Clark County Water Reclamation District provides wastewater service to unincorporated Clark County and Laughlin. The Las Vegas Valley Water District provides water service to Las Vegas and portions of unincorporated Clark County.

The SNWA is the wholesale water provider to municipal water agencies in the Las Vegas Valley and Boulder City. In addition to its wholesale water treatment and delivery responsibilities, the SNWA acquires and manages long-term water resources for Southern Nevada. From its inception, the SNWA has worked to seek new water resources for Southern Nevada, manage existing and future water resources, construct and manage regional water facilities and promote conservation.

The SNWA prepared its first Water Resource Plan in 1996. Since then, the plan has been reviewed annually and updated as needed. The 2008 plan represents the seventh revision in 12 years.

This plan provides a comprehensive overview of water resources and demands in Southern Nevada. Chapter 1 provides a history of water resources and demands in the region from 1905 to present, highlighting various steps taken by state and local agencies to meet water needs over time. Chapter 2 describes the SNWA water resource portfolio, highlighting the critical role that conservation plays in efforts to meet future demands, as well as resource options available to the SNWA to meet future water demands. Chapter 3 discusses the SNWA approach to demand forecasting and demand management, and outlines projected demands and the options projected to be available to meet those demands. Chapter 4 concludes the plan by discussing the environmental issues that will influence future resource planning in Nevada and the Colorado River Basin.

To plan for various long-term uncertainties, the SNWA committed early on to identify new water resources and develop a portfolio of resource options to help meet potential future demands. The portfolio is comprised of the following:

Water Conservation

- 250 gallons per capita per day (GPCD) by 2010
- 245 GPCD by 2035

Colorado River Water

- Nevada basic apportionment
- Return-flow credits
- Unused Nevada apportionment
- Flood Control Surplus and Domestic Surplus
- Intentionally Created Surplus
 - Drop 2 Reservoir storage
 - Muddy River surface water rights
 - Virgin River surface water rights
 - Coyote Springs groundwater rights

- Arizona Water Bank
- California Water Bank
- Southern Nevada Water Bank
- Colorado River augmentation
- Colorado River transfers/exchanges

Groundwater

- Las Vegas Valley groundwater
- In-state groundwater resources

Reclaimed Water Resources

- Reclaimed Colorado River water
- Full consumptive use / recycled in-state groundwater resources
- Current reclaimed water resources

As with previous plans, an underlying principle of the 2008 Water Resource Plan is to maximize the use of existing resources, while maintaining the flexibility to adjust planning as circumstances or conditions warrant.

While acquiring and developing these resources, the SNWA implemented aggressive conservation programs designed to extend the availability of existing supplies. To sustain and promote conservation in Southern Nevada, the SNWA and its member agencies launched a strategic-planning process in 2001. Around this time, the Colorado River Basin began to experience drought conditions that, over the next few years, quickly became one of the worst droughts in the basin's recorded history. As a result, the conservation strategic planning effort evolved in 2002 to address drought conditions, providing the framework for the development of the SNWA Drought Plan. The Drought Plan was adopted by the SNWA Board and member agencies in 2003. The drought has persisted since this time resulting in substantial declines to Lake Mead and Lake Powell water levels. By the end of 2007, the combined storage of Lake Mead and Lake Powell – the two primary reservoirs in the Colorado River system – was less than 50 percent.

The impacts of the drought have required the SNWA to continue its emphasis on conservation in Southern Nevada. At the same time, the SNWA has accelerated development of groundwater rights in Clark, Lincoln and White Pine counties. The development of

some or all of the in-state resources has potential implications for a wide range of operational issues, including treatment and delivery system capacity, return-flow credits, reclaimed water flows to Lake Mead, project funding and water quality – as well as for larger issues such as environmental protection and rural economic development.

To help facilitate this effort, the SNWA launched an integrated water planning (IWP) process in 2004. The IWP process included the formation of an Integrated Water Planning Advisory Committee (IWPAC) that developed 22 recommendations and presented them to the SNWA Board of Directors on November 17, 2005 (Appendix 1). The IWPAC recommendations focused on conservation, resource development, resource management and funding.

In 2004 and ahead of schedule, the SNWA achieved its previous goal of 25 percent conservation by 2010. The SNWA recognized that more could be done to reduce overall water use. The IWPAC recommended a new conservation goal of 250 gallons per capita per day (GPCD) by 2010 and 245 GPCD by 2035. Figure 1 reflects the projected reduction in overall demands this new goal will produce.

The IWPAC also recommended that the SNWA move forward with the development of its in-state resources. To this end, the SNWA continues to work through the necessary state and environmental processes, as well as with communities in the basins of origin, to ensure that the development of in-state water does not come at the economic or environmental expense of these areas. In September 2006, the State Engineer held an administrative hearing on a portion of these applications (for unused groundwater in Spring Valley) and in April 2007 the State Engineer granted 60,000 acre-feet per year (AFY), the pumping of which is limited to 40,000 AFY for the first ten years.

In conjunction with the Spring Valley water rights process, the SNWA entered into an agreement with the U.S. Fish and Wildlife Service, National Park Service, U.S. Bureau of Land Management and the U.S. Bureau of Indian Affairs, to work together to monitor and protect Spring Valley as the SNWA groundwater rights are developed and used.

In February 2008, the Nevada State Engineer held an administrative hearing for the SNWA's groundwater applications in Delamar, Dry Lake and Cave Valleys. A ruling is pending. Prior to the hearing, the SNWA entered into an agreement with the U.S. Fish and Wildlife Service, National Park Service, U.S. Bureau of Land Management and U.S. Bureau of Indian Affairs, and a separate stipulated agreement with the Moapa Band of Paiute Indians. Like the 2006 Spring Valley agreement, the SNWA will work cooperatively with the federal agencies to monitor and protect these areas as SNWA groundwater rights are brought on-line.

To assist in the implementation of the agreements and manage the long-term development and sustainable use of the basins' groundwater resources, the SNWA began acquiring various ranch properties in Spring Valley in mid-2006. In addition to substantial land holdings, the SNWA acquired surface and groundwater rights associated with the properties.

The SNWA has also been active in negotiations with the Colorado River Basin States involving the Colorado River interim operations and the development of surplus and shortage guidelines. In early 2006, the Seven Basin States presented a preliminary agreement to the Secretary of the Interior that outlined a variety of provisions for maximizing the efficient and flexible use of the Colorado River, as well as shortage guidelines for the Lower Basin. In January 2007, the SNWA Board of Directors approved an agreement with Arizona regarding the sharing of shortages declared by the Secretary. In December 2007, the Secretary issued his Record of Decision on Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead, which substantially endorsed the earlier agreement of the Seven Basin States. The details of these various agreements are discussed in detail in Chapter 2.

The Record of Decision creates a new type of surplus called Intentionally Created Surplus (ICS). The policy provisions for ICS enable the SNWA to utilize its purchased water rights on the Muddy and Virgin rivers that have a priority date preceding the effective date of the Boulder Canyon Project Act of 1928, as well

as a portion of its groundwater rights and applications in Coyote Spring Valley, by allowing the water to flow into Lake Mead for credit, allowing diversion of Colorado River water from Lake Mead at existing SNWA facilities at Saddle Island. This significantly reduces the infrastructure needed to bring these water resources to the Las Vegas Valley and enables the water to flow through environmentally sensitive areas of lower sections of the Muddy and Virgin rivers.

The 2008 Water Resource Plan reflects the planning adjustments taken by the SNWA in response to latest conditions. Figure 1 displays the projected demands, the amount of conservation projected to be achieved and the additional resources needed to meet future demands through 2055. The 2008 Water Resource Plan anticipates that achieving the current conservation goal will save the community approximately 100,000 AFY by the year 2035.

Several factors affect the timing of when and how resources are brought on-line, including drought, cost and environmental permitting. Having a portfolio of resource options gives the SNWA enough flexibility to accelerate or shift some resources if any of its other resources proves insufficient or unavailable over the long term. As discussed in Chapter 3, the SNWA's portfolio of water resources is expected to meet water needs through the year 2055.

Figure 1. Summary of Future Water Demands and Water Resources

