



FACTSHEET

SNWA and LVVWD Construction and Infrastructure History

The Las Vegas Valley Water District (LVVWD) is the sixth largest water utility in the United States in terms of maximum daily demand¹. As a result, the LVVWD and Southern Nevada Water Authority (SNWA) have constructed very significant and technically-challenging water projects throughout Southern Nevada.

About the LVVWD: The LVVWD is a not-for-profit water municipality that delivers treated water to more than 1 million people in Southern Nevada. The LVVWD also serves under contract as the operating agency of the SNWA.

About the SNWA: The SNWA is a political subdivision of the State of Nevada, created in 1991 to manage the region's water resources and develop solutions that will ensure adequate future water supplies for the Las Vegas Valley.

LVVWD Assets at a Glance:

- The LVVWD installed and maintains more than 4,500 miles of distribution pipeline ranging from 4-inch lines to 102-inch mains.
- Operates more than 1,600 miles of service laterals ranging between ¾ inches and 3-inches.
- More than 900 million gallons of water are stored in 68 reservoirs, which are served by 65 pumping stations throughout the Valley.
- 76 operating production wells are capable of drawing 175 million gallons of water per day from the local aquifer.

The majority (more than 80%) of the LVVWD's assets are below-ground with an estimated replacement-cost of more than \$6 billion dollars.

SNWA Assets at a Glance:

The SNWA developed a \$2 billion Capital Improvements Program (CIP) in 1995 as an effort to meet the increasing water needs of Las Vegas and its surrounding area. The CIP was retired in 2010 when it was considered to have met the objectives for which it was established.

Completed CIP Projects include:

- **Water Intake Improvements:** As one of the cornerstone projects of the CIP, intake improvements are among some of the most challenging, technically difficult and capital-intensive projects completed in Southern Nevada to date.
 - Completed in 2002, Lake Mead Intake No. 2 draws in water for the River Mountains Water Treatment Facility in Henderson. Water flows through the intake into a 1,600 foot-long and 14 foot-wide tunnel to a large, underground pumping forebay where submerged pumps draw water through 22 well shafts.

¹ 2010 American Water Works Association Membership Survey

- The Raw Water Pumping System collects water from Lake Mead via Intake No. 2, and includes three pumping stations, nearly nine miles of pipe and surge tanks.
- *Water Treatment System Projects:* Water drawn from Lake Mead is treated using advanced and modern treatment processes to assure that customers receive water that meets the latest drinking water standards.
 - The Alfred Merritt Smith Water Treatment Facility was expanded in 1997 from 400 to 600 million gallons per day (mgd) capacity. In 2003, a disinfection process using ozone gas was added to the treatment facility.
 - Completed in 2002, the \$267 million River Mountains Water Treatment Facility treats and distributes water to residents of Henderson and other parts of the Las Vegas Valley. Currently, the facility has a capacity of 400 mgd and is designed to easily be expanded, if necessary.
- *Transmission System Projects:* Transmission system project improvements involve laying miles of large diameter pipe and constructing pumping stations and reservoirs. Major projects noted below.
 - The East Valley Lateral increases the water delivery system's capacity and enhanced reliability for the eastern portion of the Las Vegas Valley. The lateral includes 14 miles of pipeline, two pumping stations and one reservoir for a total project cost of \$111 million.
 - The West Valley Lateral was one of the first CIP projects completed. Components included nearly seven miles of pipeline and one pumping station for a project cost of \$40.1 million.
 - The North Valley Lateral consisted of seven separate construction programs, which included 19 miles of pipeline, a pumping station, one reservoir, one reservoir pumping station and a rate of flow control station for a total project cost of \$91 million.
 - The South Valley Lateral serves Henderson and other areas throughout the valley's southern region. The project spans 27 miles, includes two pumping stations and two reservoirs for a total project cost of \$160 million.

In 2002, SNWA established a separate capital program called the Major Construction and Capital Plan to define and authorize projects and initiatives that did not fit the purpose and scope of the CIP. The MCCC remains in effect and is active to the present day.

Completed MCCC Projects include:

- Equity purchase of a 25 percent share of the Silverhawk 560 megawatt Electric Power Generation Facility.
- Modifications of Lake Mead Intake No. 1 to improve access to better quality water deeper in Lake Mead in response to falling lake levels caused by severe drought conditions.
- Purchase of office space for the SNWA Board of Directors and staff.
- Construction of a state of the art water quality laboratory to assure that water quality and treatment processes meet the goals and expectations of the community.
- Construction of water pumping, treatment and transmission facilities to convey water from Coyote Spring Valley in augmenting the water supply for Southern Nevada.
- Upgrade and repair of existing water facilities.

In addition, construction continues on Lake Mead Intake No. 3, a new intake designed to protect municipal water customers from water quality issues and reduced system capacity associated with declining lake levels. Components include an intake structure in Lake Mead, a five-mile intake tunnel and connection to Intake No. 2 pumping station. Future components include an underground pumping forebay, pumping station, electrical power connections and a discharge pipeline to Alfred Merritt Smith Water Treatment Facility.

Other capital endeavors of the SNWA include:

- *Artificial Recharge Project:* The SNWA has proven experience with integrated hydrologic management within the Las Vegas Valley where it has developed, implemented and operated an artificial recharge recovery program.
 - Includes 75 wells, which produce 40,600 acre-feet annually.
 - A basin groundwater flow model was developed and used as a management tool during the development and implementation of the recharge program.
 - The recharge program is one of the largest direct injection programs in the world-360,000 acre-feet of water has been recharged since program inception.

- *Las Vegas Wash:* The Las Vegas Wash is the primary urban runoff, wastewater and floodwater outlet from the Las Vegas Valley into Lake Mead, and is considered a critical component of Southern Nevada's water resources. The SNWA has been actively improving the Wash through infrastructure improvements and restoration activities for more than 10 years.
 - More than 12 erosion control structures have been constructed in the Las Vegas Wash at a cost of more than \$44 million.