SOUTHERN NEVADA WATER AUTHORITY

A Regional Solution

Milestones 1991-2011

EXHIBIT B-1 – LANDS
Document consists of 24 slides.
Entire Exhibit provided.
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About SNWA

The Southern Nevada Water Authority (SNWA) was formed in 1991 by a cooperative agreement among seven water and wastewater agencies. The SNWA is governed by a Board of Directors comprised of representatives from each of its member organizations, and maintains one of the country's largest and most-advanced water treatment and distribution systems.

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

Introduction

For more than two decades, the Southern Nevada Water Authority (SNWA) has worked to manage the region's water resources and develop solutions to ensure adequate and reliable water supplies for Southern Nevada. The ingenuity and approaches employed, as well as the results realized have helped to establish the SNWA as a leader in water management.

The SNWA was conceived from a need for a regional solution, and has worked with its member agencies, community stakeholders and residents to achieve a series of solution-focused initiatives. Locally, the SNWA unified water and wastewater interests to coordinate the construction of regional facilities, acquisition of water resources and conservation efforts, and in-turn established a regional voice to represent Southern Nevada's water needs to ensure dependable water sources. Through early actions, the SNWA also established an ethic of partnership that has fostered collaboration within our state, the Colorado River Basin and beyond. Cooperative agreements and integrated resource planning efforts have lead to significant accomplishments in water resources, water quality, conservation, engineering, planning, environmental stewardship and community involvement.

Alongside these accomplishments, challenges have been ever present—unprecedented population growth, record-breaking drought and economic downturn parallel the SNWA's past and present. These challenges spurred a tradition of unconventional approaches to meeting water demands. Landmark agreements, renowned programs and state-of-the-art projects were realized in part because of the issues facing our community.

During the last 20 years, Southern Nevada's landscape has changed. The community has grown from a population of approximately 750,000 to nearly two million. Residents have witnessed population booms and regional prosperity, as well as economic strains and housing-market uncertainty. It has been a period marked by contrasts that has required flexibility and innovation. Similarly, the SNWA has adopted a principle of flexibility to adjust planning as circumstances or conditions warrant, and maintains a spirit of innovation at its core.

The SNWA will continue to implement regional water initiatives, and respond to changing conditions to ensure a positive culture related to water use. The following report demonstrates significant SNWA milestones and offers an overview of regional water-management efforts.

Timeline

1991	SNWA Formation
1992	Additional Colorado River water gained through return-flow credits, and Southern California Edison and BMI agreements SNWA is a founding member of the Western Urban Water Coalition (WUWC)
1993	Cooperative Agreement for Banking Water Among Southern Nevada Municipal Purveyors effective Las Vegas Valley Water District (LVVWD) assumes SNWA management Major Construction Capital Improvement Projects Team formed
1994	Integrated Resource Plan Advisory Committee (IRPAC) formed
1995	Water Conservation Coalition formed SNWA Board of Directors (three) appointed to Colorado River Commission (CRC) Board IRPAC (Phase I) concludes and recommendations adopted by SNWA Board Capital Improvements Plan adopted by SNWA Board
1996	Conservation survey and assessment conducted Groundwater Management Citizens Advisory Committee formed Southern Nevada Water System Operation Plan adopted by SNWA Board IRPAC (Phase II) concludes and recommendations adopted by SNWA Board
1997	SNWA begins participation in Lake Mead Water Quality Forum Nevada State Legislature authorizes quarter cent sales tax for regional infrastructure Water Quality Citizens Advisory Committee formed SNWA signs long-term contract to purchase power from CRC
1998	Las Vegas Wash Coordination Committee formed Water Smart Landscapes Rebate Program initiated
1999	Youth Advisory Council formed SNWA Board adopts Memorandum of Understanding between LVVWD and Nye, Lincoln and White Pine counties SNWS Capacity increased to 600 MGD South Valley Lateral becomes operational
2000	Xeriscape Conversion Study begins Las Vegas Wash Comprehensive Adaptive Management Plan adopted by SNWA Board East Valley Lateral becomes operational
2001	Interim Surplus Agreement signed First Erosion Control Structures (three) completed at Las Vegas Wash SNWA hosts Mexican Delta Tour Flavor Panel Program initiated Stored 30,000 acre-feet through artificial recharge, bringing total to 245,000 acre-feet Energy Capital Improvements Plan adopted by SNWA Board

Timeline

2002	Completed Hearing for Coyote Spring groundwater rights Arizona Groundwater Banking Agreement signed Pilot test of shallow groundwater desalination initiated Intake No. 2 operational River Mountains Water Treatment Facility operational
2003	Drought Plan Citizens Advisory Committee formed and Drought Plan adopted by SNWA Board Strategic Plan adopted by SNWA Board The Impact of a Water-Imposed Interruption of Growth in the Las Vegas Region report completed Water Smart Contractor Program Initiated
2004	Intake No. 1 modification completed Completed Hearing for Three Lakes and Tikaboo groundwater rights Silverhawk Power Plant completed Integrated Water Planning Advisory Committee (IWPAC) formed California Interstate Banking Agreement adopted by SNWA Board Community achieves conservation goal of 25 percent by 2010
2005	Pool Cover Rebate Coupon and Water Smart Home programs initiated Big Bend Conservation Area purchase adopted by SNWA Board Intake No. 3 design and construction adopted by SNWA Board IWPAC concludes and recommendations adopted by SNWA Board Conservation goal of 250 GPCD by 2010 adopted by SNWA Board Resolution in support of in-state resource development adopted by SNWA Board
2006	Ely Field Office opens Warm Springs Natural Area purchase adopted by SNWA Board Spring Valley ranch purchases begin Spring Valley Stipulation for monitoring, management and mitigation initiated
2007	Water Quality Laboratory and Applied Research and Development Center completed Las Vegas Valley Watershed Advisory Committee formed Molasky Corporate Center opens Record of Decision for Interim Guidelines signed SNWA is a founding member of the Water Utility Climate Alliance (WUCA)
2008	Delamar, Dry Lake and Cave valleys Stipulation for monitoring, management and mitigation initiated Policy Relating to Recycled Water adopted by SNWA Board Community achieves conservation goal of 250 GPCD by 2010 Intake No. 3 construction begins
2009	Conservation goal of 199 GPCD by 2035 adopted by SNWA Board Yuma Desalting Plant Pilot Test funding adopted by SNWA Board Cloud-seeding efforts initiated
2010	SNWA hosts Climate Ready Water Utilities Working Group Conference Brock Reservoir (Drop 2) completed
2011	Water Smart Landscapes Rebate Program surpasses 150 million square feet of lawn removed Warm Springs Natural Area Stewardship Plan adopted by SNWA Board Completed Hearing for Spring, Delamar, Dry Lake and Cave groundwater rights

Planning

The SNWA has adopted a concept of integrated-resource planning to consider citizen and stakeholder recommendations as part of overall water-planning efforts. This approach considers a variety of community goals in tandem with resource and facility planning.

Integrated Resource Plan Advisory Committee
In 1994, the SNWA formed the Integrated Resource Plan Advisory Committee (IRPAC) to develop recommendations on future water resources and funding for new regional facilities. Key recommendations from this process included seeking permanent long-term water supplies, formation of a water resource plan and placing top priority on development of Colorado River water.

These recommendations led to the development of the SNWA's first Water Resource Plan, as well as landmark Colorado River and interstate agreements such as the Interim Surplus Guidelines and an agreement with the Arizona Water Banking Authority to bank unused Colorado River water for SNWA's future use.

Integrated Water Planning Advisory Committee
In 2004, the SNWA convened the Integrated Water Planning Advisory Committee (IWPAC) to develop recommendations on how best to integrate in-state resources into its existing water resource portfolio. Committee membership included 29 representatives from rural Nevada counties and various Southern Nevada stakeholders. Key recommendations from this process included pursuing additional and more aggressive conservation goals, pursuing all of the resource options considered during the IWPAC planning scenarios including in-state groundwater, and the continuation of the use of diverse funding sources.

These recommendations led to the adoption of a revised conservation goal of 250 gallons per capita per day (GPCD) by 2010, which was ultimately reached in 2008—two years ahead of schedule—and lead to the SNWA's existing conservation goal of 199 GPCD by 2035. The SNWA also developed a diverse portfolio of in-state and non-Colorado River resource options including banked resources, Coyote Spring Valley groundwater rights, pre-compact Virgin and Muddy rivers water, Virgin River water, and return-flow credits.

Colorado River Basin Water Supply and Demand Study
The SNWA is currently participating in the development of the Colorado River Basin Water Supply and Demand Study in collaboration with the Bureau of Reclamation and other representatives of the Colorado River Basin States. The study is projected to be complete in 2012, and will better define current and future imbalances in water supply and demand in the Colorado River Basin and its adjacent areas.

Interim Guidelines

In response to severe drought conditions in the Colorado River Basin, the Secretary of the Interior, in cooperation with the seven basin states, initiated a process to explore management options for lakes Mead and Powell.

These efforts resulted in the Secretary of the Interior issuing a Record of Decision in 2007 for Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead, also known as the "Interim Guidelines."

The landmark agreement requires the Lower Basin states of Arizona and Nevada to reduce their combined water use and share shortages in the event that water levels at Lake Mead drop to an elevation below 1,075 feet. The guidelines also created a new type of surplus called Intentionally Created Surplus (ICS).

Conservation

The SNWA has developed and implemented one of the nation's most progressive and comprehensive water-conservation programs. Through information sharing and collaboration, the SNWA has supported the creation of successful community-wide water-efficiency policies, such as permanent mandatory watering restrictions and lawn-installation limitations. The SNWA utilizes regulation, water pricing, incentives and education to promote conservation and reduce overall water use.

Regulation and Pricing

Although the SNWA supports and promotes water conservation both indoors and outdoors, conservation efforts emphasize reductions in outdoor water use, which represents approximately 60 percent of the community's water use. During the past 18 years, member agencies have adopted a variety of permanent land use codes and water use ordinances to promote water efficiency. These development codes and policies, such as time-of-day and day-of-week watering restrictions, vehicle washing and water waste fees, are among the most stringent in the United States. In addition, a tiered rate structure, which charges higher rates as water consumption increases, is used by SNWA member agencies to provide financial incentive for water users to reduce consumption.

Incentives

The SNWA's Water Smart Landscapes (WSL) rebate program is one of the most successful initiatives of its kind in the world. The WSL rebate program has resulted in the conversion of more than 157 million square feet of lawn to water-efficient landscaping, saving Southern Nevada more than 8.7 billion gallons annually. The amount of lawn converted is equivalent to a standard roll of sod nearly 20,000 miles long—enough to reach more than three-quarters around the Earth's circumference. Since the program's inception, more than 45,000 projects have been completed, generating a collective water savings of more than 50 billion gallons.

The SNWA offers other types of residential incentives through instant rebate coupons, such as rain sensor, smart irrigation controller and pool cover rebates. The SNWA also offers conservation incentives to commercial and multi-family property owners who install water-efficiency devices through the Water Efficient Technologies (WET) Program, and currently has more than 300 local restaurants participating in the Water Upon Request program. Additionally, close to 100 landscape contractors participate in the Water Smart Contractor Program, which assure that contractor's projects meet specific criteria that conserve water.

Ahead of Schedule

In 2001, the SNWA and its member agencies launched a conservation strategic planning process in response to the onset of severe drought conditions. Following the implementation of the Drought Plan in 2003, the community surpassed the 25 percent conservation goal set in 1996, six years ahead of schedule.

In an effort to maintain this achievement, a citizen's advisory committee recommended that the SNWA set a new goal, decreasing water demand to 250 gallons per capita per day (GPCD) by 2010. The SNWA Board adopted the new goal in 2005, and it was achieved two years ahead of schedule.

In 2009, building upon continued success, the SNWA Board adopted a new conservation goal of 199 GPCD by 2035.

Education

An integral element of the SNWA conservation strategy is education. The SNWA staffs a Conservation Hotline and provides extensive conservation-information online. Public education programs, such as the H_20 University and valley demonstration gardens, are designed to help residents understand responsible water use in a desert environment. Largely due to community collaboration and compliance with conservation measures, Southern Nevada is continuing a trend of declining water use. These efforts resulted in a reduction of Southern Nevada's annual water consumption by nearly 32 billion gallons between 2002 and 2010, despite a population increase of 400,000 people during that span and millions of annual visitors.

WaterSmart Innovations Conference

In 2008, the SNWA, in partnership with the U.S. Environmental Protection Agency, hosted the inaugural WaterSmart Innovations (WSI) Conference & Expo. Close to 1,200 participants from across the U.S. and 17 foreign nations came together to share information.

Technology improvements are critical to the advancement of water conservation. WSI provides a platform for industry professionals to collaborate on issues and opportunities related to water conservation. The conference brings together a diverse group of professionals from nearly every sector of the water industry, including irrigation equipment manufacturers, water managers, architects, engineers, plumbers, consulting firms, software developers and others. This annual event helps to forge new relationships, expand knowledge and support for water conservation initiatives, and has led to a more informed audience that are using information gained to help make cities across the globe more water efficient.

Groundwater Resources

Groundwater resources are long-term, permanent resources that the SNWA develops over time and manages in conjunction with its Colorado River water supplies. These resources are intended to provide Southern Nevada with a more balanced mix of water resources.

Las Vegas Valley Groundwater
Until large-scale importation of Colorado River water was achieved in the early 1970s, the Las Vegas Valley relied on local groundwater supplies to meet its water demands. Currently, 10 percent of Southern Nevada's municipal water supply comes from Las Vegas Valley groundwater sources, which are instrumental in helping Southern Nevada meet peak summer water demands.

The Las Vegas Valley Water District (LVVWD) and North Las Vegas, member agencies of the SNWA, have permanent groundwater rights totaling 40,629 acre-feet and 5,711 acre-feet, respectively. The two entities operate about 100 permitted municipal wells in the Las Vegas Valley. The municipal groundwater rights of the SNWA member agencies are among the most senior groundwater rights in the valley, and groundwater remains a critical component of the area's resource picture.

In-State Groundwater
The SNWA has a number of groundwater permits and applications in southern and eastern Nevada. The SNWA holds applications for 91,224 AFY of groundwater in Spring Valley and 34,752 AFY of groundwater in Delamar, Dry Lake and Cave valleys. The Nevada State Engineer held a hearing on these applications in fall 2011, with a water rights ruling expected to be issued in spring 2012. In August 2011, the SNWA also filed for 11,879 AFY for agricultural and wildlife protection purposes; there are no plans to export this water to Southern Nevada.

In addition, the SNWA holds groundwater rights in Garnet and Hidden valleys, Three Lakes Valley (North and South) and Tikaboo Valley (North and South), Indian Spring Valley and Coyote Spring Valley totaling more than 21,805 AFY.

Clark, Lincoln and White Pine Counties Groundwater Development Project
As part of its effort to meet Southern Nevada’s existing and future drinking-water needs and protect the community from drought conditions along the Colorado River, the SNWA plans to convey a portion of its in-state groundwater resources to Southern Nevada.

As part of these plans, the SNWA is working to secure rights-of-way from the Bureau of Land Management (BLM) to construct and operate groundwater production, conveyance and treatment facilities. The Clark, Lincoln and White Pine Counties Groundwater Development Project would extend from the Las Vegas Valley to Spring and Snake valleys, and could

Great Basin Land Holdings

Between 2007 and 2008, the SNWA acquired seven ranch properties comprising more than 23,000 acres of privately owned land in east-central Nevada's Spring Valley. The SNWA has continued operating the ranches - collectively named the Great Basin Land Holdings - through the coordination of a ranch manager, helping to ensure that water rights associated with the properties are maintained in good standing and land resources remain productive. Currently, livestock production at the ranches includes approximately 4,000 sheep and 1,200 mother cows. There also is more than 2,100 acres in hay production.

The SNWA will use surface-water rights acquired with the land holdings to support the area's environmental well-being and aquifer recharge. The land holdings are an important management tool that will help the SNWA safeguard Spring Valley's vegetation and wildlife as groundwater rights are developed.

convey up to 217,655 AFY—including capacity for Lincoln County based on a cooperative agreement. A decision by the BLM is expected in 2012.

The SNWA has prepared a Conceptual Plan of Development for the BLM relative to the GWD Project. This document describes the water resources that will be developed for the project, along with the proposed facilities, construction methods, and environmental protection measures. Once the project is approved by the BLM, the SNWA will complete a detailed Plan of Development for the final project, which will include monitoring and mitigation efforts that will be implemented as part of the construction and operation of the GWD Project.

Facilities and Major Construction

The SNWA builds and maintains an intricate system of intakes, water treatment facilities, pumping stations and pipelines to supply Southern Nevada with water.

Capital Improvements Plan

The SNWA developed the Capital Improvements Program (CIP) in an effort to meet Southern Nevada's increasing water needs. Facilities were constructed as needed to enhance the reliability and quality of the existing water treatment and delivery system. The phased $2.1 billion public works program began in 1995, and was amended in 2005 to $2.9 billion to include a third intake.

Lake Mead Intake No. 2 was one of the cornerstone projects of the SNWA's CIP. Located deep below the lake's surface, Intake No. 2 draws in water through a 1,600 foot-long and 14-foot-wide tunnel to a large, underground pumping forebay. From here, submerged pumps draw water through 22 well shafts to the treatment facility, where the water is treated and sent through the distribution system.

The CIP also included major water treatment improvement projects at the SNWA's two water treatment facilities. Improvements to the Alfred Merritt Smith Water Treatment Facility enhanced the plant's reliability and increased treatment capacity to 600 million gallons a day. The River Mountains Water Treatment Facility (River Mountains), which provides additional reliability and capacity, began delivering treated water to the Las Vegas Valley in 2002. River Mountains can treat up to 300 million gallons of water per day. The addition of ozone treatment in 2003 put both treatment facilities on the cutting-edge of water treatment technology.

In February 2010, the SNWA Board approved retirement of the CIP 14 years after it was first issued and achieved the goals for which it was established, which primarily included providing 900 million gallons of water per day of treated water capacity to Southern Nevada.

Major Construction and Capital Plan

As the CIP began to reach its goal of more than doubling total system capacity, the SNWA recognized that a new capital plan was needed. To identify and authorize future capital projects, the SNWA created the Major Construction and Capital Plan (MCCP) in 2002. Currently, the MCCP is the main capital plan, which includes the SNWA's largest construction project to date, Lake Mead Intake No. 3.

Transmission System Improvements

After water is treated it must be delivered to various water purveyors throughout the Las Vegas Valley.

Transmission system project improvements involved laying more than 60 miles of large diameter pipe and constructing six pumping stations and five reservoirs.

The projects East Valley Lateral, West Valley Lateral, North Valley Lateral and South Valley Lateral were part of the Capital Improvements Program.

Intake No. 3

With unprecedented drought conditions it was clear that a third intake in Lake Mead was needed to provide access to better water quality and long-term protection of Southern Nevada's primary water storage reservoir. To help protect Southern Nevada's Colorado River resources, the Board approved the design and construction of Intake No. 3 in 2005. Intake No. 3 is scheduled for completion in 2014.

The third intake will follow a three-mile path under Lake Mead connecting to a tunnel under the lake bottom and to an aboveground pumping station. Intake No. 3 is exceptionally challenging to construct due to a number of factors including the volcanic geology of the area, the depth of the tunnel below the mean water level and potential for high water pressure, and the depth and size of the underwater intake structure. This project requires a custom tunnel boring machine that works like a giant mechanical earthworm, gnawing through dirt, rock and muck, forming a protective tunnel that will eventually channel raw Colorado River water. Once completed, Intake No. 3 will convey water to SNWA's existing water treatment facilities.

Environmental Stewardship

The SNWA employs environmentally responsible and sustainable practices, and works cooperatively with federal, state and local agencies to ensure mitigation or minimization of the impacts of water-resource development. Additionally, the SNWA works to ensure compliance with a variety of laws and regulations, including the Endangered Species Act (ESA), the National Environmental Policy Act (NEPA) and Section 404 of the Clean Water Act. By diligently following applicable environmental laws and regulations, as well as by using the latest best-management practices, the SNWA minimizes its environmental footprint and works to conserve and preserve the environment's natural resources for future generations.

Endangered Species

The SNWA participates in several environmental programs that contribute to species recovery and habitat conservation and protection. Examples of species the SNWA monitors include the Moapa dace, Moapa speckled dace, Moapa White River springfish, Razorback sucker, Southwestern willow flycatcher, Vermilion flycatcher, Virgin River chub, Western yellow-billed cuckoo and Yuma clapper rail.

Located approximately seven miles northwest of the town of Moapa, the Warm Springs Natural Area contains more than two dozen springs, which form the headwaters of the Muddy River. The 1,220-acre property provides habitat for 28 listed and sensitive species. For a number of years prior to the SNWA's involvement, the U.S. Fish & Wildlife Service considered this property a top priority in Southern Nevada for acquisition and protection. The SNWA purchased the property to protect the headwaters of the Muddy River and the habitat of the endangered Moapa dace. The SNWA developed a Stewardship Plan for the Warm Springs Natural Area in coordination with the U.S. Fish and Wildlife Service, The Nature Conservancy, Nevada Department of Wildlife and other stakeholders.

Clark County Multiple Species Habitat Conservation Plan (MSHCP)

Beginning in 1995, the MSHCP was implemented to address biological resources within Clark County. The program provides ESA coverage for 78 species. The key purpose of the MSHCP is to achieve a balance between the conservation and recovery of Clark County's listed and sensitive species and the orderly beneficial use of land to meet the needs of Clark County's growing population. The SNWA actively participates in the MSHCP, which serves as an insurance policy to cover future federal listings of species in areas where urban development is taking place. Protecting the 78 species and their habitats reduces the chance of them becoming threatened or endangered in the future.

Green Fleet

Reducing our corporate footprint and raising sustainability awareness among our employees, partners and community are among the SNWA's core values.

The SNWA's goal is to have a 100 percent alternative-fueled vehicle fleet by 2015. Currently, our green vehicle practices include:

- Alternative fuels power more than 86 percent of all vehicles. All new vehicles purchased since 2006 run on alternative fuels.
- Track fuel consumption, flag usage increases and develop ways to increase efficiency.
- Identify underutilized vehicles to reduce fleet size.
- Use GPS technology to map the most fuel- and cost-efficient routes for drivers.
- Recycle materials such as motor oil, tires and rubber, antifreeze and batteries.

Lower Colorado River Multi-Species Conservation Program (LCR MSCP)
On a broader level, the SNWA is actively involved in the LCR MSCP, which is a coordinated, multi-agency effort to protect the species and habitat of the Lower Colorado River region. Goals of the program include conserving the habitat and working toward recovery of threatened and endangered species; reducing the likelihood of additional species listings; accommodating current water diversions and power production; and optimizing opportunities for future water and power development.

In support of the LCR MSCP, the SNWA acquired 15 acres of land along the Colorado River in 2005 from the Boy Scouts of America to provide habitat benefiting the endangered flannelmouth sucker. The property, renamed the Big Bend Conservation Area, serves as a tool to help conserve, protect and enhance the area's natural resources and provide opportunities for low-impact recreational use.

Water Utility Climate Alliance (WUCA)
As part of the WUCA, the SNWA works to reduce the impacts of climate change. WUCA is a consortium of water providers serving 10 of the country's largest metropolitan regions, working together to improve research into the impacts of climate change on water utilities, develop strategies for adapting to climate change, and implementing tactics to reduce greenhouse gas emissions.

Funding

Following the recommendations of its citizens' water-planning committees, the SNWA has continued to support the use of diverse funding sources to secure water resources and construct essential water infrastructure. The "growth pays for growth" model, incorporation of sales tax as a revenue source and regional and commodity charges were established to support the development of new regional facilities.

The SNWA operates from three primary sub funds, which are funded by wholesale delivery charges, connection charges, usage fees, sales tax, and tax-exempt municipal bonds the SNWA has sold. Proper management of these funds has enabled the SNWA to maintain a strong financial rating.

Quarter-Cent Sales Tax

In 1997, the Nevada Legislature approved Assembly Bill 291, which authorized the Clark County Commission to increase the sales tax by one-fourth of one percent (1/4%) to help pay for water and wastewater system improvements, referred to as the Clark County Water and Wastewater Infrastructure Sales Tax. The legislation established a sunset for the tax at $2.3 billion or June 30, 2025, whichever comes first. At the November 1998 General Election, 72 percent of voters approved an advisory question on the tax. The Clark County Commission voted to implement the quarter-cent sales tax on December 15, 1998.

In 2011, the Nevada Legislature approved Senate Bill 432, which allows the Clark County Commission to continue the sales tax beyond the sunset. The bill also authorized 40-year financing for water and wastewater projects, and a 15-year window before local governments have to start paying down Capital Appreciation Bonds.

Since implementation, the quarter-cent sales tax has provided more than $896 million to Clark County for water and wastewater system improvements in Southern Nevada. Projects developed through the quarter-cent sales tax have helped improve drinking-water quality, wastewater facilities, water system capacity and reliability while creating critical back-up water treatment and delivery infrastructure.

This funding source shares capital costs associated with water and wastewater infrastructure among visitors and residents of Southern Nevada.

Rates Study

On June 16, 2011, the SNWA Board of Directors commissioned Hobbs, Ong and Associates to independently evaluate SNWA's existing rates and charges and to make recommendations for any modifications deemed necessary.

The intense evaluation process conducted by Hobbs, Ong and Associates resulted in the finding that modifications were necessary to SNWA's rate structure to ensure financial and operational integrity.

SNWA is currently undergoing a public process to implement the necessary rate structure changes.

Funding

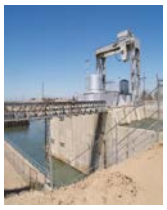
Southern Nevada Public Land Management Act

The Southern Nevada Public Land Management Act (SNPLMA) became law in October 1998. It allows the Bureau of Land Management (BLM) to sell federal public land within a specific boundary around Las Vegas. SNWA receives 10 percent of the revenues derived from these land sales to help increase the capacity of Southern Nevada's water infrastructure. Proceeds also help fund parks, trails and environmental initiatives in Southern Nevada.

Since its approval, SNPLMA has supported the construction of Intake No. 2, the River Mountains Water Treatment Facility, the lowering of Intake No. 1, the Water Quality Research and Development Laboratory and Intake No. 3. SNWA also has received funding for stabilization and restoration activities in the Las Vegas Wash and the Warm Springs Natural Area. As of the end of Fiscal Year 2010-2011, SNWA has received $410 million in SNPLMA proceeds.

Cost Savings

In response to Southern Nevada's current economic slowdown, SNWA reduced operational costs by $56 million, restructured existing debt and deferred more than $395 million in new construction. Despite these actions, the SNWA continues to experience serious revenue strain and evaluate revenue options.



Water Resources

Managing a flexible portfolio of diverse water resource options is essential in responding to changing conditions. Priority of resources is determined by reliability, availability, accessibility, cost and need.

In 1996, the SNWA adopted a Water Resource Plan to help meet future demands and utilize all available water supplies. Since then, the plan has been reviewed annually and updated as needed, and currently includes a portfolio of conservation, Colorado River water, groundwater resources and augmentation of current and future resources.

Conservation

Conservation is a long-standing component of the SNWA's water resource portfolio, and is expected to continue to reduce local water demands. The SNWA's current conservation goal of 199 gallons per capita per day (GPCD) is expected to reduce overall demands by more than 50 GPCD and save the community approximately 276,000 acre-feet of water per year by 2035.

Colorado River

The Colorado River Compact of 1922 and the Boulder Canyon Project Act of 1928, restrict Nevada's basic Colorado River apportionment to 300,000 acre-feet per year (AFY). However, with the use of return-flow credits and due to provisions included in existing agreements, Nevada can actually divert more than its 300,000 AFY.

In 2001, the Bureau of Reclamation's Interim Guidelines were finalized and included a "domestic surplus" provision, which provides additional Colorado River water to SNWA through 2016 if Lake Mead levels are above an elevation of 1,125 feet. Additionally, the 2007 Record of Decision for Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead allows the SNWA to maximize Colorado River resources through the development of Intentionally Created Surplus (ICS), and redefined domestic surplus to guarantee Nevada an additional 100,000 AFY through 2026 if Lake Mead is above an elevation of 1,145 feet. In 2008, the SNWA began diverting ICS resources for use in Southern Nevada, which represented the first "new" water supply put to use in the region since large-scale diversions of Colorado River water began in the 1950s.

Banked Resources

Groundwater banking provides the SNWA the ability to store water for future use. Through local and interstate programs and agreements, SNWA currently manages three water banking projects. Through the Southern Nevada Water Bank program, approximately 345,000 acre-feet (AF) of water has been stored in the local groundwater basin for future use. As part of the California Water Bank agreement, SNWA has stored 70,000 AF of water. In 2004, the SNWA approved an agreement with Arizona guaranteeing Nevada access to 1.25 million AF of water in the Arizona Water Bank. Since the withdrawals will be taken from Lake Mead, Nevada also will receive return-flow credits for the portion of water used indoors, further extending the value of the agreement.

Brock Reservoir

The SNWA agreed to fund a portion of the Warren H. Brock Reservoir – formerly known as the Drop 2 Reservoir – in exchange for receiving 400,000 acre-feet from Lake Mead under normal conditions at a maximum rate of 40,000 acre-feet per year beginning in 2011. Brock Reservoir is considered a System Efficiency ICS project, which allows a water user to fund a system efficiency project to conserve Colorado River water. This project captures Colorado River water that would otherwise go unused in the lower basin and pass into Mexico. The reservoir is designed to conserve about 70,000 AFY.

The SNWA participates in ongoing bi-national negotiations between the U.S. and Mexico to explore cooperation on Colorado River issues such as conservation opportunities, environmental priorities, increased system efficiency, and potential augmentation.

Augmentation

The SNWA continues to cooperatively pursue the development of 75,000 AFY of permanent water supplies to augment the Colorado River for Nevada. In 2007, the SNWA funded the "Study of Long-term Augmentation Options for the Water Supply of the Colorado River System," which examined several water resource augmentation options including brackish and ocean water desalination, weather modification and vegetation management.

As part of these efforts, the SNWA is evaluating opportunities for involvement in seawater desalination with California and Mexico, which would most likely benefit Southern Nevada through an exchange of Colorado River water. Additionally, the SNWA partnered with the states of Arizona and California and the Bureau of Reclamation on a pilot operation of the Yuma Desalting Plant in Yuma, Arizona to assess opportunity from the brackish water facility.

SNWA also participates in funding weather modification programs in the Upper Colorado River Basin and the State of Nevada. Results have shown the potential for augmentation in targeted areas to increase area supplies in the range of five to seven percent. Currently, SNWA is collaborating with the Desert Research Institute to explore the feasibility of applying weather modification to eastern areas of Nevada to increase augmentation.

Energy

The SNWA is committed to conserving energy and focusing on the use of renewable resources, and has voluntarily committed to meet 25 percent of its energy needs through renewable resources by 2025. At present, more than 13 percent of energy used by the SNWA is generated through renewable resources. To achieve its goal, the SNWA is focused on diversifying its resources to include solar, hydro projects, biomass and geothermal as its main sources of renewable energy for the future.

The SNWA is partnering on new technologies and implementing pilot projects at its various operating facilities to assess renewable energy potential. This effort also is intended to support a more diversified economy in Southern Nevada by attracting related companies and jobs to the region.

Solar Power

The SNWA has incorporated various photovoltaic (PV) technologies into its water system operations. Solar PV covered carports were put into service in April 2008 at both the River Mountains Water Treatment Facility and Alfred Merritt Smith Water Treatment Facility. Power generated from this and other concentrated solar PV installations off-set load at the water treatment facilities. The installed capacity is 580 kilowatts (kW).

Hydro Projects

The SNWA has developed hydropower projects at three Rate of Flow Control Stations (ROFCS) in Las Vegas and Henderson. The projects include a small turbine and induction generator at each site. As water passes through the pipeline, it turns the turbine and generates electricity. Combined, more than two megawatts of electricity can be generated from these systems. Hydroelectric turbines operate at the Linden ROFCS (522 kilowatts (kW), Sloan ROFCS (933 kW) and Horizon Ridge ROFCS (605 kW).

Water from wells northwest of Moapa is piped to Overton through a line that was constructed in late 2010. A plan has been developed to replace the Pressure Reducing Valve in the line with a pelton- wheel hydro generator. This project, identified as the Arrow Canyon Hydro system, will incorporate a generator with a rating of 300 kW, which will provide approximately 2,400 megawatt hours of power on an annual basis to SNWA.

In addition, the SNWA contracts with the Colorado River Commission for power generated at Hoover Dam. Approximately 10 percent of the SNWA's annual supply comes from this source.

Silver State Energy Association

The Silver State Energy Association (SSEA) is an association of public agencies with the common goal of jointly planning, developing, owning and operating power resources to meet their own needs and those of their customers.

The economies of scale produced by the SSEA offer improved project development opportunities and power purchasing capabilities, the sharing of resources and expertise, and the opportunity for jointly managed energy needs.

SNWA is a founding member of the SSEA.

Geothermal

The SNWA has spent time and resources exploring geothermal opportunities. This effort was concentrated along the route of the proposed Clark, Lincoln and White Pine Counties Groundwater Development Project. That work has produced promising opportunities that will require exploratory drilling to confirm an adequate resource. Since development of geothermal resources is very capital intensive, SNWA will work to find partners and funding to help support this effort.

Silverhawk Power Station

The Silverhawk Power Station is a 570 megawatt electric power generation facility, located 35 miles north of Las Vegas in Apex. It began operating in May 2004. The SNWA owns 25 percent of the Silverhawk facility, which provides a reliable power source for the SNWA's water treatment facilities and pumping stations. The Silverhawk Power Station is the result of a public-private partnership between SNWA and GenWest LLC, a subsidiary of Phoenix-based Pinnacle West Capital Corporation. In June 2005, Nevada Power Company (now NV Energy) acquired ownership of GenWest's 75 percent interest in the plant. To ensure that Silverhawk optimizes the use of Nevada's water resources, the facility operates using "dry cooling," a technology that allows it to produce electricity using 90 percent less water than a typical water-cooled plant. The facility also incorporates strict emission limits and the best available control technology for air quality. As a result, Silverhawk meets stringent air quality requirements, and it increases the availability of electric power to Southern Nevada.

Water Quality

Every year, SNWA scientists collect and analyze more than 35,000 water samples from various locations throughout the Las Vegas Valley and conduct about a half-million analyses on those samples to assure water quality is far ahead of the regulatory curve.

Water Treatment

The Southern Nevada Water System (SNWS) has two advanced water treatment facilities, the Alfred Merritt Smith and River Mountains water treatment facilities. Improvements to the Alfred Merritt Smith Water Treatment Facility completed in 1999 increased treatment capacity to 600 million gallons a day. The River Mountains Water Treatment Facility began delivering treated water to the Las Vegas Valley in 2002. River Mountains currently can treat up to 300 million gallons of water per day. The addition of ozone treatment at both facilities in 2003 put the SNWA on the cutting-edge of water treatment technology.

SNWS tests Lake Mead water more frequently and extensively than federally required, and the SNWA continually seeks to surpass standards through its own water treatment methods. Water delivered by SNWS meets or surpasses all State of Nevada and federal drinking-water standards.

Water Quality Laboratory and Applied Research and Development Center

In 2007, the Water Quality Laboratory and Applied Research Center opened. The 50,000 square-foot laboratory provides space for SNWA staff to process and analyze water samples, perform research on emerging issues and to pilot test new treatment processes and technologies. The facility consolidated and expanded water-quality research capabilities, and ushered in a new era of treatment technologies and enhanced water quality exploration. An initial study conducted at the facility focused on the impacts of pharmaceuticals and personal care products (PPCPs) in drinking water. The study developed drinking-water reference doses, which are now used throughout the nation, for the most prevalent PPCPs in drinking water.

Quagga Mussels

Discovered at Lake Mead in 2007, non-native Quagga mussels are one of the most invasive species in the world. Quagga mussels can cause irreversible harm to the environment and pose a serious threat to water intake systems. The SNWA, in cooperation with other agencies, has developed an Interagency Monitoring Action Plan to coordinate the collection and sharing of Quagga mussel data for Lake Mead. The SNWA contributes to this effort through a routine Lake Mead water quality sampling program, the collection of juvenile mussels during water quality sampling and the regular inspection of water intake structures by divers.

Operation Medicine Cabinet

Man-made contaminants pose a potential risk to safe drinking water.

In 2010, the SNWA participated in Operation Medicine Cabinet to discourage improper disposal of medications in toilets or down drains to prevent them from entering our water system.

The one-day, drug collection event, which offered Southern Nevadans “safe” prescription disposal locations throughout the valley, collected more than 380,000 discarded and outdated medications.

Community Engagement

Since its formation in 1991, SNWA has worked to actively engage the public in its programs and efforts. Some of the processes were designed to address specific, time-sensitive issues such as drought, while others – like the Advisory Committee for Groundwater Management and the Youth Advisory Council – are ongoing processes, allowing for long-term public involvement.

While the SNWA has a track record of public engagement, it is the concrete and tangible results of these efforts that are the true measures of their successes.

Advisory Committee for Groundwater Management
In 1997, the Nevada Legislature directed the SNWA to establish a groundwater management program for the Las Vegas Valley. To assist the SNWA, the Legislature formed an Advisory Committee for Groundwater Management comprised of private, community and commercial well users in the Las Vegas Valley.

The committee's recommendations were incorporated into the Las Vegas Valley Groundwater Management Program, which is designed to stabilize the water table and prevent contamination of the drinking water aquifer. The Advisory Committee has continued to meet since 1997 to discuss Las Vegas Valley groundwater issues and make recommendations to the SNWA Board of Directors.

Youth Advisory Council
Each year, local high-school students raise awareness of local water issues as part of the Youth Advisory Council (YAC), a year-long program launched by the SNWA in 1999 to give students the opportunity to gain leadership experience through studying water issues. This council provides opportunities for youth to participate in the ongoing planning, policy development and evaluation of water conservation. Each year, the YAC develops and implements water-related projects, and makes formal recommendations to the SNWA Board of Directors.

Las Vegas Wash Coordination Committee
The SNWA is one of more than two dozen members of the Las Vegas Wash Coordination Committee (LVWCC), a panel of local, state and federal agencies, business owners and members of the public. The SNWA coordinates the activities of the LVWCC and provides support for the development and implementation of the Las Vegas Wash Comprehensive Adaptive Management Plan. The LVWCC encourages public input, and has worked with its stakeholders to realize a myriad of accomplishments at the Las Vegas Wash including the construction of 12 erosion control structures; stabilization of more than six miles of the wash's banks; completion of approximately 330 acres of wash improvements; removal of more than 500,000 pounds of trash; completion of extensive wildlife and water quality monitoring; hosting numerous volunteer events; built or improved more than two miles of trails; and implementation of an invasive species management program.

Organization of the Year

In 2008, the SNWA received the Organization of the Year Award from the International Association for Public Participation (IAP2) for its ongoing commitment to engage the community in policy decisions.

The IAP2 Core Values Awards, which honor excellence and innovation in the field of public participation, recognized the SNWA's incorporation of citizens advisory committees in policy decisions. The IAP2 presents the award annually for organizations that exemplify the spirit and purpose of public participation and recognized the SNWA for activities and results related to its citizens advisory committees.

Water Conservation Coalition

The SNWA initiated the Water Conservation Coalition (WCC), a public/private partnership, to engage the business community in regional water-conservation efforts, and work to increase water-efficient practices within the Southern Nevada business community. For nearly two decades, the WCC has worked with the SNWA to identify opportunities where the business community can have the greatest influence on helping the region meet its overall water-conservation goals, promote water efficiency and boost participation in the SNWA's water-conservation programs. Through this partnership, in collaboration with the organization's more than 140 business members, the SNWA has developed a highly-active consortium of advocates for conservation, increasing its reach within the business community. This unique partnership provides a model for how government and business can work together to improve the management and use of limited natural resources.

Awards

1999	Las Vegas Wash, DeBoer Award, APA
1999-2009	Financial Reporting, Distinguished Budget Presentation Award and Certificate of Achievement for Excellence, Government Finance Officers Association
2000	Conservation Planning, Water Conservation Field Services Program Commissioner's Award, Bureau of Reclamation Public Participation, Core Values Award, International Association of Public Participation Designated "Groundwater Guardian," National Groundwater Foundation
2001-2011	Community Outreach/Education Programs, Multiple Awards, International Association of Business Communicators and Public Relations Society of America
2002	Xeriscape Conversion Study, Regional Director's Award, Water Conservation Field Studies Program River Mountains Water Treatment Facility, Major Environmental Project of the Year, NV Chapter of the American Public Works Association River Mountains Water Treatment Facility, Outstanding Civil Engineering Achievement Award of Merit, American Society of Civil Engineers
2004	River Mountains Water Treatment Facility, National Honor Award-Excellence in Engineering Design, American Society of Civil Engineers
2005	Water Quality, Partnership for Safe Water Award, EPA & AWWA Fluoridation Levels, State Fluoridation Quality Award, CDC
2008	Capital Improvements, Owner of the Year, Southwest Contractors Public Participation, Organization of the Year, International Association for Public Participation
2009	Revitalization Efforts, Partners in Conservation Award, Department of Interior Fiscal Responsibility, Contractors Quality of Life Award, AGC Alfred Merritt Smith Water Treatment Facility, Director's Award, Partnership for Safe Water