

 SOUTHERN NEVADA WATER AUTHORITY®

2012 Annual Report



Mission

The Southern Nevada Water Authority manages the region's water resources and develops solutions that will ensure adequate future water supplies for the Las Vegas Valley.

History

For more than two decades, the SNWA has been addressing Southern Nevada's unique water needs. Recognizing the importance of the world's most precious and finite resource, the SNWA works with agencies in Nevada as well as in other Colorado River Basin states and throughout the world to help protect and preserve water supplies.



Member Agencies

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

SNWA Board of Directors



Shari L. Buck, Chair
City of North Las Vegas



Mary Beth Scow, Vice Chair
Las Vegas Valley Water District



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Big Bend Water District



Duncan McCoy
City of Boulder City



Susan Brager
Clark County
Water Reclamation
District



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General Manager

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Senior Deputy General
Manager

Ron Zegers
Deputy General Manager
Engineering/Operations

Phil Speight
Deputy General Manager
Administration

Gregory Walch
General Counsel



From the Chair

To our friends and neighbors:

Managing water resources in a desert environment is never simple. Add more than a decade of harsh drought conditions and it could seem nearly impossible. Rather than face these challenges singularly, the Southern Nevada Water Authority engages a diverse community—one that starts right here at home and extends throughout the Colorado River Basin, Mexico and the world—to work together to achieve responsible use and management of this limited resource.

Here at home, your conservation efforts also helped decrease annual water consumption by nearly 29 billion gallons between 2002 and 2012, despite population increases and millions of annual visitors thanks to the SNWA's conservation campaign, one of the nation's most extensive and aggressive water-reuse programs. Residents involved in the SNWA's Water Smart Landscapes incentive program have replaced more than 163 million square feet of grass with water-efficient landscaping since the program began in 1999.

While community efforts contribute to successful conservation, community input helps shape the big picture. The SNWA historically has partnered with citizens advisory committees to provide water resource development and funding guidance. A citizens advisory committee appointed in 2012 will make policy and program recommendations to the Board of Directors in 2013 as part of the SNWA integrated resource-planning process.

Identifying and distributing water resources to our community is only part of the water equation. The SNWA faces the rising challenge of funding the resources and infrastructure necessary to sustain our community. Last March, the SNWA visited Capitol Hill to urge our nation's lawmakers to address the growing financial burdens on municipalities nationwide.

As you read this report, you'll discover the emergence of other national and international partnerships. Some, on the surface, appear as unlikely alliances, but as we look deeper, reveal that a wellspring of knowledge can come from many corners of Earth, as effective water management becomes a global undertaking. Working together, we'll address current and future water-resource challenges and, I believe, achieve a greater solution than tackling these issues alone.

Shari L. Buck
Chair
Southern Nevada Water Authority



From the General Manager

To our community, stakeholders and customers:

Historically, countries and communities have battled each other for water. Today, the world unites to confront an emerging enemy: climate change. The SNWA has joined water managers, in communities across the country and around the world, to develop resource-sharing strategies and address threats to our global water resources.

Nowhere is this more evident than the bi-national agreement signed in November 2012. Minute 319—a five-year agreement between the U.S. and Mexico that offers provisions to share shortages and surpluses—allows both countries to proactively manage the Colorado River during variable reservoir conditions.

We're working to extend these types of partnerships not only in our region and across our borders, but globally as well. Our new partnership with Mekorot Israel National Water Company—one of the most technologically advanced water companies in the world—will offer the opportunity to exchange water-management strategies, technologies and information.

Regionally, we joined other agencies to complete a U.S. Bureau of Reclamation study that defines current and future imbalances in water supply and demand along the Colorado River Basin. The findings will influence the future of the Colorado River over the next 50 years as well as all of us who depend on this resource.

While finding water resources to sustain our community is one challenge, funding these operations is another. To mitigate the economic strains on our operations, we reduced operational costs by \$56 million and deferred an additional \$525 million. Our citizens advisory committee, formed in 2012, will recommend new rate structures and revenue streams for future funding consideration.

As water managers, we realize that the future requires innovative thinking and decisive action to provide and sustain water for our communities. As hydrology and climate conditions change, it will require a fully engaged level of communication and collaboration among communities, states and nations to collectively manage our water resources. Together we can weather the challenges and opportunities ahead, for the whole is ultimately greater than the sum of its parts.

A handwritten signature in black ink that reads "Pat Mulroy". The signature is fluid and cursive, with a long horizontal stroke at the bottom.

Sincerely,
Pat Mulroy
SNWA General Manager



For thousands of years, Southern Nevada has been a vital respite for weary travelers thanks to the natural springs that provided an oasis in our arid desert. Gradually, settlements grew around those springs and developed into the community we know today...one that relies on water resources to thrive.

Our Water Resources

Lake Mead water levels have declined more than 80 feet since 2000.

The Southern Nevada Water Authority (SNWA) partners with our community in the quest to sustain our water resources and ensure water for future generations. It is a quest filled with challenges and successes. Many challenges stem from unpredictable weather patterns. Much of the nation battled drought during 2012 and the warm, arid conditions are expected to continue through the next decade. During the 2012 water year, inflows to Lake Powell reached only 45 percent of average. These low inflows—coupled with one of the warmest years on record—affected Lake Mead, which remained just over 50 percent capacity by the close of 2012.

If Lake Mead levels drop below 1,075 feet, the U.S. Department of the Interior will declare a shortage on the river, reducing Nevada and Arizona's available Colorado River water allocation. Such unpredictable conditions demonstrate that dependence on a fluctuating single water source (the Colorado River comprises approximately 90 percent of Southern Nevada's water supply) is risky for any community.

The SNWA employs a multi-faceted approach to reduce our drought exposure and create diverse and flexible water resources, which may be tapped during varying hydrologic conditions.

Southern Nevada receives the smallest allocation of Colorado River water among the Basin states and Mexico, but we make every drop count. Wastewater that flows through our taps and down the drain is reclaimed, treated and used as a resource in Southern Nevada. Reclaimed water accounts for roughly 40 percent of the water we use, making it our second-largest water resource.

Southern Nevada reclaims wastewater through return flow credits or direct reuse. Approximately 200,000 acre-feet (an acre-foot contains approximately 326,000 gallons) is returned to the Colorado River each year for return flow credits. Direct reuse accounts for about 17,000 acre-feet per year. When Southern Nevada directly reuses

additional reclaimed Colorado River water for irrigation or cooling, it is a form of recycling, but it does not extend our supply as it would if the water was treated and returned to Lake Mead for return-flow credits.

Intentionally Created Surplus (ICS) credits help us stretch our river resources even further. ICS credits accumulate when we conserve or introduce additional water into the Colorado River and can be achieved through Tributary Conservation, Imported, System Efficiency and Extraordinary ICS.

Southern Nevada creates Tributary Conservation ICS resources when the SNWA conveys its leased and owned pre-1929 Muddy and Virgin rivers water rights to Lake Mead for Colorado River credit. The SNWA has created approximately 124,000 acre-feet of Tributary Conservation ICS through 2012, and will realize an additional 30,000 acre-feet in 2013.

Imported ICS is created when SNWA conveys its groundwater rights in Coyote Spring Valley to Lake Mead for credit. The SNWA currently owns 9,000 AFY of groundwater rights in Coyote Spring Valley. In 2010 the Water Authority completed construction of facilities to convey its Coyote Spring Valley groundwater to Lake Mead, and conveyed approximately 4,000 acre-feet of groundwater for credit in 2012. Southern Nevada used



The Las Vegas Wash carries and naturally filters nearly 200 million gallons of urban flows and runoff each day on its way to Lake Mead, the Las Vegas Valley's primary source of drinking water. As the Wash carries the valley's return flows from indoor water use, it expands our water supply by another 40 percent.





1,000 acre-feet of this resource for the first time in 2012 and stored the remainder in Lake Mead.

The SNWA recently completed testing (under Nevada State Engineer Order 1169) to evaluate additional groundwater resource availability in Coyote Spring Valley. The SNWA can use Tributary and Imported ICS credits in the year they were created during any operating condition, including shortages.

When Imported and Tributary Conservation ICS credits are not used during the year they are created, they convert to Extraordinary Conservation ICS credits, stored in Lake Mead for multiple years and used like a bank account. The SNWA had banked approximately 108,000 acre-feet of ICS credits in Lake Mead at the conclusion of 2012; however, these stored credits are not available during declared shortages.

Southern Nevada has an additional 40,000 acre-feet of Colorado River water available for consumptive use each year as a result of System Efficiency ICS created by the Warren H. Brock Reservoir near Gordon Wells, Calif. Water users in Nevada, California and Arizona funded the reservoir, constructed to capture Colorado River water that would otherwise go unused in the Lower Basin and pass into Mexico. In exchange, the states receive a portion of the water savings in the form of System Efficiency ICS credits, which accumulate when a user funds a system efficiency project that conserves Colorado River water. The credits can be used under normal Colorado River conditions through 2035.

Another 30,000 acre-feet in System Efficiency ICS were realized when the SNWA partnered with other agencies to fund a year-long pilot run of the

Yuma Desalting Plant (YDP). A report, released in summer 2012, demonstrated that the plant operated continuously for 328 days at one-third capacity with no substantial issues. The YDP conserved 30,000 acre-feet of irrigation return flow water, which was returned to the Colorado River to help meet water-delivery obligations to Mexico.

The U.S. Bureau of Reclamation, charged with operating the plant, will continue to work with agencies interested in using YDP as a means to extend Lower Colorado River water supplies. The sponsoring water agencies, based on the percentage of their funding contribution, may use water conserved in Lake Mead through YDP pilot operation.

The active measures the SNWA developed to keep Lake Mead above shortage levels have been successful through more than a decade of drought. However, if continued drought conditions cause Lake Mead's water level to fall below the first and second intakes, which convey water for treatment and distribution in Southern Nevada, Lake Mead's critical third intake—currently under construction—will allow continued access to quality drinking water. Construction on the 3-mile intake tunnel located approximately 350 feet beneath the surface of Lake Mead is expected to be complete in 2014.



Work continues on the tunnel, considered one of the most complex engineering projects in the world. Although the SNWA maintains an outstanding safety program—which received the the American Water Works Association’s prestigious Wendell R. LaDue Utility Safety Award in 2012—an accident claimed the life of a construction contract worker as a result of an incident that occurred when workers were setting concrete segments. Crews have since developed procedures to prevent a similar occurrence.

While Lake Mead is the reservoir for the majority of Nevada’s share of Colorado River water resources, which are fixed at 300,000 acre-feet per year, the SNWA develops non-river resources, such as groundwater, essential to our region’s water portfolio. Approximately 10 percent of our community’s water supply comes from an aquifer beneath Las Vegas. More than a decade ago, the Nevada Legislature asked the SNWA to oversee a groundwater management program. This effort, which has succeeded in maintaining and even raising the water table, includes monitoring groundwater levels and carefully managing pumping and mitigation measures to prevent contamination.

Approximately 345,000 acre-feet of water are stored within the Las Vegas Valley groundwater basin for Southern Nevada’s future use. Permits with the Nevada State Engineer and an agreement between the Las Vegas Valley Water District and the SNWA govern the SNWA’s recovery of this water. An additional 17,378 acre-feet is banked in the basin for the Las Vegas Valley Groundwater Management Program. SNWA member agencies maintain local, annual groundwater rights—40,629 acre feet permitted to the Las Vegas Valley Water District and 6,201 acre-feet permitted to the City of North Las Vegas—that are used to meet peak demands in the summer.

Additional accessibility to Southern Nevada’s groundwater resources was authorized in March 2012, when the Nevada State Engineer granted the SNWA nearly 84,000 acre-feet of water annually in four east-central Nevada valleys. Groundwater rights applications were filed in east-central Nevada in 1989 to develop these unused resources. These groundwater rights, part of the SNWA’s long-term planning strategy, will allow Southern Nevada to develop non-Colorado River resources and provide a critical safety net for Southern Nevada against continued drought on the Colorado River.

Before this groundwater could be conveyed, an extremely comprehensive analysis was required under the National Environmental Policy Act. After the analysis was published, the BLM released a Record of Decision in December, granting the SNWA rights-of-way in the basins where it currently has permitted water rights. While this decision excludes rights-of-way in Snake Valley, it does not prevent the SNWA from pursuing its groundwater applications there, an action that is subject to additional environmental analysis.

The BLM decision was based on eight years of process and more than 20 years of environmental monitoring and data collection. The construction schedule for the groundwater development project



will be dictated by Colorado River conditions and other factors.

The SNWA not only locates available groundwater resources to augment our Colorado River allocation, it supplements that groundwater at the source. Cloud seeding, operated by the Desert Research Institute (DRI) and funded partly by the SNWA, continued in the Ruby Mountains in 2012 with preparatory work for new cloud seeding in the Schell Creek Mountains and Spring Valley in 2013. DRI scientists estimate

that cloud seeding in northeastern Nevada has accumulated approximately 15,000 acre-feet during the last 9 years.

Just as we may bank money for a rainy day, the SNWA banks water for a dry one. Water banking agreements with Arizona and California supplement Nevada's Colorado River allocation. Arizona stores up to 1.25 million acre-feet of Colorado River water for Nevada. This water may be utilized at a maximum annual rate of 40,000 consumptive use acre-feet per year. California has banked 70,000 acre-feet of water for Southern Nevada. A 2012 amendment to this banking agreement allows the SNWA to bank an additional 200,000-400,000 acre-feet between 2012 and 2016. Thanks to this amendment, the SNWA has been able to raise the amount stored in the California bank to 111,000 acre-feet.

These types of agreements and collaborations are extremely beneficial in the face of uncertain hydrologic conditions. A recent agreement between the United States and Mexico regarding Colorado River management allows Mexico to defer delivery and store a maximum 200,000 acre-feet of water annually in Lake Mead through 2016. The stored water is treated as Intentionally Created Mexican Allocation, similar to ICS credits. The agreement,

also known as Minute 319, addresses distribution of flows to Mexico under both low and high reservoir conditions, and includes a pilot program that allows the SNWA to invest in that country's infrastructure improvements in exchange for 23,750 acre-feet of ICS credits.

The SNWA collaborated with the U.S. Bureau of Reclamation and neighboring Basin states on a 2-year interagency study evaluating supply, demand and risk assessment along the Colorado River. Published in late 2012, the study analyzes future water supply and demand scenarios based on factors such as projected changes in climate and varying levels of growth in communities, agriculture and business in the seven Colorado River Basin states of Arizona, California, Colorado, New Mexico, Nevada, Utah and Wyoming.

The Colorado River Basin Water Supply and Demand Study includes more than 150 proposals from study participants, stakeholders and the public that represent a wide-range of potential options to resolve supply-and-demand imbalances. Proposals include increasing water supply through reuse or desalinization methods and reducing demand through increased conservation and efficiency efforts. The scope of the study does not include a decision as to how future imbalances should be addressed.

The Mojave Desert's unique plant and animal life has learned to do more with less in our arid environment, and our community has adapted as well.

Our Conservation Efforts

Southern Nevadans conservation efforts also helped decrease annual water consumption by nearly 29 billion gallons between 2002 and 2012. Even though 2012 was one of the warmest years on record, conservation strides were still realized thanks to community efforts, the SNWA's aggressive conservation campaign and one of the nation's most extensive water reuse programs. Of the 125 gallons per person used at home each day, about 50 gallons are recovered for reuse. As a result, a typical Southern Nevada resident's water footprint is actually less than 75 gallons each day.

Regional wastewater agencies capture virtually all indoor water, treat it using state-of-the-art systems to meet or surpass state and federal water-quality standards, and return it to the

Southern Nevadans converted more than 5.5 million square feet of turf to water-efficient landscaping in 2012.



Colorado River for “credits.” This process extends our community’s Colorado River use by 200,000 acre-feet of water each year. An acre-foot is enough water to supply two single-family homes in Southern Nevada annually.

Residents have responded to the SNWA’s combination of incentives, education, tiered rates and restrictions to reduce their per-person water consumption. The SNWA provides assistance through its Conservation Helpline—which residents may call for information, conservation advice or to report water waste; and a variety of publications, email notifications, newsletters and other free resources including a public-access television show offering practical water-efficiency and landscaping advice.

Much of our community’s water savings is accomplished through the Water Smart Landscapes (WSL) incentive program. Residents have replaced more than 162 million square feet of grass with water-efficient landscaping since the SNWA’s program began in 1999—enough grass to cover more than 2,700 regulation football fields.

Qualifying residents and businesses who convert lawns to water-efficient landscapes receive a rebate—up to a \$1.50 per square-foot—through the program. A nearly \$1 million grant from the U.S. Bureau of Reclamation—along with matching funds from the SNWA—helps fund the rebate incentives. More than 2,440 rebates were awarded in 2012, and 5.5 million square feet of turf converted.

As part of a cost-sharing agreement with the Bureau of Reclamation, the SNWA uses high-definition aerial imagery to verify accurate measurements for landscape conversion rebates and to help identify properties with large lawns that may be candidates for the program.

Less turf means less water and less energy needed for treatment and delivery. By eliminating 162 million square feet of turf, residents saved more than 385,000-megawatt hours of energy required to produce and deliver landscape irrigation water—a savings of approximately \$24 million. The electrical savings eliminates 28,950 metric tons of carbon dioxide annually, equivalent to eliminating the exhaust of 6,031 cars in one year.

Residents can save water in virtually every corner of their landscapes with SNWA rebate and incentive programs. More than 3,300 customers used SNWA rebate coupons to purchase pool covers, smart irrigation controllers and rain sensors in 2012, reducing annual water use by more than 42 million gallons.

More than 9,200 Southern Nevada families are living in state-of-the-art, water-efficient homes, designed to reduce household water consumption. Three Southern Nevada homebuilders participated in the SNWA Water Smart Home program, constructing homes that use about half the water compared to those built a decade earlier, and sold 461 new single-family homes in 2012.



The SNWA partnered with the Water Conservation Coalition and the Clark County School District to replace E.W. Griffith Elementary School’s grassy courtyard with water-efficient landscaping and garden beds, which serve as a living laboratory for students. The team also installed high-efficiency water fixtures and toilets, saving the school more than half a million gallons each year.





Whether in a home or a Las Vegas resort, water savings can be measured in many ways throughout the community. Southern Nevada resort properties and businesses saved more than 117 million gallons of water last year by participating in the SNWA's Water Efficient Technologies (WET) program.

Twenty-two WET projects—including cooling tower improvements, high-efficiency toilets, dishwasher and high-performance shower heads—incorporated water-saving technologies or converted landscaping through the program, designed to encourage water-saving practices at commercial and multi-family facilities.

Water-saving lessons can be learned by every generation in our community. A water-smart renovation at E.W. Griffith Elementary School, completed in 2012, saves approximately 225,000 gallons of water outside, and approximately 300,000 gallons inside.

The SNWA partnered with the Water Conservation Coalition and the Clark County School District to replace more than 4,000 square feet of the school's grass with elevated, water-efficient garden beds, which serve as a living laboratory for students and teach the importance of conservation. After installing water-efficient landscaping, the team retrofitted the school's interior with high-efficiency water fixtures and toilets, resulting in a total savings of about 525,000 gallons each year. The Water Conservation Coalition is a public/private partnership that works closely with the SNWA to sponsor projects within our community that promote water efficiency and education. The coalition, formed in 1995,

has grown to include about 150 businesses in our community.

Southern Nevadans' water-conservation efforts add up—our community's average per capita water use decreased from 315 gallons per capita per day (GPCD) in 1999 to 219 GPCD in 2012. A new conservation goal of 199 GPCD will help reduce demand by nearly 90 billion gallons by 2035. And even though conservation efforts reduce the amount of water being sold, Southern Nevadans' water rates remain lower than those in many comparable Western cities.

When communities share water-efficiency success stories, they foster a larger conservation movement. The SNWA partners with the U.S. Environmental Protection Agency's Water Sense Program, the Alliance for Water Efficiency and American Water Works Association to create a forum for the water industry to share successful conservation practices.

In 2012, the fourth-annual WaterSmart Innovations Conference and Exhibition drew nearly 900 participants from 35 states and 9 nations, and featured more than 130 professional sessions and more than 40 exhibitors.



While Southern Nevadans have done our part to use water judiciously and extend water resources, we also value our water quality. When we turn on the tap, we expect water that has been treated and tested to ensure our safety.

Our Water Quality

The SNWA tests our water more frequently and extensively than federally required.

The SNWA ensures that the water that arrives at our taps meets all federal drinking-water requirements. The SNWA continually strives to exceed this standard through advanced testing and analyses as part of our water-treatment and quality-assurance process. Ensuring clean, safe drinking water is part of our global commitment as well. SNWA scientists in 2012 coordinated a research project that helps standardize worldwide methods for analyzing levels of emerging contaminants—such as pharmaceuticals and personal care products—in water sources.

The SNWA partnered with a coalition of public and private entities, businesses and universities including Metropolitan Water District, Colorado School of Mines, University of Arizona, the German Federal Institute of Hydrology, Montgomery Watson Harza Laboratories, and

Environmental Resource Associates to examine testing methods during the 2-year project funded by the Water Research Foundation.

The team concluded that the best way to sample, preserve and analyze compounds found in wastewater, surface water and drinking water worldwide was the current technique used in the SNWA's laboratories. These findings established critical guidelines, which will help the EPA standardize testing methods to detect these compounds.

Trace amounts of manmade compounds appear in our drinking water, but organic compounds also can be a concern when it comes to water quality. A current SNWA research project focuses on helping water agencies better understand and treat algal blooms—rapid increases in algae populations often caused by phosphorus or nitrogen—in water supplies. Current treatments potentially release by-products that react with chlorine, such as Trihalomethanes. When complete, the SNWA's research will be presented to the Water Research Foundation, helping scientists identify and potentially eliminate the risks associated with these by-products.

Much of the SNWA's water-quality research is made possible through grant funding. In 2012, the SNWA received a WaterSMART grant from the Bureau of Reclamation to assess the impacts of climate change on

water quality in Lake Mead. Water quality changes at Lake Mead's intakes and Hoover Dam are being studied using a three-dimensional model. The model will not only consider water-quality changes when lake levels decline, it also will examine the differences when water levels rise rapidly.

Lake Mead serves as both Southern Nevada's main reservoir and as a recreation area for nearly 500,000 visitors each year. While visitors are welcome to enjoy the lake, their watercrafts sometimes bring unwanted hitchhikers that can endanger our water quality. The invasive quagga mussel, discovered in 2007, proliferates in Lake Mead, attaches to solid surfaces and endangers aquatic systems, potentially causing millions of dollars in damage to water pipes and intakes.

The SNWA has been controlling the invasive species with chlorine, but the use of chlorine can cause by-products that can exceed federal regulations. Currently, the SNWA is testing the alternative monochloramine to control quagga mussels, and works with the Lake Mead National Recreation Area, the Nevada System of Higher Education and other agencies under the Interagency Monitoring Action Plan, which coordinates the collection and sharing of quagga mussel data for Lake Mead.

The SNWA is a founding member of the Lower Colorado River Water Quality Partnership. The partnership in its first



By serving drinking water to customers only when it's requested, restaurants can save approximately 3 gallons of water for each unserved 16 ounce glass. Multiply that by the hundreds of restaurants in Southern Nevada and their number of daily patrons, and you can see how a small action can make a great impact in conserving resources. More than 200 restaurants participate in the Water Upon Request program.





year developed a Water Quality Issues document, which outlines Colorado River water concerns such as: salinity, nutrients, endocrine-disrupting compounds, pharmaceutical and personal-care products, bacteria and pathogens, industrial contaminants, invasive species, climate change, turbidity and suspended sediment and stormwater.

A coordination committee representing each partner agency—the SNWA, Metropolitan Water District of Southern California and the Central Arizona Water Conservation District—meets quarterly to evaluate water-quality protections and enhancements; review water-quality legislation; create a framework to

exchange information and develop an adaptive management plan.

Water quality is practiced at the source, and then Southern Nevada’s water is stringently treated at two state-of-the-art water treatment facilities before it reaches our taps. The SNWA conducts advanced testing and analyses—important components of the water-treatment and quality-assurance process.

The U.S. Environmental Protection Agency’s (EPA) Safe Drinking Water Act sets legal limits on the levels of certain constituents in drinking water. Besides prescribing these legal limits, EPA rules set water-testing schedules and methods that water systems must follow.

The EPA sets the standards for safe drinking water, but the SNWA continually works to exceed that standard by testing our water even more frequently and extensively than federally required. This testing ensures that the water provided to purveyors—the cities of Boulder City, Henderson and North Las Vegas; Las Vegas Valley Water District; and Nellis Air Force Base—meets or surpasses all Safe Drinking Water Act standards.

The SNWA processed approximately 34,000 samples and performed more than 322,000

analyses on Southern Nevada’s drinking water in 2012. SNWA scientists collect samples from intakes, treatment facilities and from treated water throughout the valley. The results from these samples are published in an annual water quality report for the SNWA’s two water treatment facilities that comprise the Southern Nevada Water System, as mandated by the Safe Drinking Water Act.

Testing and analysis occurs through all stages of the water treatment process, which begins when water is drawn from intakes below Lake Mead’s surface. The water is transported to our two water treatment facilities where it undergoes ozonation—the primary disinfectant in a multi-stage filtration process.

After ozonation, water at the Alfred Merritt Smith Treatment Facility is treated with chlorine gas as a secondary disinfectant. Water at the River Mountains Treatment Facility is treated with sodium hypochlorite as a secondary disinfectant.

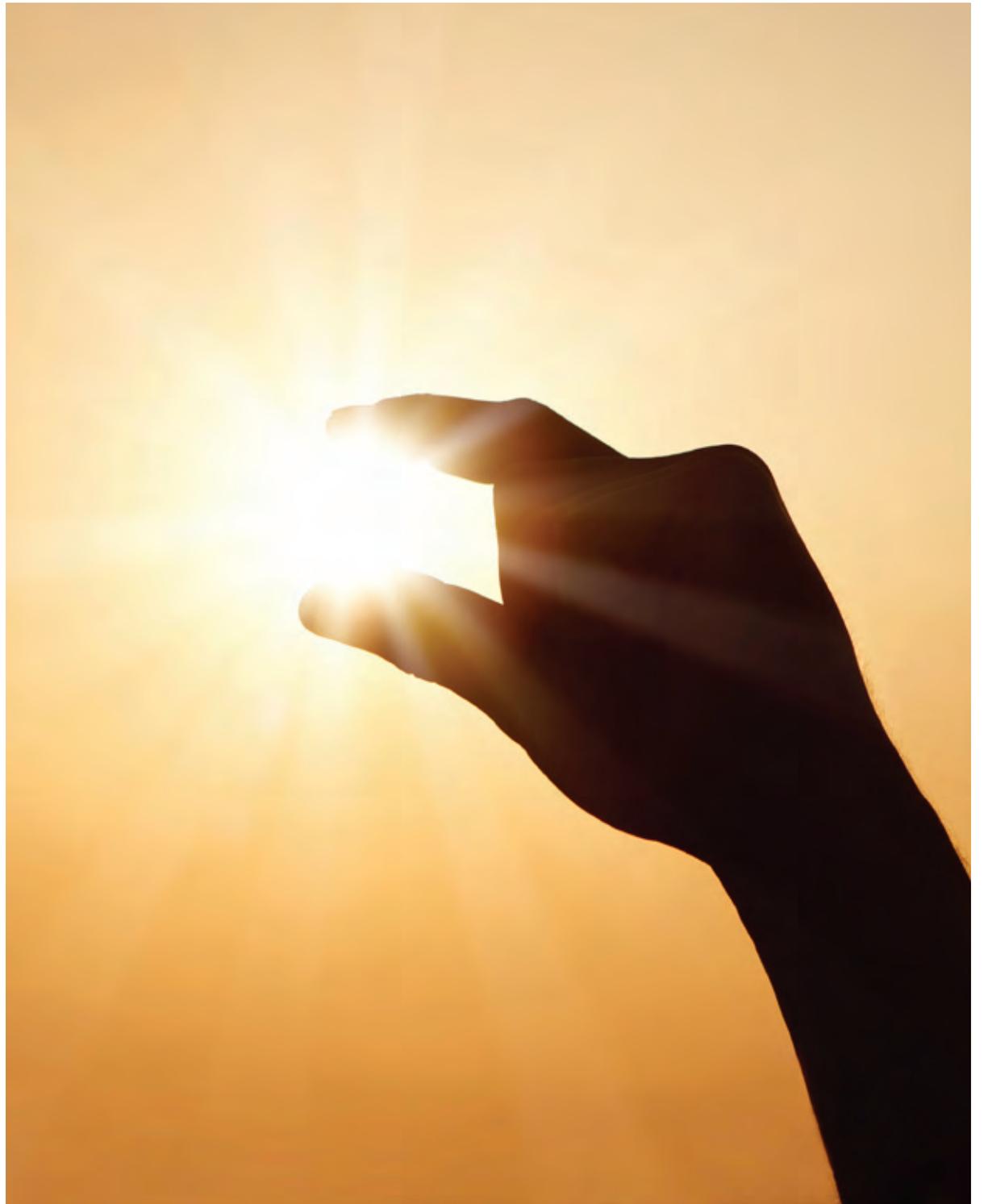
While ozonation is an effective, safe disinfectant, it does not remain in water for extended periods of time. Chlorine is added to protect the water while it continues through the distribution system. Zinc orthophosphate is added to mitigate pipe corrosion as the water travels from treatment facility to tap.

Earth's limited water resources are often the focus of our conservation efforts, but the ethic of sustaining all natural resources guides the SNWA's policies and procedures. From recycling efforts to alternative fuels to water treatment and delivery, the SNWA researches and utilizes renewable energy and alternative resources.

Our Energy Supplies

While the SNWA is one of the state's largest energy users, the Water Authority strives to use energy resources conscientiously and responsibly. It takes a lot of energy—about 1 million megawatt (MW) hours—to treat and deliver nearly 140 billion gallons of water annually to taps across the valley. Approximately 130 million kilowatt hours of the SNWA's power was supplied by renewable energy in 2012. This includes our owned renewable energy, the renewable equivalent for the power purchased from NV Energy and the projected amount of renewable energy included in what we purchase from the power grid.

The sun shines on Southern Nevada approximately 210 days a year, and the SNWA harnesses this renewable energy through photovoltaic systems at several of its facilities.





The SNWA generates renewable energy through hydropower and solar technologies. Combined, our renewable energy projects reduced our use of fossil fuel and offset about 52,000 Metric Tons of Carbon Equivalent this year.

As the SNWA supplies water, it also utilizes water to produce the energy needed to move water. Approximately 12 percent of SNWA's energy needs are met by the Hoover, Parker and Davis dam system. The rest is generated through hydropower projects at three rate-of-flow control stations in Las Vegas and Henderson. Hydroelectric generators at the Horizon Ridge, Sloan and Linden energy

recovery projects include small turbines and induction generators. Current SNWA hydroelectric energy recovery projects have a combined capacity of approximately 2.12 MW.

The SNWA can harness the strong desert sun to produce solar energy. The SNWA captures solar power through fixed photovoltaic systems at the River Mountains and Alfred Merritt Smith water treatment facilities. The panels serve as covered parking at the facilities and generate approximately .25 MW combined, and is used to serve the loads at these facilities. A .24 MW concentrating photovoltaic system at the River Mountains Water

Treatment Facility uses integrated dual-axis tracking to automatically track the elevation and movement of the sun, capturing 30 percent more energy than fixed panels. Combined with the solar covered-parking structures, the arrays generate enough power to support more than 50 average-sized Las Vegas homes.

The SNWA pursues environmentally responsible renewable energy options to expand our energy portfolio and voluntarily set renewable energy goals consistent with the State of Nevada's Renewable Portfolio Standard (RPS). Nevada's RPS represents the amount of electricity that a provider must generate, acquire or save from renewable energy systems or energy efficiency measures. Currently, the Nevada RPS requires that renewable resources constitute 25 percent of an electric provider's total energy portfolio by the year 2025. Renewable energy currently comprises 13 percent of the total SNWA energy portfolio.

Renewable energy is one part of the energy equation. Managing energy resources through collaborative efforts is another. The SNWA has forged partnerships to both realize cost-efficient power purchases for its member agencies and to further pursue alternative energy resources. The Energy Supply Program—a partnership between



the SNWA and the Colorado River Commission of Nevada (CRC)—is growing. The program is adding the City of North Las Vegas as a customer in 2013, and now supplies energy to the Las Vegas Valley Water District, the cities of Las Vegas and Henderson and the Clark County Water Reclamation District.

The SNWA continues to pursue partnerships with other entities that expand the Energy Supply Program

and allow for lower rates through shared costs. One such partnership is the Silver State Energy Association (SSEA) comprising public agencies that work jointly to plan, develop, own and operate energy resources to meet their own needs and those of their customers. SSEA members include Boulder City, the CRC, Lincoln County Power District No. 1, Overton Power District No. 5 and the SNWA.

In 2011, the SSEA became a full-service energy provider for its members. The SSEA also provides products and services needed to supplement the hydropower resources members obtain through contracts with the CRC or directly with the federal government.

The CRC transitioned out of its role of energy supplier for the SNWA's loads associated with the Alfred Merritt Smith Water Treatment Facility and the River Mountains Water Treatment Facility in early 2013. These loads are now supplied by the SSEA. The CRC will continue to supply labor resources to the SSEA, and there will be no changes in the CRC's interaction with the SNWA in matters affecting water and the environment.

The SSEA's Eastern Nevada Transmission Project, a high-voltage transmission system currently under development, will bring power to Southern Nevada

and connect participating SSEA members' electrical systems to each other and to the Mead Substation in Southern Nevada, resulting in reduced energy costs.

Energy resources also are provided through the SNWA's stake in the Silverhawk Power Station, which increases the availability of electric power to Southern Nevada. In 2012, the SNWA negotiated with NV Energy to extend the Silverhawk Power Exchange Agreement. The SNWA owns 25 percent of the 570-megawatt facility, which began operating in 2004. The plant's dry-cooled technology supports SNWA's conservation efforts by using 90 percent less water than a typical water-cooled plant and incorporates strict emission limits and the best available control technology for air quality.

Throughout the planning horizon, the SNWA will continue to forge relationships with other industries to construct new transmission facilities and renewable energy projects that address both sustainable water and energy needs for our community and region.



Our community comprises a rich tapestry, not only of neighbors and businesses, but also the creatures that are native to our desert environment. As different as we are, we all rely on water to exist. The SNWA works to ensure that our community has adequate future water supplies and that our natural environment is able to thrive.

Our Environment

The SNWA works with other agencies to conserve natural habitats and recover threatened and endangered species.

In some cases, this means restoring and protecting natural habitats of endangered species. Nevada is home to 36 animal and plant species listed as threatened or endangered and 13 candidates listed under the federal Endangered Species Act. Several of these species—White River spinedace, southwestern willow flycatcher and Moapa dace—are beginning to recover thanks to successful conservation programs.

The SNWA actively participates in environmental programs and collaborates with various endangered-species recovery teams and stakeholders throughout Nevada, Utah and

surrounding areas to help preserve the delicate balance of our environment. Many of these programs form the basis for compliance with appropriate environmental laws and regulations.

The Steering Committee for the Lower Colorado River Multi-Species Conservation Program (LCR MSCP) provides environmental compliance for all water and power operations on the Lower Colorado River. The program's Steering Committee comprises 56 entities from Nevada, Arizona, California, federal and state governments, water and power users, and other interested parties. By taking a proactive role in the health of the river and its natural inhabitants, Colorado River users are ensuring that both their uses and the river itself are sustainable.

As a program member, the SNWA helps to conserve habitat and recover threatened and endangered species while accommodating water diversions and power production on the river. The SNWA has been instrumental in the Big Bend Conservation Area LCR MSCP project, which has preserved valuable backwater for endangered fish.

Habitat restoration efforts are progressing along the SNWA's Warm Springs Natural Area—a habitat for 28 endangered or sensitive species. The area contains five major thermal springs that form the Muddy River's headwaters, home to the endangered Moapa dace,

a small fish found in the Warm Springs area. Thanks to the restoration efforts of a multi-agency team, including SNWA biologists and environmental planners, last year the endangered fish experienced its largest population resurgence since the recovery program began.

A U.S. Fish and Wildlife Service (USFWS) recovery plan for the Moapa dace set goals at 6,000 fish in five spring systems for five consecutive years, restoration of 75 percent of its historic habitat and control of non-native, invasive fish. To meet the goals set by the USFWS, biologists restored several stream segments on the property to a velocity and temperature that provide an ideal breeding and feeding ground for the dace. They also removed non-native blue tilapia, which prey upon the dace, and installed fish barriers in the Muddy River to prevent blue tilapia and other non-native aquatic species from entering the Moapa dace habitat.

The SNWA purchased the Warm Springs Natural Area—using Southern Nevada Public Land Management Act funding—in 2007 to protect the 1,220-acre property near the Moapa Valley National Wildlife Refuge. The area's 2011 Stewardship Plan, a collaborative effort between the SNWA and a core team of stakeholders, contains a framework for managing the Warm Springs Natural Area. The plan will preserve the integrity of the property's natural resources while managing its Muddy River and Coyote Spring Valley water resources.



The SNWA is committed to maintaining the Warm Springs Natural Area—a habitat for 28 endangered or sensitive species—by protecting and enhancing its natural resources, restoring wildlife habitat, managing invasive plant and animal species and stabilizing stream banks and channels.



Collaboration plays an integral part in managing our sensitive environment. The SNWA—in accordance with our code of ethics—works in concert with other agencies to help restore and protect the natural habitats of special status species through varied environmental programs, including:

- Lower Colorado River Multi-Species Conservation Program
- Muddy River Recovery Implementation Program
- Virgin River Habitat Conservation and Recovery Program
- Winter Raptor Survey Program
- Least Chub Conservation Team
- Columbia Spotted Frog Conservation Team
- White River Valley Fishes Recovery Implementation Team
- Pahrnagat Valley Recovery Implementation Team
- Desert Tortoise Recovery Implementation Team
- Big Spring Spinedace Recovery Implementation Team
- Relict Leopard Frog Conservation Team

- Clark County Desert Conservation Program
- Lower Virgin River Recovery Implementation Team
- Virgin River Fishes Recovery Team

Sustainable water development is key to the SNWA's plans for future groundwater development in east-central Nevada. The SNWA acquired ranch properties and associated surface and groundwater rights in Spring Valley to more effectively manage water and environmental resources in the area.

As one of the largest ranch owners in the Western United States, the SNWA underscores the organization's commitment to balancing responsible land stewardship with water-resource management by employing best management practices, such as water- and energy-efficient technologies and invasive weed-control treatments. The SNWA also coordinates with the BLM, the United States Forest Service, the University of Nevada, Reno and other professionals to improve livestock operations.

Researchers monitor ranch progress, perform ecological site assessments and conduct rangeland-condition analyses among a variety of federally mandated monitoring and reporting programs.

As part of the east-central Nevada water-rights process for Spring, Delamar, Dry Lake and Cave valleys, the SNWA



The SNWA acquired ranch properties and associated surface and groundwater rights in Spring Valley to more effectively manage water and environmental resources in the area. As one of the largest ranch owners in the Western United States, the SNWA underscores the organization's commitment to balancing responsible land stewardship with water-resource management.



signed stipulated agreements in 2006 and 2008 with Department of Interior (DOI) agencies, including Bureau of Indian Affairs, BLM, USFWS and National Park Service.

Technical teams representing the agencies developed biological and hydrological monitoring plans pursuant to the obligations of the agreements. Plans include monitoring baseline conditions prior to and during groundwater withdrawals. Two years of baseline biological monitoring have been completed in support of environmental agreements and SNWA water rights in Spring Valley. This monitoring has been documented in annual reports submitted to the DOI and the Nevada State Engineer. Biological monitoring has included 13 types of surveys conducted across 28 monitoring sites. Recent efforts have focused on supplemental baseline data collection and studies to support the monitoring program. Long-term fish monitoring on the Virgin and Muddy rivers support environmental agreements, SNWA water rights and ICS.

The monitoring plans will be reviewed and revised as needed to reflect monitoring refinement, mitigation and management activities.

The BLM completed its National Environmental Policy Act review on SNWA's request for rights-of-



way to construct the Clark, Lincoln and White Pine Counties Groundwater Development Project (GWD Project) in east-central Nevada. A final Environmental Impact Statement was released in August 2012, and a Record of Decision was signed in December 2012. The process encompassed 8 years of research, analysis, review, and public comment, and involved 16 cooperating agencies. The BLM also consulted with the USFWS, as required under the Endangered Species Act, to assess potential effects on federally listed species.

The BLM decision allowed rights-of-way to be issued to SNWA for basins where the agency currently has permitted water rights in May 2013. The Nevada State Engineer in 2012 granted the SNWA 61,127 acre-feet per year from Spring Valley and 22,861 acre-feet per year from Delamar, Dry Lake and Cave valleys. The GWD project schedule will be dictated by Colorado River conditions and availability of SNWA's other water resources.

The SNWA conducts other biological field studies in central Nevada and western Utah in support of



current and future environmental permitting processes. Recent biological efforts include a greater sage grouse telemetry study, greater sage grouse surveys at mating sites, northern leopard frog breeding surveys, relict dace distribution study, springsnail study and Rocky Mountain juniper study and mapping effort in the swamp cedars of Spring Valley. The SNWA also assists other agencies' efforts for sensitive species in the region, including Pahrump poolfish, winter raptors, and Utah's Columbia spotted frog and least chub.

Downstate, environmental monitoring activities are conducted in an area significant to Southern Nevada's main water reservoir. The Las Vegas Wash

naturally filters nearly 200 million gallons of urban flows and runoff each day on its way to Lake Mead. In addition to its role as a natural carrier and filter, the Wash also has become a thriving wildlife habitat.

At the approximately 2,900-acre Las Vegas Wash and Clark County Wetlands Park the SNWA has helped identify nearly 1,000 species of plants and wildlife including birds, mammals and insects.

To help protect and manage the area, the SNWA in 1998 assembled the Las Vegas Wash Coordination Committee (LWCC) at the recommendation of a citizens advisory committee. The LWCC developed

a long-term management plan to revitalize and enhance the Wash and surrounding wetlands.

These efforts were recognized by the American Public Works Association Nevada Chapter, which in 2012 honored the Homestead and Lower Narrows weirs project with the Environmental Project of the Year award. The weirs comprise two of the largest grade-control structures built in the nation. Engineers designed the weirs to contain and withstand floodwater forces reaching 23,000 cubic feet per second. The weirs contain rock riprap, comprised primarily of rubble from demolished and imploded casinos, span nearly 480 feet and steer water through a 31-foot grade drop.

The Wash plays a vital role within our environment, and our community plays a vital role in protecting the Wash. More than 7,000 volunteers have worked with the SNWA staff to collectively remove approximately 350,000 pounds of trash and plant more than 65,000 trees, shrubs and grasses. During bi-annual Las Vegas Wash Green-Up events, volunteers have re-vegetated approximately 170 acres along the Wash. The activities completed an approximate 3.5-mile stretch of re-vegetated land, much of which was once plagued by invasive tamarisk. The restored area will eventually connect to a trail system in development along the Clark County Wetlands Park.

Early Southern Nevadans formed settlements around the Las Vegas Springs, and for hundreds of years, the natural springs united people in a community that flourished. Today, our community is still united by issues surrounding water—such as drought and conservation—and plays an important role in successfully managing Southern Nevada’s water resources.

Our Community Investment

Throughout its 20-year history, the SNWA has regularly sought input and guidance from citizens advisory committees. In 2012, the SNWA Board of Directors appointed an Integrated Resource Planning Advisory Committee (IRPAC) to help guide future funding-scenario recommendations and water-resource and facility planning for Southern Nevada.

The 21-member citizens committee—which includes representatives from businesses, chambers of commerce, residents, education, environmental and financial sectors—evaluates SNWA goals, policy objectives, infrastructure and water rates. Members work with a neutral facilitator and the public to provide stakeholder

More than 10,000 volunteers have removed approximately 500,000 pounds of trash and planted more than 65,000 trees, shrubs and grasses at the Las Vegas Wash.





and resident input, and will make formal recommendations to the SNWA Board in late 2013.

The public will have the opportunity to experience Southern Nevada's unique environment when a .75-mile loop trail with informational kiosks at the Warm Springs Natural Area near Moapa is completed in 2014. The trail will follow the Pederson and Apcar streams, which are home to the endangered Moapa dace, and lead visitors through riparian trees, wetland plants and boardwalk overlooks that offer views of the property and wildlife.

Southern Nevadans can learn about our desert environment and native landscapes along any of the

many and varied trails around the valley, but those people who prefer a hands-on learning experiences can attend SNWA-sponsored classes at the Springs Preserve. More than 190 residents attended a variety of free do-it-yourself classes taught by SNWA experts in 2012. Participants learn how to design a new landscape or convert an existing yard. The classes provide information on water-efficient plant selection, optimal plant locations, installation and maintenance. The SNWA also offers free classes to help residents install drip-irrigation systems, which typically use less water than sprinklers.

Efforts within our local community have gained global attention. In 2012, the SNWA shared water-management strategies with countries in similar drought-stricken and arid regions. Delegates from China, Japan and Africa—among others—visited the SNWA seeking urban sustainable-growth strategies and conservation initiatives. A newly formed partnership between Mekorot (an Israeli water wholesaler), which faces water challenges similar to the American Southwest, and the SNWA will allow staff to exchange technologies, knowledge, experiences and strategies to benefit both countries.

Younger generations in Southern Nevada are learning about the value of water and its issues through several SNWA programs created especially for students. H2O University youth education program—with goals linked to Clark County School District curriculum and Nevada State Standards—helps educate tomorrow's leaders about global



For more than 10 years, community high school students have come together to educate their peers about water challenges in Southern Nevada. This talented group is known as the SNWA's Youth Advisory Council. The students conducted five workshops during their summit to heighten awareness about water and environmental issues, and to reinforce their key message that "Every Drop Counts." The students presented their experience and recommendations to the SNWA Board of Directors.





water issues facing us today. The program also tackles local and global water issues that likely will be prominent in the future.

Participants learn the unique qualities of water, the role it has played in Southern Nevada's history and culture and the importance of conservation. Teachers are trained through the program so they can help students learn how to protect our most precious natural resource. Additionally, the program's official

website H2OU.org offers online tools, resources, games and information for grades K-12 and includes a section for parents and teachers as well as a library of resources, including videos and multimedia demonstrations.

Elementary-school students also learn about water and our desert environment through the SNWA publication *Desert Discovery*. The newsletters, also available in Spanish, distribute to more than 197,000 Clark County students and share age-appropriate information about conservation, plants, animals and water resources found in Southern Nevada. The periodical distributes free of charge to local public and private elementary schools. A teacher's edition provides additional resources, ideas and activities to complement the content.

Some Central American elementary-school students received a lesson about the importance of conservation from the SNWA's Deputy Drip. In 2012, Deputy Drip appointed 65 Junior Deputies from the International School of Panama. The children—comprising four kindergarten classes at the school—sent letters to Deputy Drip pledging to help their teachers, family and friends conserve water. Deputy Drip—the SNWA conservation mascot—helps younger students understand the value of water through games, songs, videos and activities.

High-school students have the opportunity to expand their water education through the Youth Advisory Council (YAC)—a team of students working together to raise awareness of local water issues in their schools and communities. The council sponsored two water-related projects in 2012.

Council members organized the Youth Environmental Summit at the Springs Preserve, engaging more than 100 teens in discussing and exploring solutions to local and global environmental issues. The students also worked with Cirque du Soleil to coordinate World Water Day activities at the Springs Preserve and raise awareness of global water issues. The year-long YAC program—coordinated by the SNWA since 1999—gives students the opportunity to gain leadership experience through studying water issues.

Several field trip programs allow students throughout the valley to learn about our environment and its precious water resources. The Springs Preserve hosted more than 33,500 students—who experienced zoology, archaeology, horticulture and more—through its Field Trip Program in 2012, supported, in part, by the SNWA. Mabel Hoggard Elementary School fifth-grade students are educated at the Las Vegas Wash on the importance of watershed protection and management.



Southern Nevada's economy has changed dramatically. From a booming region that saw the construction of more than 30 new hotels in 2 decades, to a region with one of the highest foreclosure rates in the nation, Southern Nevada is adapting to changing times.

Our Finances

The SNWA responded to Southern Nevada's economic challenges by reducing operational costs, restructuring debt and deferring new construction.

When new construction and commercial development slowed, the SNWA's Connection Charge revenue plummeted from \$188 million at the peak of the construction boom in 2006 to \$13 million in 2012.

As growth in Southern Nevada levels, the SNWA has begun transitioning from collecting growth-based revenue to collecting other sources of revenue to stabilize its financial reserve fund and bond rating. As part of this transition, in 2012 the SNWA instituted an infrastructure charge to offset significant declines in connection charge revenues and fund improvements to critical water-treatment and transmission infrastructure, including the third intake currently under construction at Lake Mead. A citizens advisory committee, assembled in 2012, will evaluate the current SNWA rate structure and

funding and make recommendations to the SNWA Board of Directors later this year.

In response to Southern Nevada's changing economic picture, the SNWA responded accordingly and reduced operational costs by \$56 million, including a 25 percent reduction in workforce expenditures, restructured existing debt and deferred more than \$395 million in new construction and approximately \$130 million in additional expenses.

The Water Authority has a financial reserve fund of \$242 million. This allows the SNWA to sell bonds through the Las Vegas Valley Water District and the state and county bond banks to finance capital improvement projects. It also allows the SNWA to maintain a Standard & Poors AA- bond rating. The SNWA operates from three primary sub funds:

- Wholesale Delivery Operations, which is funded by wholesale delivery charges paid by retail purveyor members of the Water Authority;
- New Expansion Debt Service, which is funded primarily by connection charges, usage fees and sales taxes; and
- Capital Improvements Construction, which is funded almost entirely by tax-exempt municipal bonds the SNWA has sold.

The SNWA Groundwater Management Program and Las Vegas Wash sub funds operate with minimal activity. By state statute, the SNWA operates as a single proprietary fund. Costs of providing goods and services to customers are recovered through user charges.

The SNWA requires significant power resources to treat and deliver water to retail purveyors. Higher energy costs are absorbed as the SNWA manages some of its own power supplies in a cooperative effort with the Colorado River Commission. These efforts resulted in an estimated savings of approximately \$62 million over the last 5 years. Mitigating the financial effects of rising power rates will continue to be a primary focus for the SNWA.

The following financial information is based on the Fiscal Year ended June 30, 2012, and represents an overview of the SNWA individual operating programs, funds, revenues and expenditures.

Wholesale Delivery Operations

The Wholesale Delivery Operations sub fund had a balance of \$34.9 million as of June 30, 2012.

The Wholesale Delivery Charge is designed to cover the costs of administration and delivery of water through the Southern Nevada Water System. For the fiscal year ended June 30, 2012, the

Wholesale Delivery Charge was \$293 per acre-foot of treated Colorado River water delivered to purveyor members of the SNWA. Purveyor members then sell the water to retail customers.

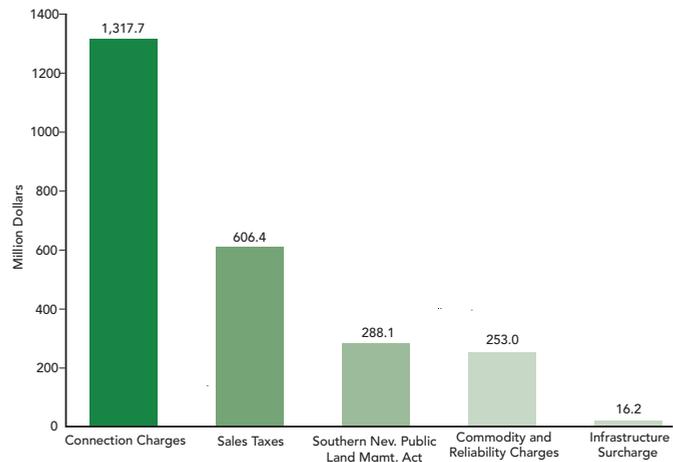
The SNWA has no retail customers of its own. Nellis Air Force Base pays a modified Wholesale Delivery Charge, and Boulder City pays a Raw Water Wholesale Delivery Charge.

New Expansion Debt Service

The New Expansion Debt Service sub fund had a balance of \$242 million as of June 30, 2012. This balance is needed to provide a prudent debt service coverage ratio, and is consistent with projections of the Capital Improvements Funding Program, which determines how the costs of the SNWA Major Construction and Capital Plan (MCCP) will be funded.

The SNWA Board of Directors retired the Capital Improvements Plan (CIP) in 2010, 14 years after it was first issued and had achieved the goals for which it was established. The plan's remaining projects, including Lake Mead's third intake, were consolidated into an amended Major Construction and Capital Plan. The February 2011 amendment to the plan identifies 29 active projects and approximately \$432 million in savings from 34 deferred projects.

New Expansion Revenues Cumulative through June 2012



Most of the construction costs will be provided by funds from the sale of tax-exempt municipal bonds. The money to make debt service payments on those bonds will continue for years after the last connection to the new system is sold; the balance in this sub fund is projected to continue to grow for years, and then will begin to decline to a zero balance.

Traditionally, the major revenue source in the New Expansion Debt Service sub fund has been the regional connection charge. This charge on every new connection to the system is collected by SNWA purveyor members and remitted monthly.

The second major revenue source in this sub fund is sales tax. This is the one-quarter of 1 percent that was added to the existing sales tax rate in Clark County in April 1999. This revenue is collected by the state Department of Taxation and remitted to the SNWA monthly on a two-month lag. The SNWA shares this revenue with wastewater agencies, rural water and wastewater systems and the Las Vegas Wash. Sales tax collections will conclude in June 2025, or when \$2.3 billion has been collected, whichever occurs first. However, the 2011 Nevada Legislature voted to lift these limits pending approval of the Clark County Board of Commissioners. The sales tax generated approximately \$928 million through June 30, 2012, of which the Water Authority retained \$606 million, with the balance allocated to the Las Vegas Wash, rural systems and wastewater purveyors.

One revenue source that is challenging to forecast is the SNWA's share of revenues from the Southern Nevada Public Land Management Act (SNPLMA), a federal law passed in 1997.

The SNPLMA calls for the SNWA to receive an amount equal to 10 percent of the purchase price of certain public land sales in the Las Vegas Valley, with proceeds restricted to paying debt service of construction costs of the SNWA Major Construction and Capital Plan.

SNWA revenues from the SNPLMA are based solely on the availability and sale price of public lands in the valley. Since the act was finalized after the 1997 model forecast was prepared, that forecast contained no projection of revenue from this source. The \$288 million in SNPLMA revenue received to date makes it the third-largest New Expansion revenue source. However, its prominence as a revenue source has decreased substantially and is expected to remain low in future years.

The primary outflow of this sub fund is debt service payments on bonds sold to fund the Capital Improvements Program. Also, according to the Major Construction and Capital Plan, the sub fund also pays some construction expenses directly (pay-as-you-go), which eliminates the cost of borrowing (interest).

A fourth revenue source is a combined rate-based commodity charge, reliability surcharge and infrastructure charge. Southern Nevada residents who are connected to a municipal water system pay the commodity charge monthly. Funds raised from this charge are used to improve water quality and enhance the reliability of the water system. This accounts for about 10 percent of Major Construction and Capital Plan funding.

The reliability surcharge is based on the concept that customers have varying levels of critical need for water and should pay accordingly. The surcharge shifts some of the financial burden of costs associated with reliability from residential customers to all other customers. The rate, which is applied against the total water bill with a few line item exceptions, has been set at 0.25 percent for residential customers and at 2.5 percent for all other customers. The reliability surcharge provides about 5 percent of Major Construction and Capital Plan funding.

The infrastructure charge, established in 2012, is a three-year charge that will pay for several large water system projects, including a critical new intake designed to protect Southern Nevada during severe drought conditions. The SNWA infrastructure charge rates vary based on meter size and are calculated daily.

Capital Improvements Construction

This sub fund receives bond proceeds and pays construction expenses with those proceeds. When bond funds are depleted, the cash balance in the New Expansion Debt Service sub fund is used until additional bonds can be sold. At that time the New Expansion Debt Service sub fund is reimbursed for its capital expenditures and the remaining bond funds

stay in the Capital Improvements Construction sub fund to pay for future capital expenses.

As of June 30, 2012, \$500,000 remained in the Capital Improvements Construction sub fund. The sub fund is almost always “overcommitted but under-expended,” meaning construction contract commitments generally exceed the amount of bond proceeds on hand. This sub fund has earned an estimated \$6 million in tax-exempt arbitrage interest by complying with federal requirements for exemption. These interest earnings have reduced the overall costs associated with the Capital Improvements Construction sub fund. Debt management strategies are expected to save an additional \$370 million over the life of the projects.

Groundwater Management Program

The Groundwater Management Program sub fund had a balance of \$1.6 million as of June 30, 2012. As authorized by state law, the SNWA assesses an annual fee of \$30 per acre-foot of permitted groundwater rights, or \$30 per domestic well. Since recharge volume has not been significant, the SNWA reduced the assessed fees to \$13 beginning July 1, 2009. Proceeds from this fee are used to manage the aquifer, fund permanent recharge of the aquifer and, when needed, fund well abandonment and conversion to municipal water systems. Much of

the ending balance will be spent on well conversions in future fiscal years.

Las Vegas Wash

The Las Vegas Wash sub fund had a balance of \$900,000 as of June 30, 2012. The SNWA invests in programs and research to find solutions to critical environmental and water-quality issues surrounding the Las Vegas Wash, the natural channel that returns runoff from the Las Vegas Valley to Lake Mead.

Operating costs are funded by assessments of member agencies. In addition, the Las Vegas Wash receives 4 percent of sales tax proceeds received by the SNWA. These proceeds have been used to fund capital improvements in the Wash, such as the construction of weirs to stabilize and protect Wash banks. However, a funding formula is in place for stakeholders in the Las Vegas Wash to reimburse the SNWA for operations of the Wash committee. Grants also represent a significant revenue source for activity related to the Wash.

The table Sources and Uses of Funds Summary provides a ledger view of sources and uses of funds within the individual sub funds discussed in this financial overview for the Fiscal Year ending June 30, 2012.

The first half of the ledger represents sources of funds received during the Fiscal Year; the bottom half represents expenditures of those funds. Dollar amounts in each row are added across for a total. The numbers shown in the beginning and ending balance rows are balances in these sub funds before and after this year's sources and uses of sub funds. Dollar amounts are presented in millions.

Sources and Uses of Funds Summary

Fiscal Year Ended June 30, 2012

(In millions of dollars)

	Wholesale Delivery Operations	New Expansion Debt Service	Capital Improvements Construction	Groundwater Management Program	Las Vegas Wash	Total
Beginning Balance (July 1, 2011)	32.3	309.0	78.3	1.3	0.9	421.8
Sources of Funds						
Operating Revenues	119.2					119.2
Other Revenues	0.2	2.8	0.6	0.9	6.6	11.1
New Expansion Revenues		120.4			3.0	123.4
Intra Fund Loans		(1.0)			1.0	
Debt Issuance Proceeds			1.0			1.0
Interest Income			0.1			0.1
Total Sources of Funds	119.4	122.2	1.7	0.9	10.6	254.8
Uses of Funds						
Power Costs	(44.5)					(44.5)
Payroll Costs	(38.0)			(0.2)	(0.5)	(38.7)
Operations and Maintenance	(21.8)			(0.4)	(0.2)	(22.4)
Operating Capital Expenditures	(0.9)	(5.1)				(6.0)
Const. & Resource Expenditures		(46.7)	(79.5)		(9.9)	(136.1)
Debt Service	(11.6)	(137.4)				(149.0)
Total Uses of Funds	(116.8)	(189.2)	(79.5)	(0.6)	(10.6)	(396.7)
Fiscal Year Net Change	2.6	(67.0)	(77.8)	0.3		(141.9)
Ending Balance (June 30, 2012)	34.9	242.0	0.5	1.6	0.9	279.9