



SOUTHERN NEVADA WATER AUTHORITY®

Water Efficient Technologies Program Athletic Field Turf Conversion Incentive Project

(\$2,000,000)

**WaterSMART Grants:
Water and Energy Efficiency Grants FY2023**

Notice of Funding Opportunity No. R23AS00008

Funding Group II

July 28, 2022

Applicant:

Southern Nevada Water Authority

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1. Technical Proposal: Executive Summary

Date: July 28, 2022

Applicant: Southern Nevada Water Authority (Category A Applicant)

Location: 1001 South Valley View Boulevard, Las Vegas, Nevada 89153 (Clark County)

Project Summary

As severe and sustained drought conditions in the Colorado River Basin continue to threaten water supplies and delivery systems, water conservation is a critical tool used to ensure a safe and reliable drinking water supply for Southern Nevada. The Southern Nevada Water Authority (SNWA) located in Las Vegas, Nevada, will provide funding incentives through the Water Efficient Technologies (WET) Program for the Clark County School District (CCSD) – the fifth-largest school district in the nation. These schools will complete conversions from natural grass to artificial turf on 22 fields at 11 high schools. This project will result in an estimated permanent annual savings of 337.61 acre-feet per year (AFY) by converting 1,507,000 square-feet of natural grass to artificial turf during the project period. Over the life of the improvement (10 years), the cumulative impact of this project is estimated to result in a savings of 3,038.48 AF. These permanent savings will allow SNWA to contribute additional unused Colorado River water toward interstate banking efforts. The project is supported by SNWA’s Joint Conservation Plan and Water Resource Plan, both of which prioritize reducing water demands and maximizing the use of available resources through aggressive conservation measures.

Length of Time and Estimated Completion Date

The proposed project encompasses activity from June 2023 through May 2026. Rebates will be issued after the successful completion of each turf conversion. All rebates will be issued by May 2026.

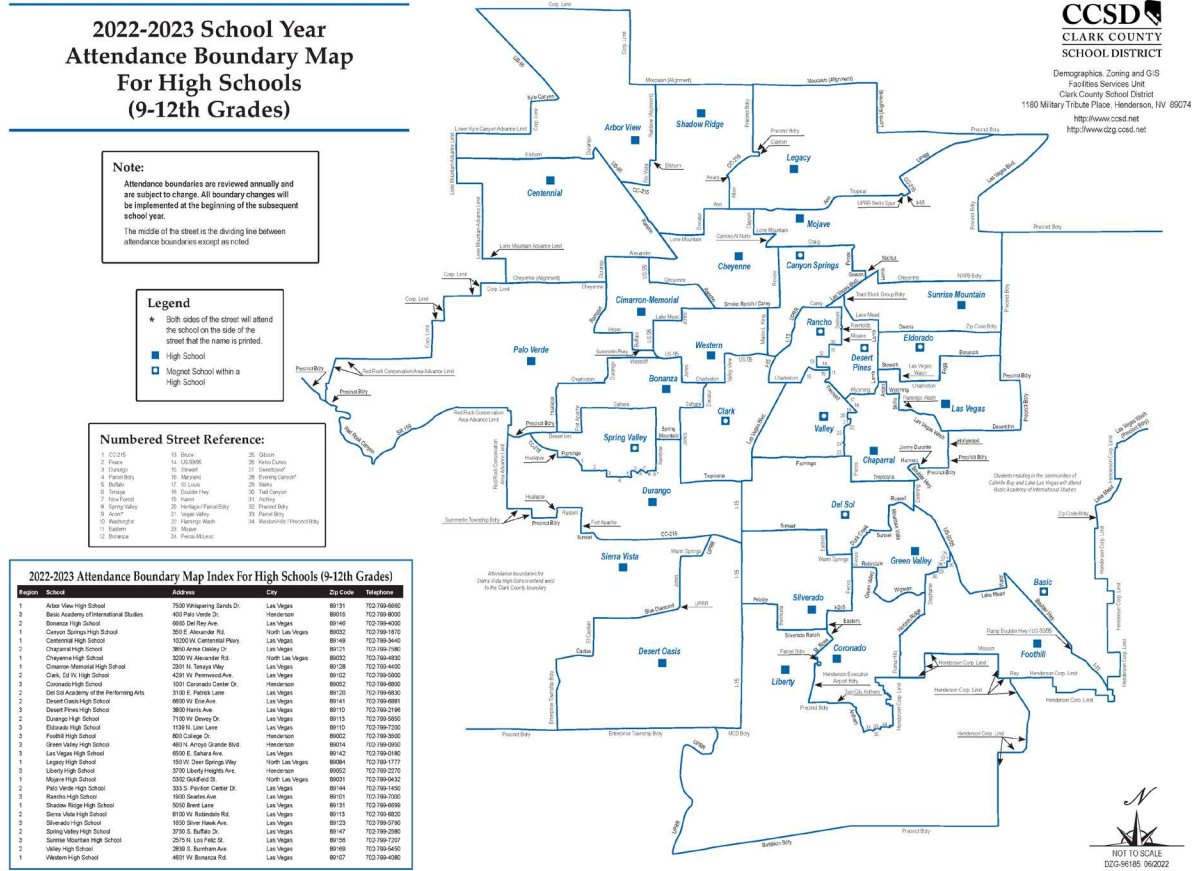
Federal Facilities

The proposed project is not located on a federal facility.

2. Technical Proposal: Project Location

The proposed project will provide incentives for turf conversion on student athletic fields located in Clark County, Nevada. A map of CCSD high schools with attendance boundaries, is included as Figure 1 below.

Figure 1. CCSD High School Map



2022-2023 Attendance Boundary Map Index for High Schools (9-12th Grades)

Region	School	Address	City	Zip Code	Telephone
1	Arbor View High School	7500 Whispering Sands Dr.	Las Vegas	89131	702-789-6086
2	Banc Academy/International Studies	400 Day Vista Dr.	Henderson	89015	702-789-6002
2	Bonanza High School	6605 Dell Rey Ave.	Las Vegas	89140	702-789-4200
1	Canyon Springs High School	5001 Alexander Rd.	North Las Vegas	89052	702-789-5150
1	Centennial High School	10200 W. Centennial Pkwy.	Las Vegas	89149	702-789-3440
1	Chaparral High School	3845 Arroyo Canyon Dr.	Las Vegas	89121	702-789-5460
1	Cheyenne High School	3200 W. Alexander Rd.	North Las Vegas	89052	702-789-4830
1	Commer International High School	2201 N. Newage Hwy	Las Vegas	89128	702-789-4650
2	Cook, C. H. High School	4201 W. Fremont Ave.	Henderson	89122	702-789-5900
3	Coronado High School	1001 Coronado Center Dr.	Henderson	89052	702-789-6600
2	Del Sol Academy of Performing Arts	3100 S. Paradise Lane	Las Vegas	89120	702-789-6300
2	Desert Oasis High School	8600 W. Ely Ave.	Las Vegas	89141	702-789-6981
2	Desert Pines High School	3800 Hanks Ave.	Las Vegas	89120	702-789-5146
2	Durango High School	7100 W. Dorey Dr.	Las Vegas	89113	702-789-5000
2	Elkhorn High School	11300 S. Lake Lane	Las Vegas	89115	702-789-5200
3	Footfall High School	800 Camp Dr.	Henderson	89052	702-789-5000
3	Green Valley High School	4603 E. Sahara Blvd.	Henderson	89115	702-789-5600
3	Las Vegas High School	6500 E. Sahara Ave.	Las Vegas	89142	702-789-0180
1	Legacy High School	15315 One Springs Hwy	North Las Vegas	89084	702-789-7177
2	Liberty High School	3702 Liberty Heights Blvd.	Las Vegas	89052	702-789-2210
1	Mojave High School	5300 Gaudet Dr.	North Las Vegas	89021	702-789-6432
2	Pahr Verde High School	333 S. Pahr Verde Center Dr.	Las Vegas	89141	702-789-1502
2	Rancho High School	1900 Sutter Ave.	Las Vegas	89121	702-789-7030
1	Shadow Ridge High School	9000 Brent Lane	Las Vegas	89131	702-789-6999
2	Sierra Vista High School	8100 W. Rainbow Rd.	Las Vegas	89113	702-789-6920
2	Sierrita High School	15000 Brent Lane	Las Vegas	89120	702-789-7200
2	Spring Valley High School	3700 S. Durango Dr.	Las Vegas	89147	702-789-2080
2	Summer Mountain High School	2070 N. El Paso Dr.	Las Vegas	89160	702-789-5257
2	Valley High School	2800 S. Burnham Ave.	Las Vegas	89169	702-789-5450
1	Western High School	4601 W. Bonanza Rd.	Las Vegas	89127	702-789-4980

3. Technical Proposal: Technical Project Description

In Southern Nevada, nearly all water used indoors is recovered, treated, and returned to the Colorado River system for return-flow credits. The recycling of Colorado River water used in Southern Nevada is accrued according to the 1984 U.S. Bureau of Reclamation “Procedure for Determining Return-Flow Credits to Nevada from Las Vegas Wash” and subsequent administrative updates authorized by the Bureau of Reclamation (Reclamation). This process extends Nevada’s Colorado River water supply by nearly 70 percent. As a result, SNWA’s conservation efforts emphasize reducing outdoor water use, which cannot be recovered through return-flow credits. Three main consumptive uses include outdoor use (irrigation, pools), septic systems, and cooling.

The Water Efficient Technologies (WET) Program is a key component in SNWA’s efforts to meet its conservation goals; since 2001, participation in the WET program has saved more than 15 billion gallons of water. The WET Program offers financial incentives to commercial and multi-family property owners who install water-efficient devices and technologies. Another component of the WET Program is the School and Park Turf Conversions Program, which is designed to facilitate the use of more water-efficient grasses, ground covers, and park amenities in places where turf grass is considered functional, like parks and school playing fields.

To be eligible for the School and Park Turf Conversion Program, an applicant property must be a municipal, county, regional park, public/private school, or government facility within the SNWA service area. A qualifying school is a public or private educational institution recognized by the Nevada Department of Education and served by SNWA water resources. A qualifying park is an outdoor recreational facility operated in the public interest and served by SNWA water resources.

The SNWA determines the project eligibility and may require an interlocal agreement to execute the rebate or authorize pre-payment of the incentive. Projects must reduce consumptive water demand while retaining outdoor recreational function, so conversion of landscape space to such uses as vehicle parking, walkways, or the erection of building (including buildings containing recreational facilities), is not eligible. Projects must reduce or eliminate onsite consumptive water used by, but not limited to, irrigated landscape, cooling systems, and open bodies of water, such as pools, ponds, or fountains.

Projects in the School and Park Turf Conversion Program fall into two categories (1) ***cool season to warm season turf conversion projects*** or (2) ***sports and recreation surface projects***. ***Cool season to warm season turf conversion projects*** must use warm season turfgrass species to replace cool season turfgrass species. The proposed project aligns with the second category, ***sports and recreation surface projects***.

Sports and recreation surface projects are projects in which landscape is replaced while sustaining outdoor recreational value, such as the conversion of turf grass to artificial turf to support football, field hockey, or lacrosse fields; the replacement of natural turf to install tennis or pickleball courts; and dog parks. If a project replaces irrigated landscape, the irrigation system must be modified to appropriately exclude the project area without compromising efficiency of the system. Sporting surfaces may be substituted with artificial turf, concrete, permeable concrete, safety play surface, decomposed granite, or any SNWA-approved surface.

Water savings and rebates are calculated by SNWA. Sports and recreation projects converting to warm season species will receive \$1.00 per square foot, per-property per SNWA fiscal year. Conversions from live turf grass to sporting and recreational surfaces will receive \$3.30 per square foot up to \$500,000 per field. Labor costs are not included in the incentive.

Incentive rebates for the School and Park Turf Conversion maintains the following terms:

- SNWA reserves the right to limit or reject applications subject to availability of funds.
- Each property is limited to \$500,000, in approved payments per-property per SNWA fiscal year, (July 1-June 30), unless authorized by SNWA.
- SNWA requires invoices of associated material costs.
- SNWA does not pay for labor costs incurred during the project.
- Through participation in this program, SNWA reserves the right to perform water saving evaluations from meter(s) servicing the property.
- Agreements expire in one calendar year with the term beginning the day after the applicant's receipt of the letter of acceptance and ending at 5 p.m. on the first business

day after one calendar year has elapsed. The applicant must notify SNWA of completion prior to expiration of the agreement.

- Projects that require more than one calendar year will need pre-approval from SNWA.

The proposed project focuses on incentives for *sports and recreation surface projects*. CCSD schools will complete conversions from natural grass to artificial turf on 22 CCSD athletic fields, 11 baseball fields and 11 softball fields at 11 high schools. Sustaining a single square-foot of grass requires 73 gallons of water per year. As demonstrated in [SNWA's 2005 Xeriscape Conversion Study \(https://www.snwa.com/assets/pdf/reports-xeriscape.pdf\)](https://www.snwa.com/assets/pdf/reports-xeriscape.pdf), every square-foot of grass replaced with desert landscaping saves an average of 55.8 gallons of water per year. Projects like the proposed project will eliminate the need for irrigation and save the full 73 gallons per square foot. (See Evaluation Criteria A – Quantifiable Water Savings from Turf Removal for additional information.)

WET School and Park Turf Conversion Program Process

The following details the general process that CCSD schools will follow to qualify for and receive sport and recreation surface project conversion rebates:

1. **Application** - CCSD will work directly with the SNWA Conservation division. CCSD schools meet the criteria outlined above and are determined eligible for rebates.
2. **Pre-conversion site inspection** – All fields must meet eligibility requirements. At the pre-conversion site inspection, SNWA staff document and measure the existing natural grass to determine eligibility to participate in the program and explain the program requirements to CCSD.
3. **One-year performance period** – After SNWA deems the property eligible for participation, CCSD is given up to one year to complete the turf conversions. (CCSD plans to complete all turf conversions by May 2026.)
4. **Post-conversion site inspection** – Upon notice from the CCSD that a conversion is complete, SNWA will inspect the turf conversion to ensure it meets requirements for rebates.
5. **Rebate issuance** – Following a successful post-conversion site inspection, CCSD is notified of the rebate amount. CCSD acknowledges the amount by signing a form and returning it. A rebate check is then processed and mailed.

CCSD is using a Hellas Construction turf product called Matrix Turf for the conversions. This product is used across the country by professional teams, Division I universities, and K-12 school districts. Matrix Turf provides a safe, natural-looking surface with a 10-year useful life span. This product was used successfully for CCSD football field conversions in 2020-2021.

4. Technical Proposal: Evaluation Criteria

E.1.1. Evaluation Criterion A—Quantifiable Water Savings

Describe the amount of estimated water savings. For projects that conserve water, please state the estimated amount of water expected to be conserved (in acre-feet per year) as a direct result of this project. Please include a specific quantifiable water savings estimate; do not include a range of potential water savings.

During the three-year project period, SNWA expects to convert 822,000 square-feet of turf, which will result in 184.15 AF savings. However, it is unlikely that all the savings will be realized in a single year and accrued over the three-year project window. Based on the useful life of the project, SNWA estimates the expected life of improvements to be 10 years. Estimated water savings over the 10-year life improvement is calculated below:

$$\text{Project Implementation (3 years)} \quad \frac{73 \text{ gal/sf} \times 1,507,000 \text{ sf}}{325,851 \text{ gal/AF}} = 337.61 \text{ AF}$$

	Water Saved Per Year (AF)	Cumulative Savings (AF)
Year 1	112.53	112.53
Year 2	Additional 112.54	225.07
Year 3	Additional 112.54	337.61
Years 4-10	337.61 x 7 Years	2,363.27
TOTAL WATER SAVINGS OVER 10 YEAR IMPROVEMENT		3,038.48

Describe current losses: Please explain where the water that will be conserved is currently going and how it is being used.

According to the joint study conducted by Reclamation and SNWA, irrigating turfgrass consumes 73 gallons of water per square foot per year, all of which is consumptive use. In a hot desert climate like Las Vegas, live turf grass is not an efficient use of water, where a portion of the water used to irrigate is lost to evaporation and cannot be recycled. The proposed project reduces the consumptive use of Colorado River resources and provides a permanent water savings, increasing availability and reliability.

Describe the support/documentation of estimated water savings: Please provide sufficient detail supporting how the estimate was determined, including all supporting calculations. [SNWA's 2005 Xeriscape Conversion Study \(https://www.snwa.com/assets/pdf/reports-xeriscape.pdf\)](https://www.snwa.com/assets/pdf/reports-xeriscape.pdf) was supported by Reclamation through grant funding and peer review. The study found that conversions from turfgrass to xeriscapes resulted in a water usage drop from 73 to 17.2 gallons per square foot. This study involved hundreds of participants that were divided into three groups: Xeric Study, Turf Study, and control groups. Water use data were collected from utility meters serving each household as well as irrigation submeters. Submeters were installed to determine per-unit area water application for both xeric- and turf grass-dominated landscapes.

The per-unit area savings of xeric- versus turf dominated landscapes as revealed by the submeter data was found to be 55.8 gallons per square-foot per year. This results in a significant savings of 76.4 percent when considered in the context of all available residential water conservation measures. Subsequently, SNWA has conducted several analyses that have validated the results of the original study. Several independent studies of SNWA data have concluded the program yields similar or greater savings than SNWA’s estimates. As previously stated, the proposed project will eliminate the need for irrigation and save 73 gallons per square-foot.

Please address the following questions according to the type of infrastructure improvement you are proposing for funding.

Turf Removal: Applicants proposing turf removal projects should address the following:

a. How have average annual water savings estimates been determined? Please provide all relevant calculations, assumptions, and supporting data.

Based on the data gathered from the Xeriscape Conversion Study, SNWA can determine the water savings realized from turf conversion projects completed through the WET Program. 822,000 square-feet of turf converted under the requirements of the WET Program will determine the number of gallons of water saved.

Using a savings of 73 gallons per square-foot, this project will result in a 184.15 AF savings over the term of the project.

Total AF Saved	$\frac{73 \text{ gal/sf} \times 1,507,000 \text{ sf}}{325,851 \text{ gal/AF}}$	= 337.61 AF
Year One AF Saved	$\frac{73 \text{ gal/sf} \times 502,333 \text{ sf}}{325,851 \text{ gal/AF}}$	= 112.53 AF
Year Two AF Saved	$\frac{73 \text{ gal/sf} \times 502,334 \text{ sf}}{325,851 \text{ gal/AF}}$	= 112.54 AF
Year Three Total AF Saved	$\frac{73 \text{ gal/sf} \times 502,334 \text{ sf}}{325,851 \text{ gal/AF}}$	= 112.54 AF
Total Project Savings	$Y1 + Y2 + Y3$ $112.53 \text{ AF} + 112.54 \text{ AF} + 112.54 \text{ AF}$	= 337.61 AF

b. What is the total surface area of turf to be removed and what is the estimated average annual turf consumptive use rate per unit area?

The total surface area of natural grass to be removed and replaced with artificial turf is 1,507,000 square-feet. The estimated annual turf consumptive water use rate is 73 gallons per square foot.

c. Was historical water consumption data evaluated to estimate average annual turf consumptive use per unit area? If so, did the evaluation include a weather adjustment component?

In the Xeriscape Conversion Study, SNWA performed discrete submetering of xeric and turf areas, respectively. Due to having simultaneous measures of per unit area usage for each landscape type, weather variance was not considered. That is, pre- and post-measures were not used; however, averages for each of those data sets of the life of each study site were included.

d. Will site audits be performed before applicants are accepted into the program?

SNWA will complete pre- and post-site audits of the athletic fields. Site audits will be documented with photos.

e. How will actual water savings be verified upon completion of the project?

SNWA will monitor the schools' meter data and compare with historical data to verify savings.

E.1.2. Evaluation Criterion B—Renewable Energy

E1.2.1. Subcriterion No. B.1: Implementing Renewable Energy Projects Related to Water Management and Delivery

This subcriterion is not applicable to the proposed project.

E1.2.1. Subcriterion No. B.2: Increasing Energy Efficiency in Water Management

Describe any energy efficiencies that are expected to result from implementation of the water conservation or water efficiency project (e.g., reduced pumping). If quantifiable energy savings is expected to result from the project, please provide sufficient details and supporting calculations. If quantifying energy savings, please state the estimated amount in kilowatt hours per year.

The proposed project does increase energy efficiency in water management. Water treatment and delivery is energy intensive. It takes 6.67 kilowatt-hours (kWh) to move 1,000 gallons of water. The proposed project will save an estimated 112.53 AFY or 36,668,006 gallons of water annually, which translates into 244,584 kWh avoided each year.

$$\begin{array}{r} \text{kWh Avoided} \\ \text{Annually} \end{array} \quad \frac{36,668,006 \text{ gallons}}{(1000 \text{ gal}/6.67 \text{ kWh})} = 244,584 \text{ kWh}$$

How will the energy efficiency improvement combat/offset the impacts of climate change, including an expected reduction in greenhouse gas emissions.

Consider the amount of carbon that would have been emitted by producing the power to treat and deliver the saved water. Per the [U.S. Environmental Protection Agency's \(EPA\) Power Profiler](#), the AZNM (Western Electrical Coordinating Council (WECC) Southwest), which is the Emissions & Generation Resource Integrated Database (eGRID) subregion in which SNWA predominantly receives electricity, produces about 0.8466 pounds (lbs.) of carbon dioxide (CO2)

emissions per kWh. (<https://www.epa.gov/egrid/power-profiler#/AZNM>) The proposed project avoids 207,065 lbs., or 93.92 metric tons (MT), per year. Avoiding 93.92 metric tons of CO2 emissions is akin to removing 20 cars from the road. The car equivalent was calculated using the [EPA's Greenhouse Gas Equivalencies Calculator](https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator) (<https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>). These savings compound annually as the non-functional turf is removed permanently.

Lbs. CO2 Avoided Annually	$244,584 \text{ kWh} \times 0.8466 \text{ lbs./kWh}$	= 207,065 lbs.
MT Avoided Annually	$\frac{207,065 \text{ lbs.}}{2204.6 \text{ lbs./MT}}$	= 93.92 MT
Car Equivalent	$93.92 \text{ MT} \times .217 \text{ cars/MT}$	= 20 cars

If the project will result in reduced pumping, please describe the current pumping requirements and the types of pumps (e.g., size) currently being used. How would the proposed project impact the current pumping requirements and energy usage?

Generally, a reduction in water need has a direct correlation to the amount of time used to run a pump or the number of pumps needed to run, so reduction in water demand correlates to a reduction in pumping and energy usage. In the SNWA service area, 90 percent of water is received from Lake Mead and pumped throughout the Las Vegas Valley (Valley). Moreover, water traverses more than 1,500 feet in elevation through the valley. More than 50 pumping stations are in the Valley of varying sizes, and it is anticipated that a reduction in water use will reduce current pumping requirements and energy usage as there would be less water needed to pump.

Please indicate whether your energy savings estimate originates from the point of diversion, or whether the estimate is based upon an alternate site of origin.

The energy savings estimate originates from the point of diversion. As stated previously, most of the water treated and delivered in the Valley comes from Lake Mead. Reducing consumptive water use saves energy no matter where the water is delivered, but it is of note that water from Lake Mead is pumped to higher elevations throughout the Valley. Lake Mead's elevation is 1,167 feet above sea level. Where SNWA member agency Las Vegas Valley Water District's Valley View Campus is located near the center of the city, the elevation is 2,208 feet above sea level and some developments in Summerlin (west Las Vegas) are at elevations nearly 4,600 feet above sea level.

Does the calculation include any energy required to treat the water, if applicable?

The calculation does include energy required to treat the water.

Will the project result in reduced vehicle miles driven, in turn reducing greenhouse gas emissions? Please provide supporting details and calculations.

Turf-based landscapes require weekly maintenance, whereas artificial turf can be effectively maintained on a much longer interval. Artificial turf typically requires a sweeping service once or twice a year that covers maintenance, cleaning, and grooming. This service is done with a machine similar to a riding lawnmower, so this conversion greatly reduces fuel use for small equipment. Conversions like the proposed project also eliminate fertilizer and pesticide use.

Describe any renewable energy components that will result in minimal energy savings/production (e.g., installing small-scale solar as part of a SCADA system).

Not applicable to the proposed project.

E.1.3. Evaluation Criterion C—Sustainability Benefits

Enhancing drought resiliency. *In addition to the separate WaterSMART Environmental Water Resources Projects NOFO, this NOFO places a priority on projects that enhance drought resiliency, through this section and other sections above, consistent with the SECURE Water Act. Please provide information regarding how the project will enhance drought resilience by benefitting the water supply and ecosystem, including the following:*

Does the project seek to improve ecological resiliency to climate change?

The proposed project seeks to improve ecological resiliency to climate change through aggressive conservation of resources. The WET Program incentivizes property owners in Southern Nevada to install water efficient devices and technologies, providing permanent water savings from the limited resources in Lake Mead.

Will water remain in the system for longer periods of time? If so, provide details on current/future durations and any expected resulting benefits (e.g., maintaining water temperatures or water levels).

This conservation effort will allow SNWA to save Colorado River water that under the Lower Basin Drought Contingency Plan (DCP) that SNWA is able to store in Lake Mead. These water savings will allow for maintenance of water levels in Lake Mead. SNWA has completed [modeling studies](#), including “The potential effects of climate change and drawdown on a newly constructed drinking water intake: Study case in Las Vegas, NV, USA,” that demonstrate that low Lake Mead elevations result in warm water temperatures at SNWA intakes, even more so than warming air temperatures, therefore the ability to keep conserved water in Lake Mead longer will help maintain cooler water temperatures, and better water quality. This study was published in the European Water Resources Association’s *Water Utility Journal* and is attached as Appendix A. The project is not anticipated to result in water aging issues within municipal systems that cannot be managed or abated.

Will the project benefit species (e.g., federally threatened or endangered, a federally recognized candidate species, a state listed species, or a species of particular recreational, or economic importance)? Please describe the relationship of the species to the water

supply, and whether the species is adversely affected by a Reclamation project or is subject to a recovery plan or conservation plan under the Endangered Species Act (ESA).

The conversion of 1,507,000 square-feet of natural grass to artificial turf resulting in cumulative water savings of 3,038.48 AF saves Colorado River water that under the Drought Contingency Plan can be stored in Lake Mead thereby indirectly benefiting those species that rely on the reservoir and river.

Federally endangered fish species at Lake Mead include the bonytail chub (*Gila elegans*) and razorback sucker (*Xyrauchen texanus*). The Lower Colorado River Multi-Species Conservation Program (LCR MSCP) was created to provide Endangered Species Act (ESA) compliance for the use of Colorado River water resources while conserving native species and their habitats. This 50-year program provides regulatory coverage for water diversions and power production, including the water supply to nearly 40 million people across seven states. Reclamation is the implementing agency for the LCR MSCP, in partnership with 57 entities including state and federal agencies, water and power users, municipalities, Native American tribes, conservation organizations, and other interested parties. SNWA and the Nevada Department of Wildlife (NDOW) are active participants in the implementation of the program. A key component of the LCR MSCP is the production of over 1.2 million native fish to augment existing populations.

NDOW operates the Lake Mead Fish Hatchery that produces bonytail chub and razorback sucker and receives water from a historic intake in Lake Mead. The extreme, persistent drought in the West has significantly affected water levels in Lake Mead; aggressive conservation measures, like the proposed project, that reduce consumptive use of Lake Mead supplies help improve conservation efforts for endangered species and support continued ESA compliance.

Please describe any other ecosystem benefits as a direct result of the project.

While water used indoors in southern Nevada is treated and entirely recycled for use again, outdoor use water cannot be recycled because it is either consumed or allowed to runoff a property leading to urban runoff. This runoff is often salty and contains chemicals, such as fertilizer, which can often degrade water quality because runoff often contains fertilizer, which feeds algae and causes algal blooms that impair water quality and the aquatic ecosystem. These blooms reduce oxygen in the water and impair fish habitat.

Finally, permanent reduction in water use keeps water in the river for fish and wildlife. Ecosystem benefits include more water for fish and wildlife, reduced pollutant and nutrient inputs into the Colorado River system, and cleaner water in the Las Vegas Wash for birds, in addition to the decreased CO₂ emissions previously discussed.

Will the project directly result in more efficient management of the water supply? For example, will the project provide greater flexibility to water managers, resulting in a more efficient use of water supplies?

Increased water efficiency is critical to the long-term health and economic future of any desert community. Nevada considers water conservation as a resource because of its ability to reduce water demands and extend the availability of existing, temporary, and future water supplies. Permanent savings, such as those that would be incurred in the proposed project, allow water

managers greater flexibility with existing resources. The proposed project also addresses water supply reliability by increasing energy efficiency in water management by avoiding 244,584 kWh each year.

Addressing a specific water and/or energy sustainability concern(s). *Will the project address a specific sustainability concern? Please address the following:*

Explain and provide detail of the specific issue(s) in the area that is impacting water sustainability, such as shortages due to drought and/or climate change, increased demand, or reduced deliveries.

SNWA and its member agencies depend on the Colorado River for approximately 90 percent of community water resource needs. SNWA's primary resource is its share of Nevada's consumptive-use apportionment of 279,000 AFY (after the shortage declaration in 2021) of Colorado River water. The extended drought in the Colorado River Basin has resulted in significant declines at major system reservoirs, including Lake Mead. As Lake Mead continues to decline, future shortages are expected with even further, deeper declines to Nevada's allocation. The proposed project reduces the consumptive use of Colorado River resources and provides a permanent water savings, increasing availability and reliability.

Explain and provide detail of the specific issue(s) in the area that is impacting energy sustainability, such as reliance on fossil fuels, pollution, or interruptions in service.

Energy sustainability is not applicable to the proposed project.

Please describe how the project will directly address the concern(s) stated above. For example, if experiencing shortages due to drought or climate change, how will the project directly address and confront the shortages?

With the federally declared Colorado River shortage, Nevada's allocation was reduced to 279,000 AFY, which represents a 7 percent reduction in total water use. Conservation initiatives, like the proposed project, provide permanent savings of water that would have been otherwise consumptively used.

Please address where any conserved water as a result of the project will go and how it will be used, including whether the conserved water will be used to offset groundwater pumping, used to reduce diversions, used to address shortages that impact diversions or reduce deliveries, made available for transfer, left in the river system, or used to meet another intended use.

Key approaches to SNWA conservation strategies include extending the use of permanent resources and growing temporary resources or banked supplies to increase operational flexibility and reliability. In southern Nevada, SNWA serves as a regional water wholesaler, which eliminates the need for direct marketing between municipalities. Instead, unused Colorado River resources, such as the permanent water savings the proposed project will supply, are stored for future use in water banks located in southern Nevada, California, and Arizona. The Southern Nevada Water Bank (SNWB), established in 1987, has 345,000 AF of credits. SNWA's California water bank has accumulated approximately 330,000 AF of credits, while Arizona's bank has accumulated 614,000 AF since the inception of Nevada Interstate Banking in 2002.

SNWA's conservation efforts also contributed approximately 399,000 AF for storage in Lake Mead as Extraordinary Conservation Intentionally Created Surplus.

Provide a description of the mechanism that will be used, if necessary, to put the conserved water to the intended use. Indicate the quantity of conserved water that will be used for the intended purpose(s).

Conserved water will be used to defer withdrawals of banked resources and/or banked in as described above. With Colorado River shortages declared, SNWA intends to utilize banked resources to help offset supply availability. Conservation improves the ability to respond to shortages both by directly reducing demand and by freeing up resources banked for times of emergency. All conserved water is potable.

Other project benefits. *Please provide a detailed explanation of the project benefits and their significance. These benefits may include, but are not limited to, the following:*

(1) Combating the Climate Crisis: E.O. 14008: Tackling the Climate Crisis at Home and Abroad, focuses on increasing resilience to climate change and supporting climate-resilient development. For additional information on the impacts of climate change throughout the western United States, see: <https://www.usbr.gov/climate/secure/docs/2021secure/2021SECUREReport.pdf>. Please describe how the project will address climate change, including the following:

Please provide specific details and examples on how the project will address the impacts of climate change and help combat the climate crisis.

Southern Nevada's biggest threat from the climate crisis is reduced water availability due to severe, persistent drought in the Colorado River Basin and the aridification the Southwest through climate change. Conservation is a key tool in managing the shrinking water supply.

Additionally, climate change is caused by rising manmade greenhouse gas emissions in the atmosphere. Providing reliable quality water requires significant electricity. This project conserves a significant amount of water, thereby reducing the energy used to pump, treat, and convey water. Electricity consumption contributes approximately 99 percent to SNWA's carbon footprint. It is estimated that the proposed project will help save approximately 93.92 metric tons of carbon emissions, or the equivalent of taking 20 cars off the roadway annually each year of the project. This helps us achieve the organization's goal of reducing operational carbon emissions, directly combating climate change.

Does this proposed project strengthen water supply sustainability to increase resilience to climate change?

The proposed project strengthens water supply sustainability to increase resilience to climate change by creating permanent water savings. Sixty percent of SNWA's water supply is used for outdoor irrigation, which represents more than half of the community's water supply unable to be used again. Targeting outdoor irrigation for conservation measures is the best strategy for increasing permanent savings.

Will the proposed project establish and utilize a renewable energy source?

The proposed project will not establish a renewable energy source. SNWA is committed to conserving energy and utilizing renewable resources, when possible, to ensure energy is available to meet southern Nevada's security and economic needs. SNWA voluntarily committed to meet 50 percent of its energy needs through renewable resources by 2030, which parallels Nevada's recently revised Renewable Energy Portfolio Standards. The savings generated by the proposed project will allow the SNWA to further reduce its non-renewable market purchases, increasing the emphasis on renewable energy.

Will the project result in lower greenhouse gas emissions?

As discussed in Subcriterion No. B.2, less carbon will be emitted due to energy savings. Per the [U.S. Environmental Protection Agency's \(EPA\) Power Profiler](#), the AZNM (WECC Southwest), which is the eGRID subregion in which SNWA predominantly receives electricity, produces about 0.8466 pounds (lbs.) of carbon dioxide (CO₂) emissions per kWh. (<https://www.epa.gov/eGRID/power-profiler#/AZNM>) The proposed project avoids 244,584 lbs., or 93.92 MT per year.

(2) Disadvantaged or Underserved Communities: E.O. 14008 and E.O. 13985 support environmental and economic justice by investing in underserved and disadvantaged communities and addressing the climate-related impacts to these communities, including impacts to public health, safety, and economic opportunities. Please describe how the project supports these Executive Orders, including:

Does the proposed project directly serve and/or benefit a disadvantaged or historically underserved community? Benefits can include, but are not limited to, public health and safety through water quality improvements, new water supplies, new renewable energy sources, or economic growth opportunities.

The proposed project will directly benefit diverse CCSD schools throughout the Valley in several ways, including decreased water usage and decreased water bills, which will allow the school district to reallocate money to enhance student learning. Student-athletes in CCSD will benefit from the safer, more consistent turf; and all converted schools will have the same quality field, regardless of the socioeconomic conditions of a particular school. This project incentivizes leveling the playing field.

Additionally, the proposed project indirectly benefits disadvantaged or historically underserved communities due to the benefits to the entire service area, including permanent water savings, better water quality by maintaining water levels in Lake Mead, ecosystem benefits, and reduced CO₂ emissions due to reduced electrical use with reduced demand.

If the proposed project is providing benefits to a disadvantaged community, provide sufficient information to demonstrate that the community meets the disadvantaged community definition in Section 1015 of the Cooperative Watershed Act, which is defined as a community with an annual median household income that is less than 100 percent of the statewide annual median household income for the State, or the applicable state criteria for determining disadvantaged status.

As one of the largest school districts in the country, CCSD is very diverse. Per the [CCSD Pocket Guide](#), the student population speaks 78 different languages and represent 144 countries from around the world. (<https://newsroom.ccsd.net/wp-content/uploads/6071.7-CCSD-Pocket-Guide-2020-2021-FINAL.pdf>) In the 2020-2021 school year, 67 percent of students qualified for the National School Lunch Program.

The [Nevada median household income is \\$62,043](#) in 2020 dollars, per the U.S. Census Bureau (<https://www.census.gov/quickfacts/NV>). In looking at a breakdown of median household income by race in Las Vegas and surrounding cities or areas of unincorporated Clark County in the SNWA service, it can be surmised that households earning less than 100 percent of the statewide median household income will indirectly benefit from the proposed project.

Table 1. Median Household Income by Race: Cities near Las Vegas

	Las Vegas	Henderson	North Las Vegas	Spring Valley	Enterprise	Sunrise Manor
American Indian or Alaska Native	\$36,574	\$58,953	\$58,333	\$86,484	\$61,596	\$48,221
Asian	\$67,142	\$76,006	\$82,302	\$65,949	\$83,644	\$66,250
Black or African American	\$36,153	\$53,828	\$49,414	\$48,701	\$62,698	\$28,837
Hispanic or Latino	\$50,111	\$70,451	\$56,034	\$57,189	\$78,213	\$48,332
Native Hawaiian or Pacific Islander	\$53,000	\$57,083	\$63,750	\$72,054	\$108,160	\$43,704
White	\$65,875	\$78,371	\$65,606	\$61,417	\$83,429	\$45,170

Groups highlighted in yellow have a median household income below Nevada’s state median household income. City median household data from [Data Commons](#), utilizing U.S. Census data (https://datacommons.org/place/geoId/3240000?utm_medium=explore&mprop=income&popt=Person&cpv=age%2CYears15Onwards&hl=en).

If the proposed project is providing benefits to an underserved community, provide sufficient information to demonstrate that the community meets the underserved definition in E.O. 13985, which includes populations sharing a particular characteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life.

To see which underserved communities will directly benefit from the proposed project, Table 2 outlines the student population across CCSD. 47.29 percent of students identify as Hispanic or Latino (<https://newsroom.ccsd.net/wp-content/uploads/6071.7-CCSD-Pocket-Guide-2020-2021-FINAL.pdf>)

Table 2. CCSD Student Population

Black/African American	15.18%
Multi-Racial	7.21%
Asian	6.07%
Hawaiian/Pacific Islander	1.64%
American Indian/Alaska Native	<1%

To see which underserved communities will indirectly benefit from the proposed project, consider a snapshot of population demographics in the county. Table 3 below outlines these demographics. Additionally, 32.3 percent of residents in Clark County identify as Hispanic or Latino. ([U.S. Census Bureau Quick Facts, Clark County, Nevada](https://www.census.gov/quickfacts/fact/table/clarkcountynevada/RHI225219#RHI225219) <https://www.census.gov/quickfacts/fact/table/clarkcountynevada/RHI225219#RHI225219>)

Table 3. Underserved Populations by Race, Percentage of Clark County Population

Black or African American, alone	13.6%
Asian, alone	10.9%
Two or More Races	5.3%
American Indian and Alaska Native, alone	1.3%
Native Hawaiian or Other Pacific Islander, alone	1.0%

(3) Tribal Benefits: The Department of the Interior is committed to strengthening tribal sovereignty and the fulfillment of Federal Tribal trust responsibilities. The President’s memorandum “Tribal Consultation and Strengthening Nation-to-Nation Relationships” asserts the importance of honoring the Federal government’s commitments to Tribal Nations. Does the proposed project directly serve and/or benefit a Tribe? Will the project increase water supply sustainability for an Indian Tribe? Will the project provide renewable energy for an Indian Tribe? Does the proposed project directly support tribal resilience to climate change and drought impacts or provide other tribal benefits such as improved public health and safety through water quality improvements, new water supplies, or economic growth opportunities?

The proposed project will not directly serve or benefit a Tribe, nor will it directly increase water supply sustainability, directly provide renewable energy for a Tribe, or directly support resilience to climate change or drought impacts. However, the proposed project will indirectly benefit Indian tribes by reducing the consumptive use on the Colorado River, to which Indian tribes have rights, which include the Fort Mojave Indian Tribe, Colorado River Indian Tribes, Chemehuevi Indian Tribe, Quechan Indian Tribe, and Cocopah Indian Tribe in the Lower Basin. Additionally, the Southern Paiute Tribe will indirectly benefit from the proposed project as their nation is in an SNWA member agency service area.

(4) Other Benefits: Will the project address water and/or energy sustainability in other ways not described above? For example:

Will the project assist States and water users in complying with interstate compacts?

SNWA conservation strategies focus on protecting Lake Mead levels and lessening use of the Colorado River allocation. Projects like the proposed project demonstrate to other stakeholders

on the Colorado River that SNWA values the water and is committed to correct use and sustainability as the next round negotiations for the Colorado River operating guidelines begin.

Will the project benefit multiple sectors and/or users (e.g., agriculture, municipal and industrial, environmental, recreation, or others)?

The proposed project will benefit multiple sectors and users throughout the SNWA purveyor service areas, including municipalities in the service area and recreational users at Lake Mead. The proposed project will incentivize turf conversions to provide permanent water savings that translate into a more safe, reliable water supply for the community and help maximize return flow credits to the Colorado River. Lessening use of the Colorado River helps maintain Lake Mead levels, which benefits communities in the SNWA service area and the larger region.

Will the project benefit a larger initiative to address sustainability?

SNWA and its member agencies employ environmentally responsible and sustainable practices while complying with federal, state, and local environmental laws and regulations. Conserving water also reduces the energy used to pump, treat, and convey water to customers.

SNWA has identified 5,000 acres of useless grass in southern Nevada to target for turf conversion. It is estimated that removing those 5,000 acres of useless grass will help save approximately 23,000 MT of carbon emissions, or the equivalent of taking 5,000 cars off the roadway. This helps achieve the organization’s goal of reducing operational carbon emission and becoming more sustainable.

Will the project help to prevent a water-related crisis or conflict? Is there frequently tension or litigation over water in the basin?

SNWA conservation strategies focus on protecting Lake Mead levels and reducing use of the Colorado River allocation. Projects like the proposed project demonstrate to other stakeholders on the Colorado River that SNWA values the water and is committed to correct use and sustainability as the next round negotiations for the Colorado River operating guidelines begin.

E.1.4. Evaluation Criterion D—Complementing On-Farm Irrigation Improvements

The proposed project does not complement on-farm irrigation improvements.

E.1.5. Evaluation Criterion E—Planning and Implementation

E.1.5. Subcriterion E.1.—Project Planning

Does the applicant have a Water Conservation Plan and/or System Optimization Review (SOR) in place? Please self-certify or provide copies of these plans where appropriate to verify that such a plan is in place. Provide the following information regarding project planning:

To support its water planning and management responsibilities, SNWA develops and maintains a Water Resource Plan and Joint Conservation Plan (Selected chapters, Appendix B). The Water Resource Plan projects demand and identifies a portfolio of existing and planned water supply options available to meet demands over time. The Resource Plan prioritizes banking conserved

resources and growing temporary supplies to meet demands or offset potential supply reductions. It also outlines several drought response initiatives, including the Colorado River Interim Guidelines, the Colorado River Drought Contingency Plan, adaptive management, and long-term planning with a 50-Year Water Resource Plan.

First developed in 1996, the Water Resource Plan is reviewed annually and updated as needed. As demonstrated in previous revisions, adjustments to the plan are made to account for uncertainties such as drought, conservation achievements, resource availability, and changes in population and demand projections. The 2021 Plan addresses drought through adaptive management strategies employed to meet supply in our region. In addition to strong conservation strategies, the 2021 Plan prioritizes aggressive conservation efforts, collaboration with Colorado River stakeholders, continuing to secure temporary resources, planning to a range of future supply and demand possibilities, and working with climate scientists to better understand the impact of climate change on water supplies and facilities.

Conservation plays a critical role in water resource management. For this reason, the SNWA maintains a Joint Conservation Plan. The Joint Conservation Plan was made available to the public for review and comment, reviewed by SNWA's member agencies, and adopted by members that provide potable water services. The Joint Conservation Plan was accepted by the Nevada Division of Water Resources under Nevada Revised Statute (NRS) 540.141 and approved by Reclamation under the Reclamation Reform Act.

Both plans prioritize aggressive conservation measures to reduce water demands and maximize use of available resources. Chapter Three of the Water Resource Plan notes conservation tools that SNWA uses to promote conservation and reduce water use, including incentive programs like the proposed project. Since 2000, SNWA has invested more than \$275 million in incentive programs like the WET Program and Water Smart Landscapes. These programs have reduced demand by more than 13.7 billion gallons annually.

Chapter Five of the Joint Conservation Plan identifies supporting school athletic field conversions as critical in boosting participating in the WET Program. CCSD replaced all 29 of their high school football fields in 2020-2021, [providing water savings for the community and fiscal savings for district](https://newsroom.ccsd.net/going-from-grass-to-artificial-turf-on-football-fields-will-yield-huge-savings/). (<https://newsroom.ccsd.net/going-from-grass-to-artificial-turf-on-football-fields-will-yield-huge-savings/>) The success of this partnership led to the proposed incentive project.

E.1.6.2. Subcriterion F.2— Readiness to Proceed

Identify and provide a summary description of the major tasks necessary to complete the project.

Since the WET Program is an established program, SNWA would be able to proceed with the proposed project as soon as an agreement is entered. The program process is outlined below.

WET School and Park Turf Conversion Program Process

The following details the general process that CCSD schools will follow to qualify for and receive sport and recreation surface project conversion rebates:

1. Application - CCSD will work directly with the SNWA Conservation division. CCSD schools meet the criteria outlined above and are determined eligible for rebates.

2. Pre-conversion site inspection – All fields must meet eligibility requirements. At the pre-conversion site inspection, SNWA staff document and measures the existing natural grass to determine eligibility to participate in the program and explain the program requirements to CCSD.

3. One-year performance period – After SNWA deems the property eligible for participation, CCSD is given up to one year to complete the turf conversions. (CCSD plans to complete all turf conversions by May 2026.)

4. Post-conversion site inspection – Upon notice from the CCSD that a conversion is complete, SNWA will inspect the turf conversion to ensure it meets requirements for rebates.

5. Rebate issuance – Following a successful post-conversion site inspection, CCSD is notified of the rebate amount. CCSD acknowledges the amount by signing a form and returning it. A rebate check is then processed and mailed.

Describe any permits that will be required, along with the process for obtaining such permits.

As a non-construction program, it is not anticipated that the implementation of this rebate project will require the issuance of any permits. CCSD would be responsible for any required permitting.

Identify and describe any engineering or design work performed specifically in support of the proposed project.

Not applicable to the proposed rebate project.

Describe any new policies or administrative actions required to implement the project.

Since the WET Program is an existing program, this is not applicable to the proposed rebate project.

Please also include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates. Milestones may include, but are not limited to, the following: complete environmental and cultural compliance; mobilization; begin construction/installation; construction/installation (50% complete); and construction/installation (100% complete)

By year, expenditures for this portion of the FY 2023/2024, 2024/2025, and 2025/2026 WET Program are anticipated to track the estimated forecast outlined in Table 4 below.

Table 4. Milestones

Total Project	Percent	Athletic Fields Converted
Year One (2022-2023)	33.33	502,333 square-feet
Year Two (2023-2024)	33.33	502,334 square-feet
Year Three (2024-2025)	33.33	502,334 square-feet
Total	100	1,507,000 square-feet

E.1.6. Evaluation Criterion F—Collaboration

Please describe how the project promotes and encourages collaboration. Consider the following: Is there widespread support for the project? Please provide specific details regarding any support and/or partners involved in the project. What is the extent of their involvement in the process?

The WET Program has widespread support throughout the SNWA service area. SNWA was formed in 1991 by a cooperative agreement among the following water and wastewater agencies in southern Nevada:

- Big Bend Water District
- City of Boulder City
- City of Henderson
- City of Las Vegas
- City of North Las Vegas
- Clark County Water Reclamation District
- Las Vegas Valley Water District

CCSD operates 368 school programs, including 52 high schools throughout Clark County, the majority of which are in the SNWA service area. CCSD and SNWA have a long-standing partnership, working together to promote conservation initiatives and utilize technology to help protect the future of the community. As previously mentioned, in 2020-2021, CCSD successfully completed turf conversions on 29 high school football fields.

Additional support for turf conversion programs is evident through the bipartisan support of Assembly Bill 356 in the 2021 Nevada Legislative session. The bill was passed by a 30-12 vote in the Assembly, with the 12 no votes belonging to northern Nevada legislators who felt uncomfortable making decisions about groundcover and water use in areas outside their districts. The bill passed by unanimous vote in the Senate. The passage of this bill demonstrates that Nevada continues to be a leader in conservation in the western United States.

What is the significance of the collaboration/support?

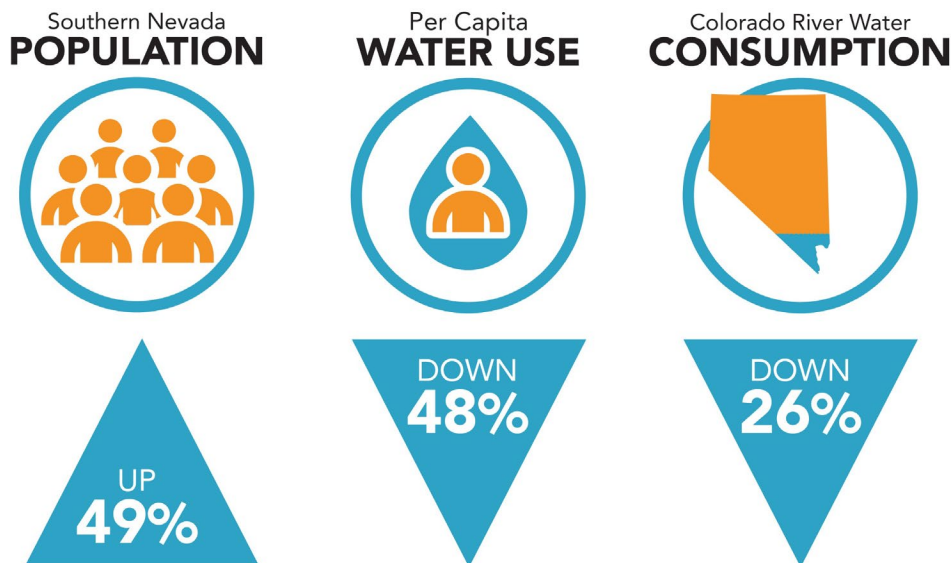
Together, these seven agencies provide water and wastewater service to more than 2.3 million residents in the cities of Boulder City, Henderson, Las Vegas, and North Las Vegas, and areas of unincorporated Clark County. As their wholesale water provider, SNWA is responsible for water treatment and delivery, as well as acquiring and managing the region’s short and long-term water resources. Since its inception, SNWA has worked to seek new water resources, manage existing and future water resources, construct and manage regional water facilities, and promote conservation.

The severe and sustained drought conditions on the Colorado River underscores the critical role of conservation in helping to meet current and future demands. SNWA and its member agencies depend on the Colorado River for approximately 90 percent of the community’s drinking water needs. As drought conditions continue and with the first federally declared Colorado River shortage, southern Nevada’s conservation efforts are even more important. Further declines in Lake Mead’s water level could result in additional shortages, which would further stress the ability of water supply facilities to meet water demands. Water conservation helps to mitigate these concerns.

Will this project increase the possibility/likelihood of future water conservation improvements by other water users?

SNWA has created and implemented one of the most extensive conservation programs in the country, including the WET Program and Water Smart Landscape Rebate Program. As other communities are beginning to implement serious, long-term water conservation programs, SNWA serves as an example and leader of successful, aggressive conservation initiatives. Figure 2 below highlights the reduction in Colorado River consumptive use, even in a time of extreme population growth.

Figure 2. Southern Nevada Water Use and Population 2002-2021



3/22

Please attach any relevant supporting documents (e.g., letters of support or memorandum of understanding).

A letter of support from CCSD is included at the end of this proposal.

E.1.7. Evaluation Criterion G—Additional Non-Federal Funding

This project proposal seeks \$2 million from Reclamation’s WaterSMART Grants: Water and Energy Efficiency Grants program. Funding will support incentives for SNWA’s WET Program. SNWA will provide a cost share contribution of \$2,989,072 for a total project cost of \$4,989,072. If the proposed project is funded by Reclamation, the non-federal share will be 60 percent.

E.1.8. Evaluation Criterion H—Nexus to Reclamation

Does the applicant have a water service, repayment, or O&M contract with Reclamation? If the applicant is not a Reclamation contractor, does the applicant receive Reclamation water through a Reclamation contractor or by any other contractual means?

Reclamation is a critical partner in SNWA’s water management and conservation efforts. SNWA diverts 90 percent of its water supply from the Reclamation-managed Colorado River system. SNWA receives delivery of Colorado River water from Reclamation under several contracts held by the SNWA or its member agencies, as listed below:

SNWA Contracts:

- Contract Number 2-07-30-W0266, Amendment Number 1, Amended and Restated Contract with the Southern Nevada Water Authority, for the Delivery of Colorado River Water
- Contract Number 7-07-30-W0004, Amendatory and Supplemental Contract between the United States and the State of Nevada for the Delivery of Water and Construction of Project Works

SNWA Member Agency Contracts:

- Contract Number 14-06-300-978, “Boulder Canyon Project Arizona-California-Nevada Contract for the Delivery of Water,” City of Boulder City
- Contract Number 0-07-30-W0246, Contract for Delivery of Water to City of Henderson
- Contract Number 14-06-300-2130, “Boulder Canyon Project Contract for Delivery of Water to Las Vegas Valley Water District”
- Contract Number 2-07-30-W0269, “Boulder Canyon Project Contract with the Big Bend Water District, Nevada, for the Delivery of Colorado River Water”

The water delivered by SNWA under these contracts is diverted at Reclamation-approved diversion points in the Colorado River at Lake Mead and below Hoover Dam. This includes delivery of water through the Robert B. Griffith Water Project (formerly the Southern Nevada Water Project) constructed by Reclamation, as authorized by an Act of the United States Congress.

In addition, SNWA has established long-standing relationships with Reclamation, and has coordinated on a number of initiatives including funding for the Brock Reservoir System Efficiency Project and the Yuma Desalting Plant Pilot Project; development and implementation of interstate water banking agreements with Arizona and California; Colorado River accounting and procedures for return-flow credits; a Xeriscape Conversion Study; and environmental restoration and stabilization initiatives in the Las Vegas Wash and Warm Springs Natural Area.

Will the proposed work benefit a Reclamation project area or activity?

The proposed project will contribute permanent water savings, allowing SNWA to contribute additional unused Colorado River water toward interstate banking efforts.

Is the applicant a Tribe?

The applicant is not a Tribe.

5. Performance Measures-Landscape Irrigation Measures: A.6.a. Turf Removal

Performance measures for this program will be calculated in *rebates issued*, *turf converted*, and *water saved*. Total program performance measures include 822,000 square-feet of turf converted and the recurring annual conservation of 61.38 AFY, or 184.15 AFY after full project implementation.

As described in the table below, Reclamation’s \$2 million contribution to this program will result in the conversion of approximately 123,300 square-feet of lawn and the recurring annual conservation of 27.63 AFY.

Table 5. Federal and Non-Federal Funding Performance Breakdown

Agency	Contribution	Turf Converted (square feet)	Water Conserved (AF)
SNWA	\$2,989,072	904,200	202.57
Reclamation	\$2,000,000	602,800	135.04
Total	\$4,989,072	1,507,000	337.61

Performance measures will be based on actual water saved. As described in Section 4 on pages 6 and 20 of this proposal, post-conversion site inspections take place once the applicant notifies SNWA that the conversion is complete. SNWA will inspect the landscape to determine the square footage eligible for rebate and ensure it meets minimum requirements to achieve the 73 gallons per square-foot savings.

At the end of the project, SNWA will prepare a closeout package for Reclamation, which will outline the actual project performance results achieved. Conservation progress is measured by annually comparing the community’s actual water use to the expected water use without conservation measures in effect. To measure conservation, SNWA uses an explanatory regression model to determine the variables that influenced southern Nevada’s water use during the preceding year. Although the model has identified a substantial number of relevant variables, the most significant are related to population, weather, and economic indicators. This data is obtained from other agencies on an annual basis.

To track and monitor the effectiveness of the WSL Program, the SNWA developed the Conservation Incentive Archive and Database (CiCADA). Developed in-house and launched in 2017, the CiCADA database tracks all participants, processes and results related to the WSL Program. Important features include individual participant tracking, Clark County Assessor property record information, rebate application information, site assessment information, converted square footage, and rebate amounts. Other functions include the ability to run various

reports on program participation, to track quality assurance performed on staff work, and to run queries on numerous tracking and enrollment options. All of these functions allow the database to serve as the primary method for tracking performance measures. Information regarding results of the program can be made available to Reclamation as needed, or quarterly through progress reporting processes. At project completion, Reclamation will be provided with a report summarizing the number of square feet converted, rebates issued, acre-feet per year saved, and other relevant program information.

6. Project Budget: Funding Plan

SNWA as an organization is funded by diverse sources, including a quarter-cent sales tax, connection fees, commodity fees, and reliability charges. These revenue sources provide the organization with a mix of funding sources, which help ensure the financial stability and capacity of the organization. Matching funds in the amount of \$2,989,072 million will be provided by SNWA.

7. Project Budget: Budget Proposal

Table 6. Total Project Cost

Costs to be reimbursed with the requested Federal funding	\$2,000,000
Cost to be paid by the applicant	\$2,989,072
Value of third-party contributions	\$0
TOTAL PROJECT COST	\$4,989,072

Table 7. Summary of Non-Federal and Federal Funding Sources

FUNDING SOURCES	AMOUNT
Non-Federal Entities	
1 SNWA	\$2,989,072
2 Third-Party Contributions	\$0
Non-Federal Subtotal	\$2,989,072
REQUESTED RECLAMATION FUNDING	\$2,000,000

Table 8. Budget Proposal

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	TOTAL COST
	\$/Unit	Quantity		
Salaries and Wages				
N/A	\$0	0		\$0
Fringe Benefits				
N/A	0.00%	\$0		\$0.00
Travel				
N/A	\$0			\$0.0
Equipment				
N/A	\$0			\$0.0
Supplies and Materials				
N/A	\$0			\$0.0
Contractual/Construction				
N/A	\$0.00			\$0.00
Third-Party Contributions				
N/A				\$0.00
Other				
SNWA rebates	\$453,552.00	11	Schools	\$4,989,072.00
Environmental Compliance				
Not anticipated	\$0.00			\$0.00
TOTAL DIRECT COSTS				\$4,989,072
Indirect Costs				
Type of Rate	percentage	\$base		\$0.00
TOTAL ESTIMATED PROJECT COSTS				\$4,989,072

8. Project Budget: Budget Narrative

All costs included in this proposal are directly related to rebate costs. Program costs for salaries/wages, fringe benefits, travel, equipment, and supplies and materials are not being requested for consideration as either match or reimbursable expenditures. All costs are direct and necessary for program implementation. The non-federal contribution is 60 percent; the federal contribution is 40 percent.

Salaries and Wages: Reclamation funding will not be expended for program administration. In addition to SNWA’s matching contribution, SNWA will assume all overhead costs necessary to operate the program, including staffing, administration, marketing, and other duties associated with assuring a successful program.

Fringe Benefits: Not applicable to this project.

Travel: Not applicable to this project.

Equipment: Not applicable to this project.

Supplies and Materials: Not applicable to this project.

Contractual: Not applicable to this project.

Third-Party In-Kind Contributions: Not applicable to this project.

Environmental and Regulatory Compliance Costs: Please review responses in the Environmental and Cultural Resources section. SNWA does not anticipate additional costs associated with environmental compliance. If SNWA receives an award, possible costs will be discussed during the development of the financial agreement.

Other (Rebates): Expenditures totaling \$4,989,072 in WET Program rebates will result from the athletic field conversions.

Total Direct Costs: Reclamation is requested to contribute \$2 million toward direct costs. SNWA will provide a cash match of \$2,989,072.

Indirect Costs: Not applicable. All direct costs align with eligible categories. SNWA does not have a federally negotiated indirect cost rate agreement. No funds are requested for indirect costs.

9. Environmental and Cultural Resources Compliance

Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.

The proposed project would convert grass sports fields (baseball and softball) to artificial turf at Clark County School District (CCSD) high schools in the Valley. The proposed project activities would be completed by CCSD under the Southern Nevada Water Authority's Water Efficient Technologies program that pays rebates to participants who convert their grass sports fields to artificial turf sports fields. CCSD would complete the grass conversion at baseball and softball fields. Minimal earth-disturbing work would be required to remove the existing grass and install the artificial turf. Impacts to soil and air quality would be minimal and temporary since only the top layer of grass would be removed (leaving most of the existing soil bed in place) and immediately be replaced with artificial turf. Both small equipment, including sod cutters and compact loaders, and hand tools would be used for each site, as appropriate. CCSD would follow guidelines required under applicable Clark County dust control permit(s). Herbicide may be used to kill grass roots; however, application would be in accordance with manufacturer safety instructions. Therefore, there would be no impacts to water quality. Grass removal at these sports fields and a reduction in total water use (estimated permanent annual savings of 337.61 acre-feet per year) would result in beneficial impacts to water quantity by reducing annual

consumptive water use within the Las Vegas valley, a region experiencing persistent drought. The proposed project areas are previously disturbed, comprised of school field grass and compacted soil, used year-round by staff and students, and therefore do not provide animal habitat. The grass field conversions would increase ambient noise levels, but the impacts would be temporary, and all activities would occur during daylight hours. No roads would be blocked by the grass conversion activities. Following the conversions, the baseball fields and softball fields would maintain recreational purposes and therefore cause no visual impacts to the surrounding environment.

Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?

Although the proposed project is a covered action under the Clark County Multiple Species Habitat Conservation Plan and associated Biological Opinion (2000), there are no known listed or proposed to be listed federally threatened or endangered species in the proposed project areas. The project areas are previously disturbed, comprised of school field grass and compacted soil, used year-round by staff and students, and do not provide or are not designated as critical habitat.

Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as “Waters of the United States?” If so, please describe and estimate any impacts the proposed project may have.

There are no wetlands or other surface waters inside the proposed project areas that potentially fall under the CWA jurisdiction as “Waters of the United States.”

When was the water delivery system constructed?

The Las Vegas Valley Water District (LVVWD) commenced operations in 1954 and has served as the Southern Nevada region’s largest municipal water provider since that time. As Las Vegas grew and the construction of new schools increased, the LVVWD’s water delivery system expanded to meet the region’s needs.

Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.

The conversion of grass sports fields to artificial turf sports fields would result in removal of the landscape irrigation in these areas, which was installed when the schools were built. This would not affect the landscape irrigation of the remaining areas at these schools.

Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.

There are no buildings, structures, or features in the proposed project areas listed or eligible for listing on the National Register of Historic Places. The grass conversion project areas are entirely within previously disturbed areas, and the grass baseball and softball fields do not meet the

National Register of Historic Places criteria, nor are they unique or associated with significant persons or events.

Are there any known archeological sites in the proposed project area?

There are no known archaeological sites in the proposed project areas. The proposed project areas are entirely within previously disturbed areas.

Will the proposed project have a disproportionately high and adverse effect on low income and minority populations?

The proposed project would not have a disproportionately high or adverse effect on low income and minority populations. The proposed grass conversions would provide consumptive water savings that benefit the entire service area.

Will the proposed project limit access to and ceremonial use of Indian sacred sites or result in other impacts to tribal lands?

There are no Indian sacred sites or tribal lands within the conversion project areas. The proposed project would not limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands.

Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?

The proposed project area consists of grass baseball and softball fields located at CCSD high schools throughout the Valley. There are no noxious weeds or non-native invasive species known to occur within the proposed project areas. Equipment and vehicles would be free of weeds and non-native invasive species prior to arriving at the project sites. Therefore, the proposed project would not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species.

10. Required Permits or Approvals

As the WET Program is a non-construction program, it is not anticipated that the implementation of this incentive project will require the issuance of any permits. Acquisition of permits would be the responsibility of the property owner.

11. Overlap or Duplication of Effort Statement

SNWA has a grant application pending in the WaterSMART Small-Scale Water Efficiency Projects (funding announcement R22AS000195). That request is also for WET Program funding; however, that request is specific to cooling system upgrades for member agency, City of Henderson.

12. Conflict of Interest Disclosure

To the best of our knowledge, no actual or potential conflict of interest exists at the time of submission.

13. Certification Regarding Lobbying

As this application requests more than \$100,000 in Federal funding, the applicant certifies the statements in 43 CFR Part 18, Appendix A. Standard Form-LLL, “Disclosure Form to Report Lobbying” was submitted with this application.

14. Uniform Audit Reporting Statement

SNWA was required to complete a Single Audit for the most recently closed fiscal year (ending June 30, 2021). SNWA’s EIN is 88-0278492 and the report is available through the Federal Audit Clearinghouse website.

15. Letter of Support

Attached at the end of this proposal.

16. Official Resolution

An official resolution authorizing the submission of this proposal and confirming the subject matching requirements will go before the SNWA Board of Directors at the September 15 meeting. A copy will be forwarded to Reclamation at that time, as communicated to the Program Coordinator.

17. Unique Entity Identifier

SNWA maintains an active registration in SAM.gov. Its Cage Code is 3NRT9 and SAM Unique Identifier is SM1CPB4X7E88.

18. Supporting Documents: Appendices A and B

All appendices are included as attachments via grants.gov.

July 27, 2022

Bureau of Reclamation
Attn: Josh German, WaterSMART Program Coordinator
P.O. Box 25007, MS 84-27133
Denver, CO 80225

RE: Letter of Support for the Southern Nevada Water Authority's Grant Application

Dear Mr. German:

On behalf of the Clark County School District (CCSD), please accept this letter of support for the Southern Nevada Water Authority's (SNWA) Water and Energy Efficiency Grants (WEEG) application for the Water Efficiency Technologies (WET) Program Athletic Field Turf Conversion Incentive Project. This project will contribute to conversions from natural to synthetic turf on twenty-two athletic fields (eleven baseball and eleven softball fields) at eleven high schools. Not only will these conversions provide permanent water savings, but they will also improve the surfaces used by student athletes, physical education students, and community partners.

The benefits of this conversion extend beyond water conservation. CCSD will spend less time and money maintaining the fields, reducing the need for labor, fuel, seeds, and tools. The resulting reduction to the operations budget will provide the opportunity to redirect funding to the classroom.

CCSD and SNWA have had a long, productive partnership to the benefit of the entire community. Today that partnership continues in earnest with projects including turf reduction, irrigation control, and cooling tower refurbishments. It is CCSD's hope that through this opportunity our partnership will expand its impact throughout the region.

Thank you for your consideration of SNWA for this opportunity.

Sincerely,

A handwritten signature in black ink, appearing to read "Mark Campbell", written in a cursive style.

Mark Campbell
Director of Sustainability, Energy, and Environmental Services
Clark County School District