($1,747,500*)*

WaterSMART Drought Response Program
Drought Resiliency Projects for Fiscal Year 2023

R23AS00005

Funding Group II

June 15, 2022

Applicant:
Southern Nevada Water Authority

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1. Technical Proposal: Executive Summary

Date: June 15, 2022
Applicant: Southern Nevada Water Authority (Category A applicant)
Location: 1001 South Valley View Boulevard, Las Vegas, Nevada 89153 (Clark County)

Project Summary: Since the severe, prolonged drought conditions in the Colorado River Basin continue to threaten water supplies and delivery systems, investing in infrastructure improvements that provide additional water supplies, support water management flexibility, and reduce consumptive water use is key to building drought resiliency. In the proposed project, the Southern Nevada Water Authority (SNWA) will provide funding incentives to property owners who complete septic system conversions to abandon their onsite septic systems and connect to the public sewer system. Connecting to the public sewer system reduces consumptive use as converted systems discharge water to the municipal wastewater system where the water is collected, treated, and released to the Las Vegas Wash, which ultimately flows to Lake Mead where it can be used again. The proposed project will allow SNWA to incentivize 233 conversions, reducing consumptive use in an estimated 93.2 acre-feet (AF) (permanent annual recoveries). SNWA's Water Resource Plan, which addresses planning for drought, highlights the Septic Conversion Program as a water conservation measure to optimize return-flow credit and reduce consumptive use.

Length of Time and Estimated Completion Date: The proposed project encompasses activity from April 2023 through March 2026. All incentives will be completed by March 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 septic conversions on properties located in the SNWA service area in Clark County, NV. A map showing septic parcels throughout the SNWA service area is attached in Appendix A.

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, one of SNWA's conservation efforts emphasize reducing consumptive water use by incentivizing septic system conversions, since water used on properties unconnected to municipal sewer lines cannot be recovered and counted as return-flow credits.

To eliminate an area of consumptive use and increase water management flexibility, SNWA created the Septic Conversion Program, which incentivizes property owners who complete septic conversions by helping offset the costs of conversions. SNWA will rebate the property owner 85 percent of the costs up to 180 feet to connect to the sewer line, plus $1,000 for on-site costs.

When a property owner is interested in converting their septic system to connect to the public sewer system, they initially reach out to SNWA for information. The program has been discussed in several board of directors' meetings and mentioned in numerous local news articles, due to media coverage surrounding the drought and climate change. Due to variables on each property, the most notable of which is the distance from the property to the existing sewer line, the conversions are discussed with property owners on a case-by-case basis. For example, septic conversion costs for a property within 50 feet of a municipal sewer line may be close to $20,000, while properties distanced hundreds of feet from a sewer line may cost several hundred thousand dollars. There are also considerations regarding how water service is provided to the property. Some properties are already connected SNWA member agencies' water supplies, while other parcels receive water via well.

Septic System Conversion Program Process:
The following details the general process that applicants to the program follow to qualify for and receive septic system conversion rebates:

1. **Application** – Property owners apply to the Septic Conversion Program by contacting SNWA via web contact form.

2. **Engineering** – Once SNWA approves the application, the property owner hires an engineer to develop the sewer lateral connection plan. The plan is submitted to the wastewater provider for review and approval.

3. **Connection Fee** – After the engineering plan is approved, the property owner pays 15 percent of the wastewater provider connection fee to SWNA. SNWA will pass along that 15 percent to wastewater provider along with the 85 percent of the connection fee as a payment from the Septic Conversion program. Connection fees vary from provider to provider (approximately $1,600 to $3,000 per property).

4. **Construction Bids** – Next, the property owner secures a minimum of three bids to complete lateral connection work and septic tank abandonment. SNWA reviews the bids and authorizes the property owner to proceed.

5. **Inspection** – Upon completion of work and tank abandonment, the wastewater provider inspects lateral connection work, and the Southern Nevada Health District inspects the tank abandonment.

6. **Rebate Issuance** – After successful inspections, SNWA issues rebate checks for up to 85 percent of the construction work (up to 180 feet of lateral) and $1,000 for on-site work.

   On average, this entire process takes approximately six months to complete from initial customer request.

4. Technical Proposal: Performance Measures

By completing septic system conversions, the proposed project provides three performance measures which target quality and quantity.

1. **Timely and effective septic system conversions to eliminate a consumptive use.** Through the proposed project, 233 properties will undergo septic system conversions to eliminate some consumptive use in the SNWA service area.
2. **Maximize return-flow credits.** Converting these properties to municipal sewer will allow for the water used indoors to be captured, treated, and returned to the Colorado River system via the Las Vegas Wash, which flows into Lake Mead. Water returned to the lake earns SNWA return-flow credits, which stretch the limited water supply. It is estimated that the project will result in 93.2 AFY returned to the lake.
3. **Increase water management flexibility.** Since Southern Nevada gets about 90 percent of its water supply from the Colorado River, reducing consumptive use and maximizing return-flow credits is a key to improving water management in the region. By capturing water previously lost due to septic system use, the proposed project will help increase water management flexibility, which is important in adapting to climate change and increased aridification.

5. Technical Proposal: Evaluation Criteria

E.1.1. Evaluation Criterion A—Project Benefits

How will the project build long-term resilience to drought? How many years will the project continue to provide benefits?

The project will build long-term drought resilience in the Lower Colorado River Basin by incentivizing septic system conversions through rebates to property owners. By investing in infrastructure improvements that provide additional water supplies, support water management flexibility, and reduce consumptive water use, the proposed project will build long-term resilience to drought.

The life cycle of a sewer line can be estimated anywhere from 50 to 100 years, depending on the type of piping material. PVC pipes that are commonly used for new sewer lines reach the longer end of the estimated life cycle.

While there are over 14,000 parcels in the Las Vegas Valley with septic systems with total metered and estimated deliveries of 14,424 AF, the proposed project will focus on parcels located less than 50 feet from the municipal sewer system. Over 3,500 parcels are located less than 50 feet from the municipal sewer system and with the proposed project total budget, SNWA estimates completing 233 conversions.

Will the project make additional water supplies available? If so, what is the estimated quantity of additional supply the project will provide and how was this estimate calculated? Provide this quantity in acre-feet per year as the average annual benefit over ten years.

Completing 233 septic conversions through the proposed project will make additional water supplies available as a portion of the water that would typically be lost to consumptive use will

be captured, treated, and returned to Lake Mead for return flow credits. The estimated additional water supplies available as return flow credits is 93.2 AFY, or 932 AF over 10 years.

What percentage of the total water supply does the additional water supply represent? How was this estimate calculated? Provide a brief qualitative description of the degree/significance of the benefits associated with the additional water supplies.
Ninety percent of Southern Nevada's water supply comes from the Colorado River, which consists of Nevada's existing 279,000 AFY allocation under the current federal shortage declaration. This allocation will be reduced as water elevations in Lake Mead continue to decline. While the 93.2 AFY in additional supplies represents less than one percent of the annual Colorado River allocation this year, every acre-foot of this precious resource kept in the river system in critical due to the severe, sustained drought conditions in the basin and climate change's aridification of the southwest.

Will the project improve the management of water supplies? How will the project increase efficiency or operational flexibility?
Homes with septic systems consumptively use nearly 6.5 times more water (the equivalent of 268,000 gallons more per year) than a new home connected to sanitary sewer, part of which is attributable to 100 percent of their indoor water use being consumptive. By making additional supplies available, as discussed in the previous set of questions, the proposed project will improve water management by maximizing return flow credits. Recovering indoor use water increases operational flexibility as it stretches the resource.

What is the estimated quantity of water that will be better managed as a result of this project? How was this estimate calculated? Provide this quantity in acre-feet per year as the average annual benefit over ten years.
As previously stated, completing 233 septic conversions through the proposed project will make additional water supplies available to improve water management. The estimated additional water supplies available as return flow credits is 93.2 AFY, or 932 AF over 10 years.

It is also of note the number of homes to which 93.2 AF provides water for in a year. For newer homes, one AF of water supports the annual use for three homes, so the better managed water would supply nearly 280 homes over the course of a year.

3 homes x 93.2 AF = 279.6 homes

What percentage of the total water supply does the water better managed represent? How was this estimate calculated?
As previously stated, 90 percent of Southern Nevada's water supply comes from the Colorado River, which consists of Nevada's existing 279,000 AFY allocation under the current federal shortage declaration. While the 93.2 AFY in additional supplies represents less than one percent of the annual Colorado River allocation, every acre-foot of this precious resource kept in the river system in critical due to the severe, sustained drought conditions in the basin and climate change's aridification of the southwest.

Provide a brief qualitative description of the degree/significance of anticipated water management benefits. Will the project make new information available to water managers? If so, what is that information and how will it improve water management?
When indoor water is returned to a municipal sewer system, it gets treated, recycled, and returned to Lake Mead to be used again, resulting in virtually no impact on the community's water supply. When water is not returned, it places considerable strain on the community's water resources. Water uses such as landscape irrigation, evaporative cooling, and septic systems account for approximately 60 percent of the community's overall demand but all of it is consumptive use. In a home that is connected to a municipal sewer, all indoor uses like toilets, showers, and laundry, return to Lake Mead. In a home with a septic system, all indoor use is consumptive. The project is not expected to make new information available to water managers.

If the proposed project includes any of the following components, applicants need to provide the additional information requested below for the specific project type.
The proposed project does not include any of the listed components.

E.1.2. Evaluation Criterion B—Drought Planning and Preparedness

Provide a link to the applicable drought plan, and only attach relevant sections of the plan that are referenced in the application, as an appendix to your application.
SNWA's 2021 Water Resource Plan, Chapter Three, is included as Appendix B of this application. The Water Resource Plan (Plan) provides a comprehensive overview of water resources and demands in Southern Nevada. The full Plan is available at https://www.snwa.com/assets/pdf/water-resource-plan-printable-2021.pdf.

Explain how the applicable plan addresses drought. Does the drought plan contain drought focused elements including a system for drought monitoring, sector vulnerability assessments related to drought, prioritized mitigation actions, and response actions that correlate to different stages of drought? Explain whether the drought plan was developed with input from multiple stakeholders. Was the drought plan developed through a collaborative process? Does the drought plan include consideration of climate change impacts to water resources or drought?
SNWA is responsible for developing and maintaining water resources on behalf of the region. The Plan is available via the link in the previous question's answer. The Plan documents SNWA's efforts to plan for and respond to drought and include several hydrology and population scenarios and outline how SNWA will meet future demands over a 50-year period. The Plan prioritizes banking conserved resources and growing temporary supplies to meet demands or offset potential supply reductions as new permanent water resources are developed. 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. The Plan was developed with stakeholder input. SNWA's establishing agreement, the Cooperative Agreement, requires that the SNWA's Board of Directors review the Plan annually to ensure it remains up to date and considers current conditions and planning scenarios.

SNWA considers stakeholder input and periodically establishes citizen advisory committee processes to gather input on several initiatives, including water resources. SNWA's 21-member

Integrated Resources Planning Advisory Committee, comprised of a diverse group of citizens, was formed in 2012 to assist with planning efforts, and the most recent 2021 planning process involved these public stakeholders. The 2021 Plan addresses drought through adaptive management strategies employed to supply water to meet demands in our region, which were largely informed by the most recent recommendations made by the committee.

In addition to strong conservation strategies, the 2021 Plan prioritizes collaboration with interstate and Federal partners, banking resources and growing temporary supplies, preserving access to Colorado River supplies, and protecting the availability of future resources. The Plan considers the impacts of climate change to water resources.

Describe how your proposed drought resiliency project is supported by an existing drought plan. Does the drought plan identify the proposed project as a potential mitigation or response action? Does the proposed project implement a goal or need identified in the drought plan? Describe how the proposed project is prioritized in the referenced drought plan.

The Septic Conversion Program is noted in Chapter Three of the Water Resource Plan. This chapter is dedicated to outlining the organization's portfolio of water resources and management. As with prior plans, the 2021 edition features conservation as a critical mitigation strategy in water management. The Septic Conversion Program is highlighted in one of the conservation key focus areas, Optimizing Return Flow Credits, as many of the properties with septic systems in the Las Vegas Valley rely on Colorado River water delivered by SNWA member agencies. Of the 14,591 septic parcels in the Las Vegas Valley, 8,380 are served by the Las Vegas Valley Water District (LVVWD), the City of Henderson (COH), and the City of North Las Vegas (NLV). Until those septic systems are converted to municipal sewer, the water is discharged to the septic system and is lost; it cannot be recovered for return-flow credits. Once conversions are complete, water discharged into the municipal sewer system is collected, treated, and released to the Las Vegas Wash for return-flow credits.

E.1.3. Evaluation Criterion C—Sustainability and Supplemental Benefits

1. Climate Change: Does the proposed project seek to reduce or mitigate climate pollutions such as air or water pollution?

Septic systems can negatively impact water sources in their vicinity. (https://www.epa.gov/septic/how-your-septic-system-can-impact-nearby-water-sources) The proliferation of septic systems in the Las Vegas Valley negatively affects water quality in the aquifer. Additionally, poorly functioning septic systems are a potential source of bacteria in water samples of run-off in the Las Vegas Wash. (https://www.lvstormwater.com/best-management-practices/private-sewage-disposal-systems-septic-tanks) Ongoing water quality analysis performed by the LVVWD has found higher nitrate loads in the aquifer in areas where there are higher concentrations of septic systems. Abandoning existing septic tanks and converting to municipal wastewater systems will have the additional benefit of reducing nitrates within the groundwater aquifer.

Disadvantaged or Underserved Communities
Although the proposed project does not directly benefit a specific disadvantaged or historically underserved community, it does indirectly benefit these communities due to the benefits to the entire service area, including maximizing return flow credits, better water quality by maintaining water levels in Lake Mead, and ecosystem benefits.

The Nevada median household income is $60,365 in 2019 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	Paradise	Spring Valley	Sunrise Manor
American Indian or Alaska Native	$40,221	$62,500	$54,569	$43,786	No data	$43,177
Asian	$60,836	$76,752	$72,679	$49,527	$66,747	$61,319
Black or African American	$36,464	$51,813	$49,574	$32,528	$45,752	$29,365
Hispanic or Latino	$47,898	$65,313	$54,238	$44,268	$55,279	$47,114
Native Hawaiian or Pacific Islander	$65,859	$82,730	$62,024	$46,433	$79,625	$41,339
White	$62,987	$76,273	$65,430	$54,273	$59,099	$45,643

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**).**

To see which underserved communities will indirectly benefit from the proposed project, consider a snapshot of population demographics in the county. Table 2 below outlines these demographics. Additionally, 31.6 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**)**

Table 2. Underserved Populations by Race, Percentage of Clark County Population

Black or African American, alone	13.1%
American Indian and Alaska Native, alone	1.2%
Asian, alone	10.4%
Native Hawaiian or Other Pacific Islander, alone	0.9%
Two or More Races	4.9%

2. Tribal Benefits: Does the proposed project 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? Does the proposed project support Reclamation's tribal trust responsibilities or a Reclamation activity with a Tribe?

The proposed project will not directly serve or benefit a Tribe, nor will is support tribal resilience to climate change and 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.

3. Environmental Benefits: Does the project seek to improve ecological climate change resiliency of a wetland, river, or stream to benefit to wildlife, fisheries, or habitats? Do these benefits support an endangered or threatened species?

Reducing consumptive use saves Colorado River water that under the Lower Basin Drought Contingency Plan, SNWA can store 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.

4. Other Benefits: 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?
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 septic conversions to lessen consumptive water use that translates into a more safe, reliable water supply for the community and helps maximize return flow credits to the Colorado River. Lessening consumptive 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 of water supplies?
Yes, this project is supported by SNWA's Water Resource Plan, which outlines the agency's efforts and commitment to maintaining and promoting sustainable water resources. The Plan includes an entire chapter devoted to water conservation and demand management, as conserved resources represent an important component to Southern Nevada's water resource portfolio.

E.1.4. Evaluation Criterion D—Severity of Actual or Potential Drought Impacts to be addressed by the Project

Describe the severity of the impacts that will be addressed by the project. What are the ongoing or potential drought impacts to specific sectors in the project area if no action is taken and how severe are those impacts?
SNWA's service area is within a region affected by drought for the past two decades. The service area is also dependent on tourism, as Las Vegas welcomes over 40 million visitors annually (pre-pandemic). Tourism supports hundreds of thousands of jobs in the area and tens of billions of dollars in spending, according to the Applied Analysis June 2019 Economic Impact of Southern Nevada's Tourism Industry and Convention Sector brief. The brief is included in Appendix C.

Are there public health concerns or social concerns associated with current or potential drought conditions?
The extended drought conditions in the region make long-term water supply planning critical. Maximizing return-flow credits increases operational flexibility. Since 90 percent of the water supply for Southern Nevada comes from the Colorado River, eliminating a consumptive use and increasing return-flow credits to the lake helps maintain lake levels, which contributes to better water quality.

Are there ongoing or potential environmental impacts?
The ongoing drought and the impacts of climate change have the potential to severely impact endangered fish species of the Colorado River primarily through habitat degradation. As an impoundment managed system, many of the impacts of drought on the fish of Lake Mead have been limited. As the drought persists and climate change impacts worsen, this may no longer be the case. The temperature stability provided by these deep storage reservoirs has lent habitat stability to the endangered (and sport) fish communities as well as to the food web that support them. Declining lake levels due to the drought have reduced this temperature stability, and further continuation of the drought threatens extreme variation in temperature and habitat structure.

Are there local or economic losses associated with current drought conditions that are ongoing, occurred in the past, or could occur in the future?
As the Las Vegas Valley faces crippling drought for the foreseeable future, planned future exurban Las Vegas communities and infrastructure may not be approved for construction. If new construction is significantly impacted by water shortage, real estate values could be affected. Further, the Las Vegas Valley is unique in that it hosts over 40 million annual tourists per year. Lack of availability of water supply to casinos and tourist attractions could lead to decreases in visitor numbers, thus negatively impacting Clark County's economy. SNWA must diligently plan to meet the community's water resource needs to ensure the long-term economic health of the region. This position is documented in "*Potential Impacts of Water Resource Uncertainty in Southern Nevada*" by Applied Analysis (Appendix C). This study concluded that, "It can be stated with a reasonable degree of certainty that water resource instability, or the expectation that sufficient water resources will not be available to sustain the underlying economy, will have a material negative impact on Southern Nevada's economy and fiscal structure as well as that of the state of Nevada as a whole."

Are there other drought-related impacts not identified above (e.g., tensions over water that could result in a water-related crisis or conflict)?
It is critical for SNWA and its member agencies to collaborate in water resource management and planning to ensure comity among members and minimize the risk of drought impacts that might result in a water-related crisis. Should Colorado River water supplies continue to be reduced, Southern Nevada may need to put more reliance on local groundwater supplies and access stored groundwater reserves.

Describe recent, existing, or potential drought conditions in the project area. Is the project in an area that is currently suffering from drought or which has recently suffered from drought? Please describe existing or recent drought conditions, including when and the period of time that the area has experienced drought conditions (please provide supporting documentation, [e.g., Drought Monitor, droughtmonitor.unl.edu]).
The Lower Colorado River Basin has been experiencing an extended drought since the year 2000. Lake Mead is currently 30 percent full. Reduced snowpack in the Upper Basin coupled with earlier melting of the snowpack is thought to be the main driver of this ongoing drought. Further, drought conditions are expected to persist for the foreseeable future. In August 2021, a Federal shortage declaration occurred for the Lower Colorado River Basin for calendar year 2022.

Per the United States Drought Monitor (droughtmonitor.unl.edu), Clark County, Nevada (where the project is located) has been experiencing drought conditions at least some parts of the year going back to the year 2000. Because the average rainfall for the area is already a low of approximately four inches a year, even minor drought conditions can significantly impact vegetation and wildlife in the area.

Describe any projected increases to the severity or duration of drought in the project area resulting from changes to water supply availability. Provide support for your response (e.g., reference a recent climate informed analysis, if available).

The freezing elevation during the winter in nearby mountains has a statistically significant increasing trend over the time period of 1949-2016 (WRCC, North American Freezing Level Tracker, www.wrcc.dri.edu/cwd/products/), suggesting that snowpack in the region may already be affected by warming. Decreased snowpack would decrease regional water supply availability.

The amount of Colorado River water estimated to be available to SNWA on an annual basis under normal water supply conditions is a consumptive use of 276,000 AFY. Under existing agreements, SNWA is required to meet Nevada's combined drought and shortage obligation ranging from 8,000 AFY to a maximum of 30,000 AFY for Lake Mead elevations between 1,090 feet and 1,025 feet. In the event Lake Mead's elevation is projected to decline below 1,030 feet, the Secretary of the Interior will consult with Lower Basin stakeholders to determine if additional actions are needed to protect against Lake Mead declining below elevation 1,020 feet.

There is a high likelihood that SNWA and its member agencies will face drought and shortage obligations over the current 50-year planning horizon ending in 2070. In 2021, Reclamation's August 24-month study projected Lake Mead's probable elevation to drop below 1,030 feet. That modeling also projected Lake Mead's elevation to be below elevation 1,075 feet on January 1, 2022, resulting in the first ever declaration of Lower Basin shortage. As a result, SNWA is incurring a combined drought and shortage obligation of 21,000 AF during 2022. The U.S. Bureau of Reclamation's August 2021 projections indicate an increase in the probability of drought and shortage impacts compared to just one year earlier. As a result, the frequency and magnitude of the SNWA's obligation are expected to increase over time. In addition, drought conditions on the Colorado River are expected to exacerbate due to climate change, resulting in a greater likelihood of future shortage declarations.

E.1.4. Evaluation Criterion E—Project Implementation

Describe the implementation plan of the proposed project.

Table 3. Project Schedule

Task/Milestone	Start Date	Completion Date
Environmental and Cultural Compliance	Pre-award	Pre-award
Program promotion	Pre-award	Ongoing
Applications & pre-conversion work	April 2023	December 2025
Conversions	May 2023	January 2026
Inspections	August 2023	February 2026
Rebates issued	September 2023	March 2026

Describe any permits that will be required, along with the process for obtaining such permits. Identify and describe any engineering or design work performed specifically in support of the proposed project. Describe any new policies or administrative actions required to implement the project.

There are no permits required for this incentive project. There will be no engineering or design work with this project. There are no new policies or administrative actions required for this project.

E.1.5. Evaluation Criterion F—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? Will the proposed work benefit a Reclamation project area or activity? Is the applicant a tribe?

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 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. The applicant is not a tribe.

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. Matching contributions for this project will be provided by SNWA, through Groundwater Management Program fees and a Consumptive Use Charge for LVVWD, COH, and NLV customers who own parcels with an

active septic permit that is served by LVVWD, COH, or NLV water. No non-Federal funding will be provided by a source other than the applicant, so no letters of commitment are required.

7. Project Budget: Budget Proposal

Table 4. Total Project Cost Summary

SOURCE	AMOUNT
Costs to be reimbursed with the requested Federal funding	$1,747,500
Cost to be paid by the applicant	$1,747,500
Value of third-party contributions	$0
TOTAL PROJECT COST	$3,495,000

Table 5. Budget Proposal

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	TOTAL COST
	$/Unit	Quantity		
Salaries and Wages				
N/A to the proposed project				0
Fringe Benefits				
N/A to the proposed project				0
Travel				
N/A to the proposed project				0
Equipment				
N/A to the proposed project				0
Supplies and Materials				
N/A to the proposed project				0
Contractual/Construction				
N/A to the proposed project				0
Other				
Rebates	$15,000	233	Rebates	$3,495,000
Environmental Compliance				
Not anticipated				$0.00
TOTAL DIRECT COSTS				$3,495,000
Indirect Costs				
Type of Rate	percentage	$base		$0.00
TOTAL ESTIMATED PROJECT COSTS				**$3,495,000**

8. Project Budget: Budget Narrative

All costs included in this proposal are directly related to the project and necessary for its implementation. The non-federal contribution is 50 percent; the federal contribution is 50 percent.

Salaries and Wages/Fringe Benefits: 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.

Travel/Equipment/Supplies and Materials/Contracts/Third-Party In-Kind Contributions: Not applicable to the proposed 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 $3,495,000 in septic system conversion rebates will result in the conversion of an estimated 233 parcels. The rebate average is estimated at $15,000 per conversion.

Total Direct Costs: Reclamation is requested to contribute $1,747,500 toward direct costs. SNWA will provide match of $1,747,500.

Indirect Costs: 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?

The proposed project would convert existing septic systems to municipal sewer connections at various privately-owned sites in the Las Vegas Valley. Proposed project activities would be completed under SNWA's Septic Conversion Program that provides financial incentives to participating private property owners who convert their septic systems to municipal sewer systems. As approximately 4,700 septic systems with a Las Vegas Valley Water District (LVVWD) water connection accounted for approximately 5,000 acre-feet of consumptive water use in 2020, private property owners who complete conversions would result in consumptive water savings to help meet conservation goals. All proposed conversions would be completed by private property owners on previously disturbed private land. Minimal earth-disturbing work would be required to remove the existing septic system and install a municipal sewer connection. Impacts to soil and air quality would be minimal as the areas are previously disturbed and activities would be limited to those areas and temporary. Septic systems not operating correctly or maintained properly may cause aquifer contamination. As a result, there may be beneficial impacts to water quality in the aquifer following septic system removals. The septic conversions would result in beneficial impacts to water quantity by reducing annual consumptive water use within the Las Vegas Valley, a region experiencing persistent drought. Projects areas are previously disturbed and used year-round by the property owners, and therefore do not provide animal habitat. The proposed project would increase ambient noise levels, but the effect would be temporary and localized. Following conversion activities, privately-owned sites would maintain the same purpose and appearance, causing 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?
The proposed project areas are comprised of privately-owned sites with existing septic systems in the Las Vegas Valley that are previously disturbed. There are no known listed or proposed to be listed federally threatened or endangered species that are afforded protection under the Endangered Species Act and the private lands 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?"
There are no wetlands or other surface waters inside the proposed project areas that potentially fall under CWA jurisdiction as "Waters of the United States."

When was the water delivery system constructed?
LVVWD commenced operations in 1954 and has served as the Southern Nevada region's largest municipal water provider since that time. As the region evolved so too has the LVVWD's water delivery system to meet the region's needs.

Will the proposed project result in any modification of or effects to, individual features of an irrigation system?
The conversion of existing septic systems to municipal sewer connections at privately-owned sites in the Las Vegas Valley would not result in the modification of an irrigation system.

Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places?
The proposed project area includes various privately-owned sites throughout the Las Vegas Valley. There are a number of buildings, structures, or features within the Las Vegas Valley that are listed or eligible for listing on the National Register of Historic Places. However, it is not anticipated that any of these privately-owned properties will apply for the septic system conversion if a conversion removes or prevents their listing on the National Register. However, if any buildings, structures, or features are discovered to be listed or eligible for listing, SNWA, in cooperation with the property owner, would coordinate with the Reclamation cultural resource specialist and the State Historic Preservation Office in advance.

Are there any known archeological sites in the proposed project area?
Although there are number of known archaeological sites throughout the Las Vegas Valley, the proposed project areas include privately-owned sites which have been previously disturbed. In the unlikely event that an owner applies for a septic conversion and an archaeological site is discovered during proposed project activities, Reclamation would immediately be notified and all activities at the location of the discovery would cease until further notified by Reclamation.

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 septic system conversions would provide consumptive water savings that benefit the entire Las Vegas Valley service area.

Will the proposed project limit access to and ceremonial use of Indian sacred sites or result in other impacts to tribal lands?
The proposed project would not limit access to and ceremonial use of Indian sacred sites and would not result in any impacts on tribal lands. The proposed project areas include privately-owned sites which have been previously disturbed. However, if an Indian sacred site is discovered during proposed project activities, Reclamation would immediately be notified and all activities at the location of the discovery would cease until further notified by Reclamation.

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 areas include privately-owned sites with septic systems located throughout the Las Vegas Valley. Since the properties are maintained, it is unlikely noxious weeds or non-native invasive species occur within their boundaries. Further, Nevada state law requires noxious weed control on all lands, including private property. 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 a non-construction program, it is not anticipated that the implementation of this incentive project will require the issuance of any permits. Property owners may be required to seek permits; however, acquisition of such a permit would be the responsibility of the property owner.

11. Existing Drought Contingency Plan
Chapter Three of SNWA's 2021 Water Resource Plan is attached as Appendix B.

12. Letter of Support
A letter of support from the Clark County Water Reclamation District is attached in Appendix A.

13. 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 its July 21 meeting. A copy will be forwarded to Reclamation at that time, as communicated to the Reclamation Drought Coordinator.

14. Overlap or Duplication of Effort Statement
U.S. Representative Susie Lee submitted a request for $3,000,000 for the Septic Conversion Program through the Interior-Environment Appropriations bill in May 2022. SNWA is not considering this potential funding as match. With over 14,000 parcels with septic permits in the Las Vegas Valley, various funding sources will be pursued in the coming years.

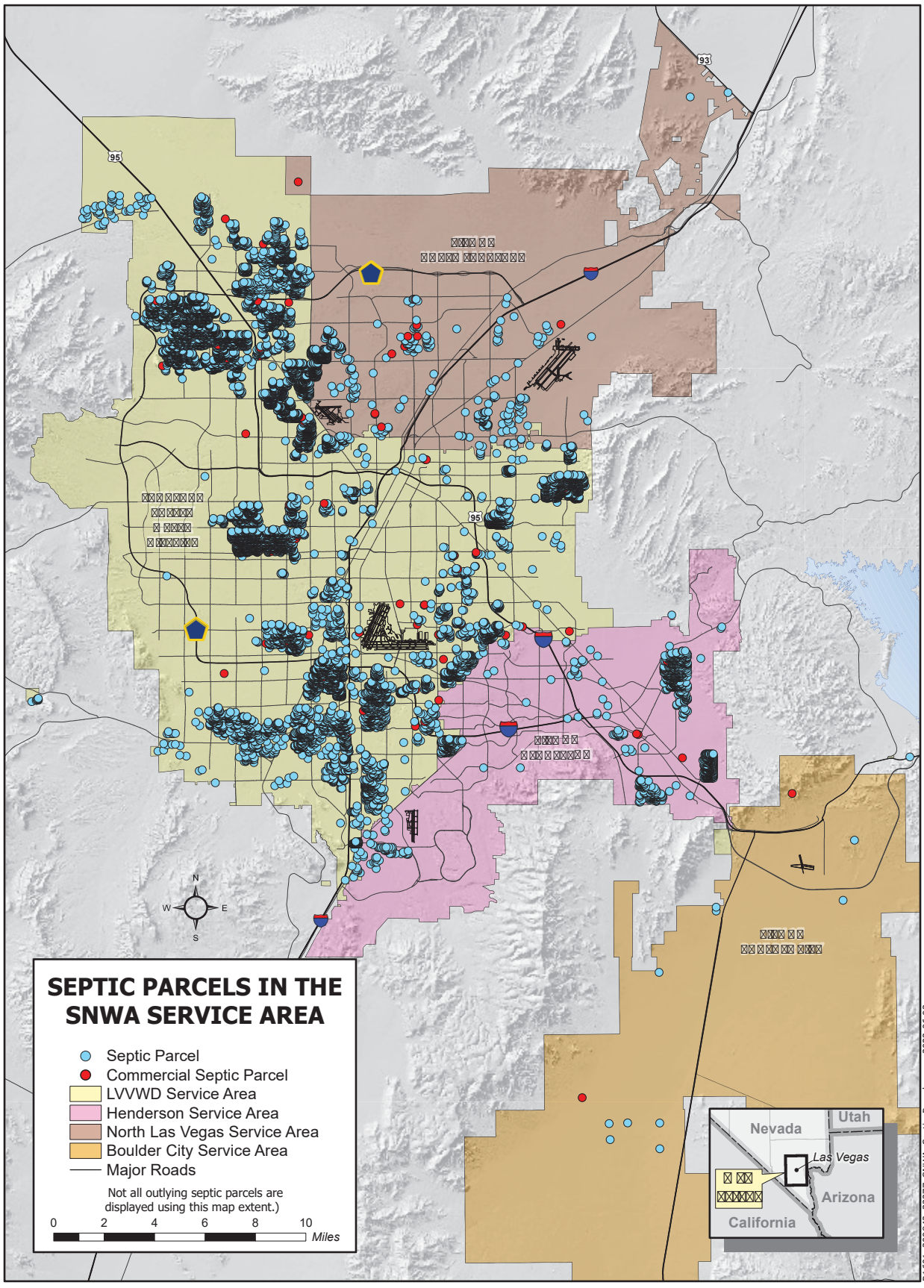
15. Conflict of Interest Disclosure
To the best of our knowledge, no actual or potential conflict of interest exists at the time of submission.

16. 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.

17. 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.

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

19. Supporting Documents
Attached as Appendices A-C.


SEPTIC PARCELS IN THE SNWA SERVICE AREA
Septic Parcel
Commercial Septic Parcel
LVVWD Service Area
Henderson Service Area
North Las Vegas Service Area
Boulder City Service Area
Major Roads
Not all outlying septic parcels are displayed using this map extent.)
0 2 4 6 8 10
Miles
N
W
E
S
95
93
Nevada
Utah
Las Vegas
Arizona
California
R1601_299842_32277_SNWA_Septic_Parcels.aprx 2022.06.02

Clark County Water Reclamation DISTRICT

June 8, 2022

Bureau of Reclamation
Attn: Ms. Sheri Looper
Mail Code: MP-400
2800 Cottage Way

RE: Bureau of Reclamation's WaterSMART Drought Response Program: Drought Resiliency Projects Letter of Support

To Whom It May Concern:

As the General Manager of the Clark County Water Reclamation District (CCWRD), I am writing in support of the Southern Nevada Water Authority's application to the Bureau of Reclamation WaterSMART Drought Response Program: Drought Resiliency Projects to fund the Septic Conversion Grant Program, a program developed by the Southern Nevada Water Authority (SNWA) and its member agencies, which includes CCWRD. As Lake Mead's water levels continue to decline and the federal government has declared a shortage on the Colorado River, Southern Nevada must continue to do what it can to conserve and protect one of its most precious natural resources.

There are approximately 14,500 septic systems in Southern Nevada. Septic systems pose a water quality issue as the effluent released from a septic tank contains nitrates which pose multiple health risks if introduced into the groundwater supply. In addition, the wastewater discharged through septic systems cannot be returned to Lake Mead for return-flow credits as septic systems prevent indoor water use from being recycled and used again. It's estimated that the use of septic systems in the Las Vegas Valley wastes approximately five billion gallons of water each year.

The cost to abandon a septic system and connect to a municipal sewer line can be costly. As such, the SNWA, in coordination with its member agencies, have spearheaded an initiative to create a Septic Conversion Grant Program that would pay a portion of the cost for a property owner to abandon their septic system and connect to a sewer line.

The CCWRD represents the largest wastewater agency in Southern Nevada, conveying the majority of the community's wastewater to our treatment facilities, highly treating the wastewater and then discharging these water resources to the Las Vegas Wash that ultimately flows to Lake Mead. This system represents one of the largest urban water recycling systems in the country, and the Septic Conversion Program will only expand it. The Septic Conversion Grant Program has already received some initial pilot funding from various local government entities in Southern Nevada, including the CCWRD, but more funding will be needed to convert the thousands of septic systems in the Las Vegas Valley.

5857 East Flamingo Road • Las Vegas, Nevada 89122 • (702) 668-8888 • (800) 782-4324
cleanwaterteam.com

Conservation is of the utmost importance for the region and addressing septic systems in the valley is just one of many ways to allow Southern Nevada to continue to proposer and thrive. Thank you for your consideration of this grant application.

Sincerely,

Thomas A. Minwegen
General Manager