WaterSMART Drought Response Program: Drought Resiliency Projects for Fiscal Year 2023

Bureau of Reclamation NOFO No. R23AS00005

Town of Chino Valley, Arizona

Water Demand Rate Study

June 13, 2022

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Executive Summary

Severe and sustained drought conditions in the Lower Colorado River Basin continue to negatively impact small sole-source groundwater supply aquifers, water providers, imperiled and threatened rivers, and fragile river ecosystems, as well as permanently dewatering sensitive lands. Within northern Arizona and specifically the Prescott Active Management Area (Prescott AMA) there is a limited and over-drafted small sole source of groundwater that is the only available water supply for Chino Valley. Building strong drought resiliency measures is crucial to mitigating and managing drought impacts. The Town of Chino Valley is proposing to implement a water demand rate study to analyze, develop and deploy new rate structures that significantly reduce, and/or in some cases eliminate, the demand for water consumed outdoors. Currently, 50-60% of all water demands are associated with water consumed outdoors within the community. By reducing this water demand component, a higher percentage of water pumped and delivered will be returned through the existing sewer collection and treatment system and sent to the Town's recharge facilities, increasing the percent of water returned into the aquifer. The proposed water demand rate study will evaluate a robust set of water rate tools that will be deployed within this the new water demand rate study project.

The Upper Verde River headwaters originate within the northern portion of the incorporated boundary limits of Chino Valley. The Upper Verde River is one of the few remaining perennially flowing rivers in Arizona that is designated as wild and scenic, and Federally listed as an imperiled and threatened river portion that is overly sensitive to slight changes in groundwater conditions. The river baseflows are solely dependent upon groundwater flows that discharge as springs into this upper portion of the river. This portion of the river also has Federally listed endangered and threatened species. Through this water demand rate study, which is intended to reduce outdoor water demands, the aquifer can be sustainably managed and therefore have a more reliable groundwater flows for the small base flow of this fragile river and ecosystems.

Date June 15, 2022

Applicant Name: ***Town of Chino Valley, Arizona***

Town of Chino Valley, Yavapai County, Arizona

Category Applicant
Category A. Applicant

Funding Group
Funding Group I

Project Summary

The Town of Chino Valley, located in Yavapai County, in north central Arizona will perform a water demand rate study that will focus on the development of water rates that will reduce the amount of outdoor water usage with the goal of reserving groundwater within the Little Chino aquifer. This water left within the aquifer will help stabilize the groundwater adjacent to the Upper Verde River and assist with maintaining the baseflows of this imperiled, Wild and Scenic designated river and one of the last perennially flowing rivers within the State.

Project Duration

The total length of this project is four months and could start as early as March 2023, or as soon as a financial assistance agreement is in place. See **ATTACHMENT 1** for a detailed work schedule.

Estimated Completion Date

The estimated completion date for this project is July 2023 if started in March of 2023.

Located on Federal Facility

The proposed project is not located on any Federal Facilities.

Project Location

The proposed Water Demand Rate Study Project is located within the Town of Chino Valley, Yavapai County, Arizona, approximately 17 miles north of the City of Prescott, at 34.7575° N, and 112.4538° W and within the Prescott AMA. A map of Chino Valley and the Upper Verde River, and the Verde River watershed is included as **ATTACHMENT 2**.

Technical Project Description

The Town of Chino Valley ("The Town") is seeking to accomplish a comprehensive water demand and wastewater rate study and long-term financial plan. The overall objective is to establish a schedule of user rates and charges that are sufficient to meet future system revenue requirements including capital improvement needs, debt service coverage, operating costs (including the cost of water delivered and wastewater treated) and non-operating costs, and minimum operating reserves (60 - 90 days). The goal is to implement a multi-year water and wastewater rate plan that will ensure funds remain sufficient to achieve operating and capital funding requirements and most importantly decrease outdoor water usage demands.

To accomplish these overall goals and objectives, our team's approach will utilize the "generally accepted" cash basis rate setting methodology as delineated in AWWA's Manual M1, (M1 Principles of Water Rates, Fees and Charges, 7th Edition, 2017) for the water utility and WEF MOP No. 27 for the wastewater utility, (Financing and Charges for Wastewater Systems WEF MOP 27: WEF Manual of Practice No. 27 1st Edition, 2004). The project team will collect from staff such standard inputs as account growth projections, historic and forecast adjusted water

and wastewater consumption (billing units), outstanding debt service schedules, the current CIP, account/usage/revenue data from the Town's billing system, and current budget information to develop the forecast of future costs. The information developed during this rate study will allow the Town to choose a financial and capital plan that will minimize the impact on all classes of ratepayers, while still allowing it to meet the increasing expense demands of operations and environmental standards and regulations and achieving the goals of a 2% water demand reduction per year.

The project team will develop a comprehensive Microsoft Excel spreadsheet-based utility rate and financial planning model that will allow the Town to evaluate a variety of "what-if" alternatives. This is especially useful in evaluating the affordability of the capital improvement program, allowing the user to turn new projects "on or off" in the model, change the costing with updated information, delay their funding, or look at cash vs. debt vs. fee-funding alternatives and their impact on affordability. This model has formed the basis for water and wastewater rate plans for over 150 cities in the USA and seven sovereign nations and US Commonwealths/territories and is one of the premier ratemaking tools in the industry.

The most critical focus of the study will involve the development of water demand rate tools and the development of rate plans intended to reduce outdoor water demands, make the most efficient use of the area's limited groundwater resources, and to decrease the demand curve of the customer base. Alternative rate plans will be analyzed in detail with these goals in mind. These plans include, but are not limited to, luxury, exported and non-returned usage rate classes, inverted block rates; the development of a senior citizens' rate; commercial irrigation block rates; the establishment of a water acquisition fee; and surcharges to create incentives to install water-efficient systems for high outdoor water use customers. Every community is unique in terms of which programs and/or incentives will achieve the result of reducing water resource demands; the key is to determine what program is most appropriate for the Town.

Performance Measures

The primary performance measure for the proposed project is twofold and includes: 1) Quantification of the water demands for the entire water service area prior to and post the water demand rate study being implemented. Each year the water demands will be analyzed and quantified to determine the amount of decreased water demands that have occurred within the water service area and understand the amount of new water demand connections to the system and ensure the annual goal of a 2% water demand reductions is achieved; and 2) Water demand reduction information will be evaluated in conjunction with data collected at the Upper Verde River baseflow gauging station over the next 15 years to determine baseflows with water demand reductions. While there are time-delays between water located within the Little Chino Aquifer that is moving towards the Upper Verde River, a numeric groundwater modeling analysis could also be utilized determine the travel time of groundwater to the Upper Verde River to determine the timing of the reserved water supply benefit.

Evaluation Criteria

E.1.1. Evaluation Criterion A—Project Benefits (30 points)

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

Each year, a new water rate will be deployed that will decrease water demands, leaving more water within the aquifer by reducing outdoor water demands, and increasing the percentage of wastewater that is collected, treated, and recharged back into the aquifer. This will ensure that water demands become flatter or stabilized throughout the year creating a reserve of groundwater within the limited groundwater aquifer that is not pumped during the summer peak water demand season and the most critical time of baseflows for the Upper Verde River. The 50-60% of outdoor water use will decrease and thereby increase the percent of water collected with the sewer collection system, treatment, and aquifer recharge systems will increase. Water demand reductions allow a greater percentage of water to be recycled versus lost to the single one-time outdoor water use. Incentive programs funded through this water demand rate study will better manage water resources used by the deployment of technology to also reduce or eliminate the outdoor water demands and will work in tandem with the adjusted water rates. These incentive programs will evaluate the potential for augmented water supplies such as rainwater catchment, landscape designs, artificial turf, and regional stormwater collection, detention/retention projects to utilize stormwater currently not utilized for outdoor water demands.

This project will continue to provide benefits in perpetuity as water rates will be adjusted every year over a 5-year period and incorporated within new water demand rate studies and adjusted accordingly to continue to reduce the outdoor water demands with existing and new water customers. Incentive programs will become bolstered, more utilized, and continue to decrease the outdoor water demand continuously. Each year, the volume of water left in the aquifer is water that makes the Town more drought resilient and allows for the banking and securing of a water reserve. The water reserve ensures there is a stable aquifer baseflow to the Upper Verde River that will stabilize the baseflows, especially during the summer season, and allow it to become drought resilient.

Will the project make additional water supplies available?

This project will make additional water supplies available and reserved for drought resiliency and to support the baseflows of the threatened Upper Verde River.

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 (e.g., if the project captures flood flows in wet years, provide the average benefit over ten years including dry years).

A target of 2% demand decreases per year for the first 5 years and therefore a 10% reduction of demand in year 5 and provides a total of 29.8 acre-feet (9.7 million gallons) of water supply

reserved for drought resiliency. Year 5 through year 10 with a 2% reduction in demands per year would result in creating a total of 59.2 acre-feet (19.3 million gallons) of water supply reserved. However, if the goal of long-term rate studies every 5 years can continue to reduce demands by 2% per year until the goal of 30% is achieved (achieved by year 15) then a total of 88 AF (28.7 million gallons) of water supplies will be reserved.

While groundwater not pumped within the aquifer directly benefits the Upper Verde River, it cannot be quantified without the use of a numeric groundwater modeling project at significant cost. A numeric groundwater modeling project is not currently included within this grant application but could be funded in the coming 5-years whereby the amount of groundwater created that directly benefits the Upper Verde River can be quantified. This could be followed up with the USBR, if modeling becomes available for quantification within the 5-year period.

What percentage of the total water supply does the additional water supply represent? How was this estimate calculated?

The percent of the overall water supply is estimated at a cumulative 2% per year water demand reduction or 10% at year five. This was estimated as water demand reduction targets that will be achieved or exceeded through the deployment of new rate-setting tools as part of a new water demand rate study. This percent was calculated by the current and projected water demands for the water service area and then aggregated from year to year.

Provide a brief qualitative description of the degree/significance of the benefits associated with the additional water supplies.

Chino Valley is the northern most municipal water provider within the Prescott AMA and the headwaters of the Upper Verde River are located within the community and adjacent to its water service area. Water reserved, demand reductions, and recycling water recharged back into the aquifer within this area will have the most dramatic and positive impacts on reserving water within the aquifer and sustaining the baseflows of the Upper Verde River. Travel times for the groundwater and the Upper Verde River are short due to their proximity and again will provide the highest qualitative benefits to sustaining the Upper Verde River baseflows. The groundwater basin where the Town of Chino Valley is located has been quantitatively groundwater modeled and shown to provide an average of five cubic feet per second (cfs). Currently, due to prolonged drought conditions, the baseflows of the Upper Verde River are half of their average baseflows or 2.5 cfs or less from the Little Chino Aquifer. Any additional groundwater contributing to these annual flows will provide a positive influence on the River and this fragile ecosystem.

Will the project improve the management of water supplies? For example, will the project increase efficiency, increase operational flexibility, or facilitate water marketing (e.g., improve the ability to deliver water during drought or access other sources of supply)? If so:

How will the project increase efficiency or operational flexibility?

With the water demand rate study completed and additional water left within the aquifer, it will provide a reserve of water supplies that stretch this limited water supply much further into

the future through the prolonged drought. As wells will not have to pump the extraordinary amounts of water within the summer months, called the peak water demand season, the water utility will have a reduced and flattened water demand curve that allows for operational flexibility in the movement of groundwater pumping which allows areas of the aquifer to rest and recover. Also, the wells within the hydrologic area of the recharged reclaimed water mound will be able to manage the recovery and distribution of recycled water and meet water demands versus all wells pumping at their permitted volumes of virgin groundwater. Also, by not creating larger cones of depression from large pumping wells, these wells will be allowed to rest and pump less. This will provide additional groundwater to contribute to the baseflows of the Upper Verde River.

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 (e.g., if the project captures flood flows in wet years, provide the average benefit over ten years including dry years).

Without knowing what future water rate tools will be developed and deployed, it is unknown at this time if a goal higher than 2% per year could be achieved. However, a target of 2% of demand decrease per year for the first 5 years and therefore a 10% reduction of demand realized at year 5, a total of 29.8 acre-feet (9.7 million gallons) of water supplies will be reserved for drought resiliency.

The quantity of water that will be better-managed is calculated based on achieving a target water demand reduction of 2% (6 acre-feet in year one) and achieving a 2% reduction per year thereafter. As growth increases within the water service area so does demands (5 AF per year) and but the amount of the water service area total demand reductions is reduced 1 AF per year. See Table 2 below (left-most column) for calculation.

Total Demands (AF/YR)	Target Reduction (2%/YR)	Water Reserved (AF/YR)	Total Water Reserved after 5 years (AF)
300	2	6	
299	2	5	
298	2	5.96	
297	2	5.94	
296	2	5.92	**29.8**

TABLE 1– Showing demand reductions and reserved water per year for 5 years.

Year 1 through year 10 with a 2% reduction in demands per year would result in saving a total of 59.1 acre-feet (19.3 million gallons) of water. However, if the goal of a long-term water demand rate study occurs every 5 years that also achieves water demand reductions of 2% per year until the goal of 30% is achieved then a total of 88 AF (28.7 million gallons) of water will be reserved by year 15.

Year	Total Water Demands (AF/YR)	Water Demand Reduction (5)	Aggregate Water Reserved (AF/YR)
1	300	2	6
2	299	2	11.98
3	298.02	2	17.94
4	297.05	2	23.88
5	296.11	2	29.80
6	295.19	2	35.70
7	294.29	2	41.59
8	293.40	2	47.46
9	292.53	2	53.31
10	291.68	2	59.14

TABLE 2 – Showing demand reductions and reserved water for years 1-10.

What percentage of the total water supply does the water better managed represent? How was this estimate calculated?

At year five, the total percent of water better managed for drought resiliency is 10% of the total water supply. At year ten the total percent of water better managed for drought resiliency is 20%. This was calculated based on the aggregated 5- and 10-year totals divided by the total water demands for year 5 and 10, respectively.

Provide a brief qualitative description of the degree/significance of anticipated water management benefits.

With the reduction of summer peak water demands and the water not pumped and reserved for drought resiliency within the aquifer, the water demands continue to decrease, even with increased annual growth. This reserved water will then provide additional baseflows to the impacted Upper Verde River through better aquifer management of the aquifer by reserving this water. The water service area will have flatter water demand which provide operational and financial efficiencies and allow the aquifer to rest during the summer peak water months and mitigate summer cones of depressions that may negatively influence or divert flows from the springs of the Upper Verde River.

Will the project make added information available to water managers? If so, what is that information and how will it improve water management?

The water manager will be able to analyze information regarding customer water demand reductions. New water incentives will provide a base and priority water demand customers to target with water demand reductions. This will provide for public engagement and additional opportunities to meet and assist with high water demand customers. Incentives may provide water demand reductions in addition to the 2% of water demand reductions influenced by the rate tools.

If the proposed project includes any of the following components, applicants need to provide the additional information requested below for the specific project type. This additional information will be used in evaluating and scoring the proposal.

Saltwater Barriers

- Saltwater barriers are not applicable for this project.

New Water Marketing Tool or Program

How does the new tool or program increase the flexibility of acquiring water on the open market?

The proposed water demand rate study and subsequent decreasing demands provide for an instant reserve of water within the aquifer whereby there is no need to pursue the local open water market to secure new supplies at great expense. The current value of an assured water supply credit (100 AF or 1 AF per year for 100-years) is $25,000 per AF. With the aggregated reserved quantity of water for years 5 and 10 for drought resiliency created by the water demand rate study will save $745,000 in year 5 and $1.48 million savings by year 10 and not having to purchase additional water supplies by reducing current demands.

What is the scope of water users and uses that will benefit?

By reducing water demands, the water service area aquifer will be more drought resilient by reserving the water left within the aquifer and recharging a higher percent of water delivered, collected, and recharged into the aquifer. The Upper Verde River will benefit from more aquifer stability and more stable spring contributions of groundwater as baseflows.

Are there any legal issues pertaining to water marketing that could hinder project implementation (e.g., restrictions under Reclamation or state law or contracts, or individual project authorities).

There are no legal issues that would hinder the project from moving forward and be completed.

Metering/Water Measurement Projects

This project is not proposing new metering or measuring devices.

E.1.2. Evaluation Criterion B – Drought Planning and Preparedness (20 points)

For purposes of evaluation this criterion, please:

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. These pages will be included in the total page count for the application.

The Town of Chino Valley has been in a severe drought since 1999 as described by the Arizona Department of Water Resources (ADWR). The Town of Chino Valley relies solely on groundwater as compared to multiple annual renewable surface water supplies that the Phoenix Metropolitan area relies upon. Drought directly impacts the amount of natural recharge to the aquifer that occurs within the region. Historically, on average only 2% of all precipitation that falls from the sky throughout the year provides natural recharge to the small aquifer. Therefore, the Town of Chino Valley and the regional organizations that exist have been working towards water demand reductions especially for outdoor water use. These organizations are regional in nature and find economies of scale and efficiencies in generating various unified plans, policies, and workbooks for the region and more importantly have a unified message with a recognizable logo.

The Upper Verde River Watershed Protection Coalition

The Town of Chino Valley is a member of the Upper Verde River Watershed Protection Coalition (UVRWPC) whereby this regional group with the support of a USBR grant, constructed a comprehensive workbook, which includes key elements of drought preparedness, and provides all the information a residential commercial, industrial, or agricultural water user should know to save water, decrease demands, and protect the aquifer. The link for the workbook is below and pertinent information can be found in **ATTACHMENT 3:**

Water Conservation Handbook.pdf (yavapaiwatersmart.org)

Upper Verde River Watershed Protection Coalition (yavapaiwatersmart.org)

The Prescott Active Management Area 4th Management Plan

The Arizona Department of Water Resources also has a regulatory guidance document that all water providers must adhere to the Prescott AMA 4th Management Plan. The Prescott AMA 5th Management Plan is currently under development. The Prescott AMA 4th Management Plan link is provided below, and pertinent information can be found in **ATTACHMENT 4:**

PrescottFourthManagementPlan.pdf (azwater.gov)

The Town of Chino Valley – Water Demand Reduction Plans

The Town of Chino Valley also has water demand reduction information. The Town's information can be found at the link provided below and pertinent information can be found in **ATTACHMENT 5:**

Water Conservation Tips | Chino Valley, AZ - Official Website (chinoaz.net)

Explain how the applicable plan addresses drought. Proposals that reference plans clearly intended to prepare for, and address drought will receive more points under this criterion.

The information provided, while it is not specifically called "drought plans" or "drought Preparedness plans," are ways in which each water provider can reduce their overall water demands and thereby leave more water reserved within the aquifer. Northern Arizona is focused on reducing water demands and leaving more groundwater within the aquifer and more sustainably using the limited and finite quantity of water in the Little Chino aquifer. Sustainably using groundwater through time will allow the Town to make available augmented water supplies for drought preparedness for the Town of Chino Valley and the drought impacted Upper Verde River. The regional organizations and the Town have focused efforts on demand reduction to accomplish two primary objectives: 1) reduce the amount of over-drafting by demand reduction of the limited scarce groundwater supplies, and 2) provide for more groundwater to be available for baseflows of the Upper Verde River.

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 various stages of drought?

Because this area solely uses groundwater, which is currently over-drafted, leaving more water within the aquifer ensures a reserve for this limited ground water supply further into the future and stabilizes baseflows to the Upper Verde River. The reduction of outdoor water demands will reduce the outdoor water used and increase the percent of water that can be collected, treated, and recharged into the aquifer and recycled repeatedly. Water rate studies are specifically identified within the 4th Management Plan of the Prescott AMA.

Explain whether the drought plan was developed with input from multiple stakeholders. Was the drought plan developed through a collaborative process?

While each water provider conducts water demand rate studies individually, regional organizations have collaborated on the reduction of outdoor water demands to better increase the efficiency of aquifer management, decrease over-drafting, and provide for higher percentages of water that is recycled and reused. The Upper Verde River Watershed Protection Coalition (UVRWPC) Workbook and associated water demand materials and the Prescott AMA 4th Management Plan were created with and by comprehensive stakeholder input and through a collaborative process.

Does the drought plan include consideration of climate change impacts to water resources or drought?

The previous mentioned plans do not detail climate change plans but reference drought impacts which result from climate change for the Northern Arizona Region. Overall, the plans detail water demand management and how to reduce these demands.

Describe how your proposed drought resiliency project is supported by and existing drought plan.

Does the drought plan identify the proposed project as a potential mitigation or response action?

In the Prescott AMA, the 4th Management Plan document specifically cites the following on pages 11-19 **Attachment 4**, "Economic and growth factors are impacted by water pricing. Water rates are controlled by water providers and the Arizona Corporation Commission. Pricing can have a direct effect on water demands."

The 4th Management Plan for the Prescott AMA mentioned above references specifically water demand rate study and there are discussions of and examples of water demand rate studies which emphasize the philosophy of, "Rate structures have the advantage of avoiding the costs of regulation, restrictions, and policing while retaining a greater degree of individual freedom of choice for water customers", (EPA, How to Conserve Water and Use It Effectively).

Does the proposed project implement a goal or need identified in the drought plan?

The proposed project implements numerous goals within all previously mentioned concepts and plans that include the following: 1) the water management goal of safe-yield whereby the amount of water demands of the aquifer are equal to or are less than the natural, incidental, and artificial water recharge back into the aquifer; 2) the water management plan of decreasing groundwater over-draft; 3) the goal of not using new groundwater; 4) the goal of utilizing recharge and recovery of recycled water and delivering that water through indirect potable reuse at potable pricing; and 5) the goal of decreasing water demands through consumer pricing, and 6) ensuring the baseflows of the Upper Verde River.

Describe how the proposed project is prioritized in the drought plan?

While the goals of this project are not prioritized within the previously mentioned plans, water demand management remains the most cost-effective, environmentally beneficial, and immediate way to decrease water demands, increase water supplies in the short term and protect them in the long term. Improved long-term water use efficiency is a viable complement to — and sometimes a substitute for — alternative investments in long-term water supplies, water augmentation projects, and costly infrastructure. Efficiency paves a way to reduce long-term costs, and it is often the most cost-effective option available for securing a "new" water supply. When efficiency activities deliver benefits that exceed costs, the activity can be considered cost-beneficial or cost-effective compared with other supply alternatives. A water efficiency program that works to reduce the permanent level of customer water demand requirements will reduce the utility revenue requirements if it is cheaper than the alternative required water supply/infrastructure investment. In addition, viewing cost-effective efficiency programs as just a component of least-cost resource planning does not include potential indirect benefits for utilities, such as improved utility responsiveness to customers, providing customer options for retaining water use benefits in a world of higher costs, and improved water resource management and drought resiliency, (Building Better Water Rates for an Uncertain World, Alliance for Water Efficiency, 2014), **ATTACHMENT 6.**

E.1.3. Evaluation Criterion C—Sustainability and Supplemental Benefits (15 points)

Climate Change: E.O. 14008 emphasizes the need to prioritize and take robust actions to reduce climate pollution, increase resilience to the impacts of climate change, protect public health, and conserve our lands, waters, oceans, and biodiversity. Examples in which proposed projects may contribute to climate change adaptation and resiliency, may include but are not limited to the following:

In addition to drought resiliency measures, does the proposed project include other natural hazard risk reductions for hazards such as wildfires or floods?
The proposed project does not include other components of natural hazard risk reductions.

Does the proposed project include green or sustainable infrastructure to improve community climate resilience such as, but not limited to, reducing the urban heat island effect, lowering building energy demands, or reducing the energy needed to manage water? Does this infrastructure complement other green solutions being implemented throughout the region or watershed?
The proposed project will reduce the energy demands by reducing the amount of energy by pumping less water within wells during peak energy demand times, decrease the volumes of pressurized water within the water lines, decrease the amount of chemical usage, and decrease water line breaks and lost water due to peak water demands infrastructure loading. By reducing water demands, especially during typical high water demand summer months, the water demand curve will flatten and therefore will reduce the amount of energy required to meet demands especially during high energy peak times.

Will the proposed project establish and use a renewable energy source?
The water utility may utilize renewable energy sources secured by the energy supplier through interstate power agreements but does not have a designated renewable energy system currently in use.

Does the proposed project seek to reduce or mitigate climate pollutions such as air or water pollution?
The proposed project will not have components to reduce or mitigate climate pollution such as air or water quality. The water utility must comply with the Safe Drinking Water Act.

Will the proposed project reduce greenhouse gas emissions by sequestering carbon in soils, grasses, trees, and other vegetation?
The proposed project will not directly reduce greenhouse gas emissions other than the indirect reduction in energy usage that would reduce greenhouse gas emissions from reducing energy requirements from carbon emitting power generating stations.

Does the proposed project have a conservation or management component that will promote healthy lands and soils or serve to protect water supplies and its associated uses?

The principal priority of this project is to protect and reserve water resources and mitigate drought impacts on the local small aquifer that feeds the imperiled Upper Verde River. This will be accomplished by water demand management which will reserve water within the aquifer that supplies water to the Upper Verde River and the local community.

Does the proposed project contribute to climate change resiliency in other ways not described above?
The proposed project does not contribute to climate change resiliency in other ways not described above.

Disadvantaged or Underserved Communities: E.O. 14008: Tackling the Climate Crisis at Home and Abroad directs Federal agencies to assess potential benefits to disadvantaged communities as part of funding allocation processes. E.O. 13985: Advancing Racial Equity and Support for Underserved Communities Through the Federal Government also includes consideration of investment in underserved communities, consistent with other program requirements. E.O. 13985 defines an underserved community to include populations sharing a particular characteristic, as well as geographic communities, which have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life, and provides examples of such communities. See each Executive Order for additional information.
The Town of Chino Valley is not characterized as a disadvantaged community.

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 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? Please describe these benefits.
The proposed project will provide benefits to the local Yavapai-Prescott Tribal Nation. The tribal community receives its water supply from the same small local groundwater aquifer by the City of Prescott. Reducing water demands would ensure drought resiliency in that more water remains within the aquifer and is reserved for the tribal community.

Does the proposed project support Reclamation's tribal trust responsibilities or a Reclamation activity with a Tribe? Please describe these benefits.
The proposed project will not have any impacts on Reclamation's tribal trust responsibilities or activities.

Environmental Benefits: Drought resiliency projects often provide environmental benefits in addition to water supply reliability benefits for other users. Ecological resiliency is crucial to sustain ecosystems that can respond to and recover from external stressors resulting from climate change and drought.

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?

The proposed project intends to reserve water within the aquifer that will provide enhancements to the baseflows of the Upper Verde River that will stabilize the ecology, provide drought resiliency to the Upper Verde River, its fragile riparian area, endangered and imperiled fishes, and other species. The river is Arizona's only Wild and Scenic designated river. The Upper Verde River supports extensive woody riparian and wetland vegetation and provides critical habitat for a diversity of native aquatic and riparian-dependent species. Historically the Verde River supported sixteen native fish species and only ten remain. These include the federally endangered razorback sucker and Colorado pikeminnow, as well as the threatened spikedace. Three sensitive riparian herpetofauna species survive in the watershed: the northern Mexican gartersnake, the narrow headed gartersnake, and the lowland leopard frog. The Verde River supports a high density of breeding birds; over two hundred resident and neo-tropical migratory bird species have been recorded. Species such as the federally endangered southwestern willow flycatcher and the yellow-billed cuckoo depend on the river's woody riparian forests of cottonwood, willow, and ash for their tenuous survival. The Verde supports the largest number of bald eagle breeding areas of any river in the state and is one of only three rivers in Arizona with populations of river otters. Additional endangered or threatened species include the Gila chub, loach minnow, and Chiricahua leopard frogs.

What are the types and quantities of environmental benefits provided, such as the types of species and the numbers benefited, acreage of habitat improved, restored, or protected, or the amount of additional stream flow added? How were these benefits calculated?

This project will reserve water within the aquifer that will provide enhancements to the baseflows of the Upper Verde River which will provide benefits to species, riparian environments, and adjacent habitats. As mentioned previously the timing of the baseflows contributions cannot currently be quantified, which would require numeric groundwater modeling at great expense. Therefore, the volumes of additional baseflows have not been quantified but because the Town of Chino Valley is at the headwaters of the Upper Verde River any groundwater reserved within the aquifer will have a positive hydrologic effect and net positive influence on the baseflows of the River. The groundwater is directly connected to springs that discharge directly into the Upper Verde River and provide 100% of the baseflows.

Will the proposed project reduce the likelihood of a species listing or otherwise improve the species status?

If baseflows become more stable and drought resilient, the likelihood of species being listed that depend upon the water for critical life cycles will be potentially eliminated and could improve statuses for species should the river become stable and drought resilient. However, this has not been analyzed or quantified at this time. However, if the Upper Verde River becomes ephemeral and dries up during portions of the year that will have an extremely negative effect on the flora and fauna of this fragile ecosystem,

This sub-criterion will be scored based on planned, direct benefits that will result from project implementation. Applicants that can quantify the direct benefits and provide reasonable support will receive the most points in this sub-criterion. Example project types that may receive points in this category include, **but are not limited to**:

Increasing storage to augment stream flows during dry periods to protect endangered species
With the reduced water demands established through a water demand rate study deployment, the groundwater system will have an increase in water storage which will enhance the baseflows of the Upper Verde River. Stabilized baseflows will ensure sustainable ecosystems for the river, the riparian areas, and the endangered species.

Improving water quality or providing water for wildlife habitat areas
The goal of this project is to find a sustainable balance between water demands, aquifer reserved water (drought resiliency), and ensuring baseflows of the river. Chino Valley is currently within the State's goal of safe yield as the number of sewer customers exceeds the number of water customers and thereby it is currently recharging more reclaimed water into the aquifer than the potable water it currently delivers to all its customers. Further reducing the water demands through this demand rate study will further increase the amount of water left and recharged into the aquifer. This will provide increased availability of groundwater for the baseflows of the river.

Other Benefits: Will the project address water sustainability in other ways not described above? For example:

Will the project assist States and water users in complying with interstate compacts?
This project is not applicable to nor conflict with interstate compacts.

Will the project benefit multiple sectors and/or users (e.g., agriculture, municipal and industrial, environmental, recreation, or others)?
This project will benefit the municipal, industrial, environmental, and recreational sectors. By becoming more drought resilient, the municipal and industrial sectors will have a more sustainable supply of the water resources. The project will benefit the environmental and recreation sectors by ensuring baseflows of the Upper Verde River. This river is especially important to Chino Valley and by preserving the imperiled ecology and ensuring the Wild and Scenic designated river has a perennial baseflow it will continue to be enjoyed by the recreation sector.

Will the project benefit a larger initiative to address sustainability of water supplies?
This project will help satisfy a larger benefit as part of the Arizona Department of Water Resources, Prescott Active Management Area (AMA) water management goal of achieving safe yield. Also, this activity will help achieve the goals of sustainable water supply management for social, environmental, and economic water demands.

E.1.4. Evaluation Criterion D—Severity of Actual or Potential Drought Impacts to be addressed by the Project (15 points)

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 (e.g., impacts to agriculture, environment, hydropower, recreation and tourism, forestry), and how severe are those impacts? Impacts should be quantified and documented to the extent possible. For example, impacts could include, but are not limited to:

Whether there are public health concerns or social concerns associated with current or potential drought conditions (e.g., water quality concerns including past or potential violations of drinking water standards, increased risk of wildfire, or past or potential shortages of drinking water supplies? Does the community have another water source available to them if their water service is interrupted?).
There are social health concerns regarding the future viability of the Little Chino Aquifer and the impacts to the Upper Verde River. The public sector is demanding more sustainable water management of the community's water resources. The community has another water supply option within another adjacent basin (Big Chino Sub-basin) that is legally allowed to be imported, however, due to the enormous costs ($30 million) associated with transporting that limited water supply (650 AF/YR and $45,000 per AF) into the community it is currently not economically feasible.

Whether there are ongoing or potential environmental impacts (e.g., impacts to endangered, threatened or candidate species or habitat).
There are current drought impacts to the baseflows (currently 50% reduction of the historical average baseflows) of the Upper Verde River that will cause damage to this fragile river system and could lead to impacts of endangered or threatened species. This proposed project will help mitigate these impacts.

Whether there are local or economic losses associated with current drought conditions that are ongoing, occurred in the past, or could occur in the future (e.g., business, agriculture, reduced real estate values).
The financial costs and limited water supplies associated with securing a 100-year assured water supply have become the limiting factors that have driven these investments to other parts of the State that have more diverse water supply resources which are both renewable and nonrenewable.

Whether there are other drought-related impacts not identified above (e.g., tensions over water that could result in a water-related crisis or conflict).
There are increased tensions among local domestic well owners that have had their small domestic wells permanently go dry or have created fears of soon realized impacts from well owners by a short-term loss of water accessible for their lands. Water hauling stations and higher prices for these water supplies are increasing.

Describe 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 that the area has experienced drought conditions. Include information to describe the frequency, duration, and severity of current or recent droughts. Please provide supporting documentation, (e.g., Drought Monitor, droughtmonitor.unl.edu).

The 22-year drought conditions (illustrated by ***Table 3*** below) are decreasing the amount of natural recharge contributing water to the aquifer on an annual basis and increasing the amount of over-drafting (3.5 to 1) occurring within the small Little Chino aquifer. This is magnifying the problems of annual water table elevations dropping and significantly impacting the baseflows of the Upper Verde River (illustrated by ***Table 4*** below).

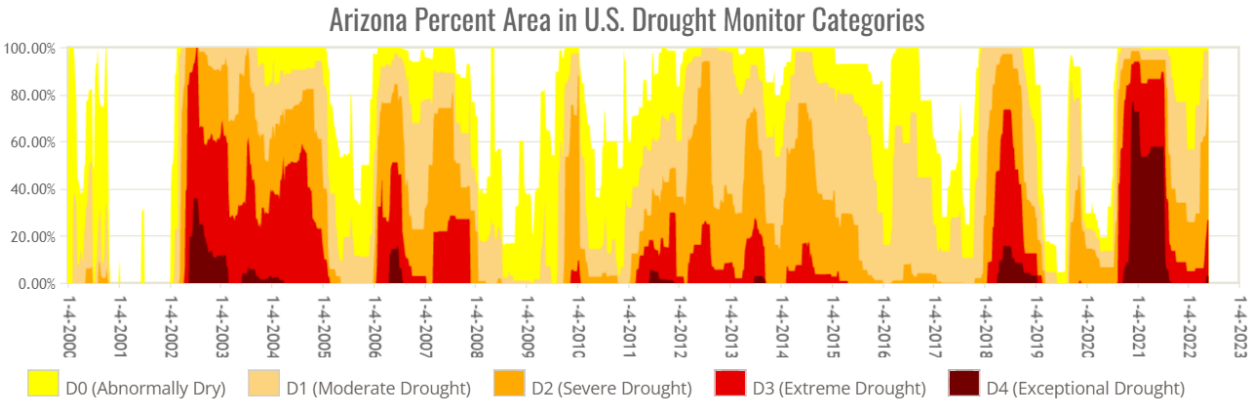

TABLE 3 - Showing drought conditions within Arizona from 2000 – 2022 (Drought Monitor).

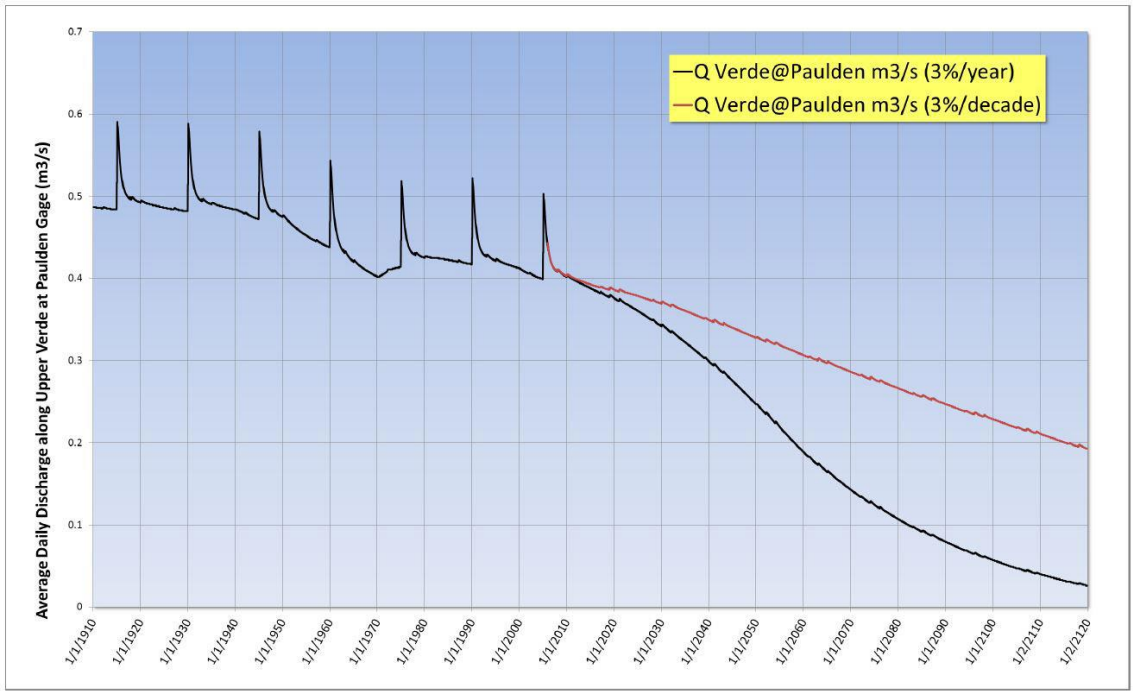

TABLE 4 – showing the historic baseflow discharge of the Upper Verde River from 1910 to

present and predicted from 2023 through 2120 based on 3% per year increases in groundwater pumping, (Source - Review of Potential Impacts of Projected Big Chino Water Ranch and Regional Groundwater Pumping on Upper Verde River Flows, Arizona - Prepared by Robert H. Prucha, PhD, PE, Integrated Hydro Systems, LLC. Golden, Colorado – 2017)

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).

Drought impacts derived from climate change and increasing average temperatures will have a detrimental impact on the Upper Verde River by the reduction of natural recharge into the groundwater systems and spring discharges to the river illustrated by ***Table 5*** below.

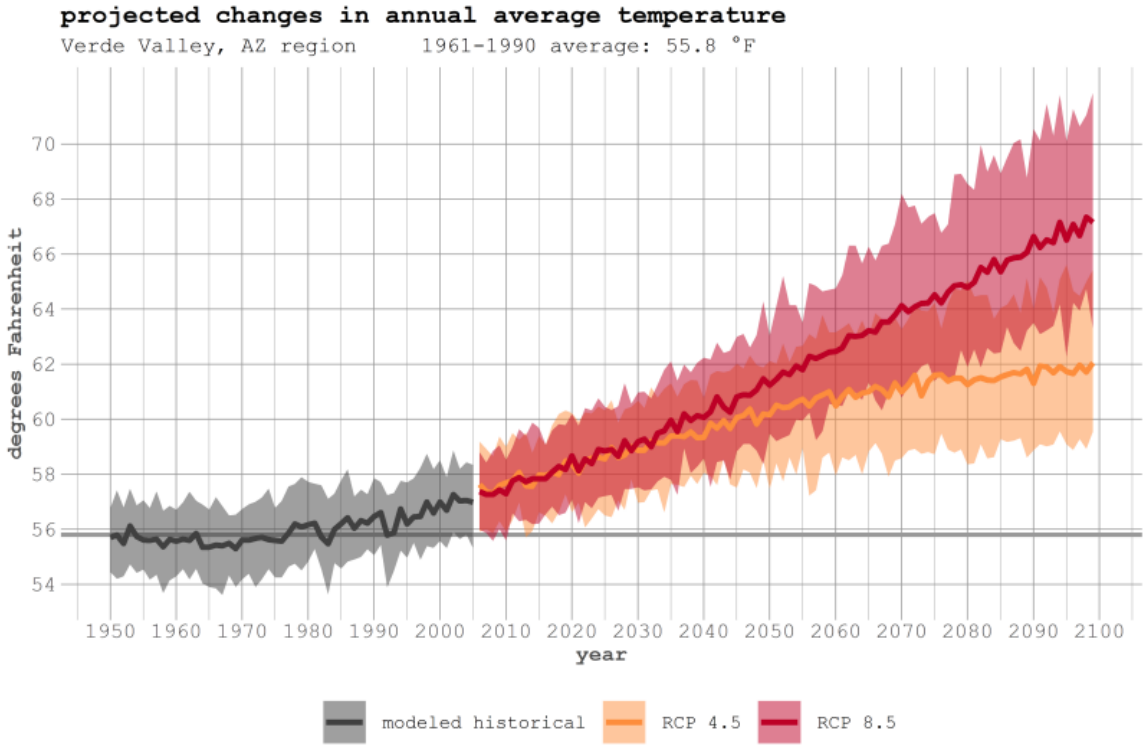

TABLE 5 - Downscaled model projections for the Verde Valley show a range of probable future temperature increases, from 6° F higher than the 1961–1990 average for RCP 4.5 (orange line) to 11° F higher for RCP 8.5 (red line) at the end of this century (Climate Profile for the Verde Valley, Arizona, Climate Assessment for the Southwest (CLIMAS), University of Arizona, May 8, 2020).

Without any progress towards decreasing groundwater demands and increases the percent of water recharged to the aquifer, the baseflow of the Upper Verde River is predicted to decrease over the next 100 years, (See ***Table 6*** below showing existing and predicted water table elevations for 100 years as part of the Town's groundwater physical availability study).

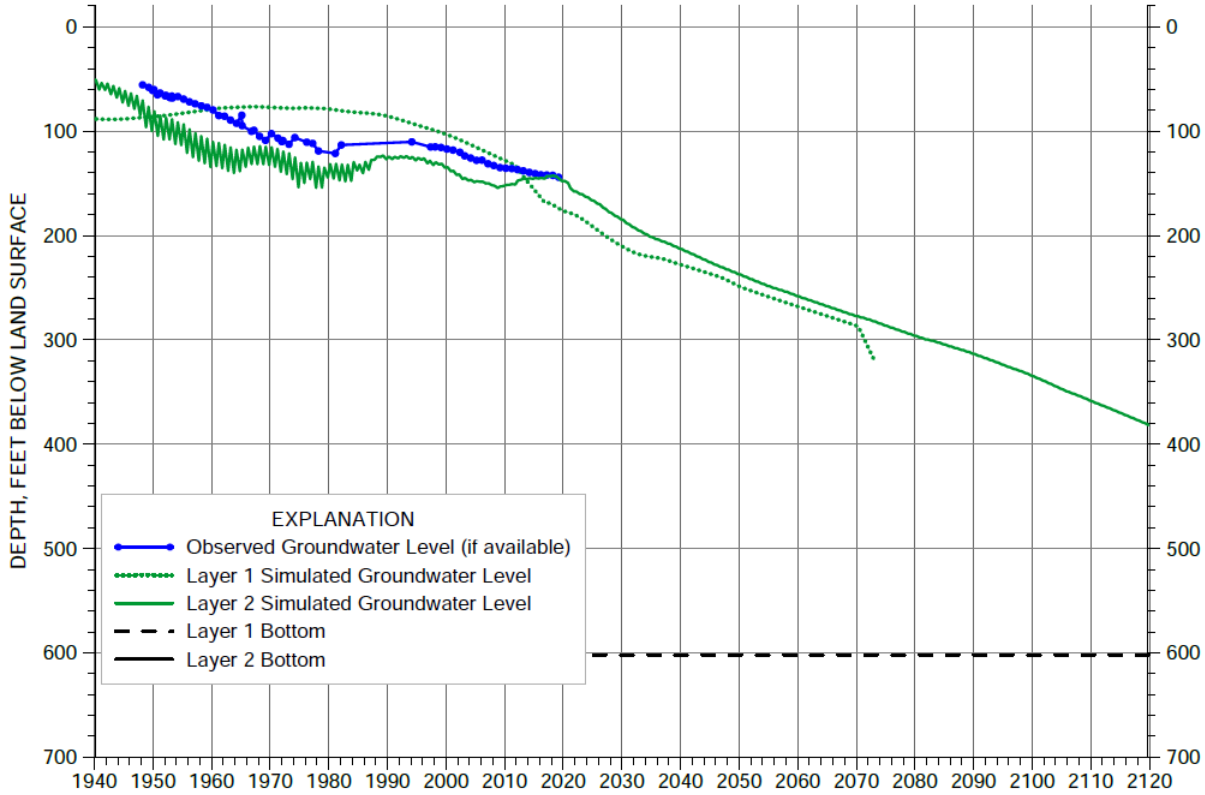

TABLE 6 – Illustrating the historic and predicted depth to the water table below land surface out to the year 2120 (from the Town of Chino Valley's groundwater physical availability determination study, 2022), showing that with no mitigation activities towards water demand management and increased recharge the water table will continue to decline. Without mitigation efforts towards stabilizing the groundwater elevation within Chino Valley, the predicted groundwater declines will have a negative effect upon the baseflows of the Upper Verde River.

E.1.5. Evaluation Criterion E—Project Implementation (10 points)

Describe the implementation plan of the proposed project. Please 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: design, environmental and cultural resources compliance, permitting, construction/installation.
Please see **ATTACHMENT 7** for implementation plan and proposed schedule.

Describe any permits that will be required, along with the process for obtaining such permits.
No permits will be required to perform this project work.

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

No engineering or design work is needed to perform the project work.

Describe any new policies or administrative actions required to implement the project.
A public hearing and public input will be required for the Town Council to consider and decide upon and vote on the proposed new water demand rate study.

E.1.6. Evaluation Criterion F—Nexus to Reclamation (10 points)
Describe the nexus between the proposed project and a Reclamation project or Reclamation activity. Please consider the following:

Does the applicant have a water service, repayment, or O&M contract with Reclamation?
The Town of Chino Valley does not have any contracts with Reclamation nor receives any water through an existing Reclamation-owned project or reclamation-owned third-party water provider.

If the applicant is not a Reclamation contractor, does the applicant receive Reclamation water through a Reclamation contractor or by any other contractual means?
The Town of Chino Valley does not receive any water through a Reclamation contractor.

Will the proposed work benefit a Reclamation project area or activity?
This project will directly benefit baseflows of the Upper Verde River which are part of the watershed of the Salt River Project (SRP) water collection storage and delivery system in the Phoenix Metropolitan area. The SRP system is still currently owned by the USBR.

Is the applicant a Tribe?
The Town of Chino Valley is not a tribal community.

PROJECT BUDGET

Funding Plan and Letters of Commitment

Please identify the sources of the non-Federal cost-share contribution for the project, including:

- *Any monetary contributions by the applicant towards the cost-share requirement and source of funds (e.g., reserve account, tax revenue, and/or assessments).*
  The Town of Chino Valley will contribute both Water & Sewer Enterprise funding (monies collected by ratepayers) and contributing Town staffing hours.

- *Any costs that will be contributed by the applicant.*
  The Town of Chino Valley is proposing to contribute its 50% of the cost share with a combination of **$31,698.50** with Water & Sewer Enterprise funds and the remaining **$12,403.00** to be funded by staff contributions for a total of **$44,101.50**.

- *Any third-party in-kind costs (i.e., goods and services provided by a third party).*
  There will be no third-party contributions towards this project.

- *Any cash requested or received from other non-Federal entities.*
  The Town of Chino Valley has not requested, nor will it receive any funding or monies from other non-federal entities.

- *Any pending funding requests (i.e., grants or loans) that have not yet been approved and explain how the project will be affected if such funding is denied.*
  There are no other funding requests for this project.

In addition, please identify whether the budget proposal includes any project costs that have been or may be incurred prior to award. For each cost, describe:

- *The project expenditure and amount*
  There are no costs that have been incurred prior to the award of this project.

- *The date of cost incurrence*

- *How the expenditure benefits the project*

Budget Proposal

***TABLE 7** – Total Project Cost Summary*

SOURCE	AMOUNT
Costs to be reimbursed with the requested Federal funding	$44,101.50
Costs to be paid by the applicant	$44,101.50
Value of third-party contributions	$0.00
TOTAL PROJECT COST	$88,203.00

***TABLE 8** – Non-Federal and Federal Sources Summary*

FUNDING SOURCES	**AMOUNT**
Non-Federal Entities	
1. Town of Chino Valley – Enterprise Funds	$31,698.50
2. Town of Chino Valley – Staff In-kind	$12,403.00
Non-Federal Subtotal	$44,101.50
Requested Reclamation Funding	$44,101.50
Total Project Budget	$88,203.00

TABLE 9 – Showing the total overall staffing budget to include staff hours, salaries, fringe benefits, travel expenses, and consulting fees.

Budget Item Description	**Computation**		**Quantity Type**	**Total Cost**
	$/Unit	**Quantity**		
Salaries and Wages				
Attorney	$200.00	15	Hours	$3,000.00
Water Advisor	$75.00	60	Hours	$4,500.00
Public Works Dir.	$63.00	15	Hours	$945.00
Utility Manager	$36.00	15	Hours	$540.00
Finance Director	$66.00	10	Hours	$660.00
Finance Staff	$27.00	8	Hours	$216.00
Administration Staff	$26.00	8	Hours	$208.00
Town Manager	$80.00	8	Hours	$640.00
Assistant to Town Man.	$43.00	8	Hours	$344.00
Fringe Benefits				
Public Works Dir.	$22.00	15	Total	$330.00
Utility Manager	$14.00	15	Total	$210.00
Finance Director	$22.00	10	Total	$220.00
Finance Staff	$11.00	8	Total	$88.00

Administration Staff	$12.00	8	Total	$96.00
Town Manager	$24.00	8	Total	$192.00
Assistant to Town Man.	$9.00	8	Total	$72.00
Trips				
Water Advisor	$28.40	5	Trip	$142.00
Consultants	$3,000.00	2	Trip	$6,000.00
Equipment				
				$0.00
Supplies & Materials				
				$0.00
Other				
				$0.00
Consultant				
Consultant - Principal	$220.00	86	Hours	$18,920.00
Consultant - Project Manager	$210.00	112	Hours	$23,520.00
Consultant - Senior Project Analyst	$190.00	144	Hours	$27,360.00
TOTAL DIRECT COSTS				**$88,203.00**
Indirect Costs				
Type of Rate	%	$base		$0.00
TOTAL ESTIMATED PROJECT COSTS				**$88,203.00**

Budget Narrative

The Town of Chino Valley's Finance Director, Joe Duffy, will be the principal project manager. Mark Holmes, P.G., Water Advisor to the Town will be the secondary Town project manager. Dan Jackson, Wildan Consultant, will be the principal consulting project manager. The Town attorney will provide 15 hours towards this project by evaluating alternative rate designs, reviewing the draft and final reports, and managing the public engagement and council meetings. The Town's water advisor will participate in Tasks I-IX of the scope of work above. The Finance Director, Public Works Director, and Utility Manager will participate in most tasks identified above. The Finance Staff and Admin Staff will participate mostly within the data acquisition, assessments, revenue requirements, customer classifications, assist with the Council meetings, and grant reporting. The Town Manager will participate within the kickoff meeting, draft and final report reviews, and council meeting activities. The Assistant to the Town Manager will participate in most tasks assigned above. Staff hours, salaries, and benefits data are above within **Table 9**.

The proposed grant monies received from USBR will be applied towards the $75,800 portion of the professional consultant fees.

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 will not create or negatively impact the 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?*
  The proposed project will not create any negative impacts to Federal threatened or endangered species, or critical habitats.

- *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 Clean Water Act (CWA) jurisdiction surface waters (Upper Verde River) within the project area. The proposed project will not negatively impact the adjacent Upper Verde River, designated as a scenic and wild river and waters of the US, and is intended to help mitigate drought impacted baseflows of this river.

- *When was the water delivery system constructed?*
  The Town's water delivery system was constructed in **2004.**

- *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 proposed project will not negatively impact any irrigation districts or systems.

- *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.*
  The proposed project will not impact any designated historic places or cultural resources.

- *Are there any known archeological sites in the proposed project area?*
  The proposed project will not affect any known or unknown archeological sites.

- *Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?*
  The proposed project will not negatively impact or have a disproportionately high or adverse effect on low-income or minority populations.

- *Will the proposed project limit access to and ceremonial use of Native American sacred sites or result in other impacts on tribal lands?*
  The proposed project will not adversely impact any 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 will not contribute or introduce noxious weeds, non-native, or invasive species.

REQUIRED PERMITS OR APPROVALS

The proposed project will not require any special permits or special approvals/permits as this is not a construction project.

EXISTING DROUGHT CONTINGENCY PLAN

The associated documents are attached as **Attachment 3, 4, and 5**

LETTERS OF SUPPORT AND LETTERS OF PARTNERSHIP

Letters of support from the Nature Conservancy, Citizens Water Advisory Group, the Sierra Club, and the City of Prescott are included in **ATTACHMENT 8.**

OFFICIAL RESOLUTION

Please refer to **ATTACHMENT 9** for the Town of Chino Valley's Council Resolution. The Council Resolution is scheduled for the June 28th, 2022, Council Meeting and will be finalized and submitted on June 29th, 2022. The unapproved resolution is attached for your review prior to the official resolution being submitted later in accordance with Section D.2.2.10 of the grant application.

OVERLAP OR DUPLICATION OF EFFORTS STATEMENT

The Town is a water service provider and provides for rate studies that do not overlap with other entities or projects within the area. These types of projects are unique to and solely

developed by the water provider for their water service area. This proposed project is not in anyway duplicative with other applications for funding for Federal or non-Federal monies.

CONFLICT OF INTEREST DISCLOSURE

Per the Financial Assistance Interior Regulation (FAIR), 2 CFR §1402.112, the Town of Chino Valley does not have any known or existing, actual, or potential conflict of interest at the time of submission.

UNIFORM AUDIT REPORTING STATEMENT

The Town of Chino Valley, EIN 86-0256834, has a Single Audit Report filed with the Federal Audit Clearinghouse Internet Data Entry System for fiscal year ending 06/30/2020.

CERTIFICATION REGARDING LOBBYING

The Town of Chino Valley has not, nor will not used any Federal appropriated funds to any person for influencing or attempting to influence and officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract or the making of any Federal grant per the completed Disclosure of Lobbying Ac.

UNIQUE ENTITY IDENTIFIER

The Town of Chino Valley, Arizona is registered in SAMS

- **CAGE: #5GTX6 | DUNS #002534642**
- **UEI: #MKNEWEXW9EM1**
- **CHINO VALLEY, TOWN OF**

ATTACHMENT 2

Location Map

Map showing the location of Chino Valley (Red Circle) and its proximity to the Upper Verde River (yellow oval).

ATTACHMENT 8
Letters of Support
Citizens Water Advocacy Group

To: Mark Holmes, Town of Chino Valley
From: Citizens Water Advocacy Group
Date: May 11, 2022
RE: RE: WaterSMART Drought Resiliency Proposal, FY 2023, Funding notice R23AS00005.

The Citizens Water Advocacy Group (CWAG) strongly supports the Chino Valley proposal to reduce groundwater pumping by creating improved conservation programs such as rate structures, incentives, and ordinances, and by improving recharge of treated wastewater. This effort is a positive example for the other cities in the Prescott Active Management Area (PrAMA).

CWAG is a local citizens group vigorously advocating for a sustainable water future for the PrAMA and for protection of the upper Verde River. CWAG uses the best available science to educate citizens and to influence governmental decision-making by identifying sensible courses of action.

Our web site (cwagaz.org) contains a full description of our organization, describes our analysis of the current critical groundwater status in the PrAMA and of Verde River base flows, and presents some solutions.

We see two main problems facing sustainable water management: we continue to pump too much groundwater and we have failed to develop a regional plan to reduce the stress on our aquifer and the Verde River. Current trends, amplified by population growth, threaten the flow of the upper Verde River and a long-term sustainable water supply for the Prescott Active Management Area.

Residents of Chino Valley suffer the brunt of the damage to our shared groundwater resource. Data gathered by the Arizona Department of Water Resources (ADWR) since 1985 describes our water reality: the PrAMA has the highest overdraft percentage in the state. Because we pump more than is recharged, the annual loss of groundwater is over 18,000 acre-feet per year (afy) – that's a football field filled 3.5 miles deep. Water levels in the Little Chino Aquifer underlying Chino Valley in the northern part of the PrAMA have fallen over 100 feet. Over 500 family wells on the edges of the aquifer in southern and western Chino Valley are failing.

The base flow of the Verde River - the sole remaining living river in Arizona - declines every year. Del Rio Springs in northern Chino Valley, the historical source for the Verde River, is now less than 10 percent of the original flow. Excessive groundwater pumping is dewatering the Verde River, one

of the most ecologically significant rivers in Arizona, where perennial flow supports a diversity of plants and wildlife.

These problems are a key priority for CWAG.

It is vital to support efforts to protect the groundwater supplying the base flow of the Verde. Groundwater pumping near Del Rio and Verde Springs - the sources of perennial river flow - by residents of the Town of Chino Valley is a significant threat to base flow in the river. That is why CWAG supports this proposed study of groundwater conservation measures. The study proposes to focus on outdoor water use constituting up to half of total groundwater pumping. Landscape water evaporates and cannot be recovered for treatment and recharge by municipal wastewater treatment processes. Reducing landscape water use is the top priority for water conservation to protect our river and our groundwater supply. Prescott has partially addressed landscape water use; no other entity in the PrAMA has considered any solution.

Reducing groundwater pumping is especially important because we are in the midst of the most severe drought in the last 1,200 years, and it shows no signs of improving in the near future. This extraordinary drought makes the river and aquifer even more susceptible to degradation by excessive groundwater pumping. For this reason, drought resiliency is important not only to family water supplies, but also to help sustain the Verde River.

We encourage all water users in the Prescott AMA to adopt additional policies in support of a) long-term supply/demand water resource planning; b) conservation planning; c) modernizing Arizona water law to permit more effective management; and d) new city procedures and codes to require Water Neutral Development. The study proposed by Chino Valley is an essential and valuable first step and we strongly support this effort.

This endorsement is approved by the Board of the Citizens Water Advocacy Group, May 11, 2022.

CWAG • PO Box 13145 • Prescott, AZ 86304 • www.cwagAZ.org • info@cwagAZ.org

Letter of Support – Sierra Club

Sierra Club Yavapai Group
http://arizona.sierraclub.org/Yavapai/

May 11, 2022

Mark Holmes
Town of Chino Valley

RE: WaterSMART Drought Response Program: Drought Resiliency Projects for FY 2023, Funding notice R23AS00005.

Dear Mr. Holmes:

Sierra Club's Yavapai Group and our 800 plus members in western Yavapai County want to express strong support for Chino Valley's grant application to build drought resiliency through improved water management and rate incentives.

Sierra Club's mission is "to explore, enjoy, and protect the wild places of the earth; to practice and promote the responsible use of the earth's ecosystems and resources; and to educate and enlist humanity to protect and restore the quality of the natural and human environments." Sierra Club is committed to protecting public lands and waters so they are available for this and future generations to enjoy and has long advocated for protection of the Verde River, including Wild and Scenic proposals. Our members and supporters enjoy a wide range of recreational activities in the area, including wildlife viewing, hiking, backpacking, camping, and more.

The Verde River is one of the most ecologically significant rivers in Arizona, supporting a diversity of plants and animals and sustaining communities, and is a key priority for the Yavapai Group. We are and have been actively working for over a decade to designate the Upper Verde Wild and Scenic River in order to protect the upper Verde. Prescott National Forest has also determined the upper Verde to be eligible and suitable for Wild and Scenic River designation.

We believe it is vital to support efforts to protect the groundwater that supplies the base flow of the Verde to ensure that its water quality and flows are sustained. Groundwater pumping near Del Rio and Verde Springs - the sources of perennial flow - by residents of the Town of Chino Valley is a significant threat to base flow in the river. That is why Sierra Club supports this proposed study of groundwater conservation measures. The study proposes

to focus on outdoor water use constituting up to half of total groundwater pumping. Landscape water evaporates and cannot be recovered for treatment and recharge by municipal wastewater treatment processes. Landscape water use is the top priority for water conservation to protect our river.

Reducing groundwater pumping is especially important because we aren in the midst of the most severe drought in the last 1,200 years, and it shows no signs of improving in the near future. This extraordinary drought places the river and headwater springs in a precarious condition, making them even more susceptible to degradation by excessive groundwater pumping. For this reason, drought resiliency is important not only to family water supplies, but also to help sustain the Verde River.

Sierra Club supports and encourages your efforts to reduce groundwater pumping by creating improved conservation programs such as rate structures, incentives, and ordinances, and by improving recharge of treated wastewater.

If there are any questions, feel free to contact me.

Gary Beverly, PhD
Chair, Sierra Club Yavapai Group
PO Box 176
Chino Valley, Arizona 86323
gbverde99@gmail.com
928-308-1003

Letter of Support – The Nature Conservancy

May 20, 2022

Ms. Cindy Blackmore
Town of Chino Valley
202 N State Route 89
Chino Valley, AZ 86323

RE: Water Demand Rate Study

Dear Ms. Blackmore:

The Verde River headwaters originates within the northern portion of the Town of Chino Valley. The Verde River is a critical resource for biodiversity, agriculture, recreation, cultural traditions, and municipal uses. The Nature Conservancy has been working for over 40 years to implement projects and policy tools to preserve and protect the Verde River for its diverse stakeholders. Conservation of the Verde River has been a focus of the Arizona Business Unit not only because of its benefits but also because of the tremendous threats it faces from groundwater pumping, climate change, intractable water policy, and inefficient agricultural water use.

As part of our collaborative efforts in the Upper Verde River and Chino Valley, TNC has led a multi-organization stakeholder group, referred to the Upper Verde River Collaborative. The group focuses on protection of the river in its upper stretch (Chino Valley to Clarkdale) and advocates for river protection through education and sustainable public access to the river. The Town of Chino Valley has been a key stakeholder in developing project ideas and partnered with TNC to develop a groundwater modeling tool. The Town's has clearly demonstrated a willingness to engage in solutions oriented long-term planning.

Within northern Arizona and specifically the Prescott Active Management Area (Prescott AMA) there is a very limited and over-drafted sole-source of groundwater that is the only available water supply for Chino Valley. Building drought resiliency requirements is crucial to mitigate these drought impacts. The Town of Chino Valley is proposing to perform a water management rate study whereby it intends to deploy new rate structures that significantly reduce and /or in some cases eliminate the water demand for water consumed outdoors. Currently 50-60% of all water demands are associated with water consumed outdoors within the community. By reducing this water demand component, A higher percent of water will be returned through the existing sewer collection, treatment, and aquifer recharge facilities and increase the percent of water returned into the aquifer system.

Reducing water use is a critical need for rural Arizona communities as they manage limited resources and growing populations. Therefore, TNC strongly supports this proposed project. Please reach out to Kim at kschonek@tnc.org or 928-925-9221.

Sincerely,

Kimberly Schonek

Kimberly Schonek

Verde River Program Director
The Nature Conservancy in Arizona

Letter of Support – City of Prescott, Arizona

CITY OF PRESCOTT
ARIZONA
Everybody's Hometown

Public Works Department

433 N. Virginia Street
Prescott AZ 86301
928-777-1130

June 6, 2022

Ms. Cindy Blackmore
Town Manager
Town of Chino Valley
202 N. State Route 89
Chino Valley, AZ 86323

Dear Ms. Blackmore:

The City of Prescott is pleased to provide a letter of support for the Town of Chino Valley's efforts to seek a USBR WaterSMART Drought Response Program: Drought Resiliency Projects for FY 2023 Grant. The intent to invest time and monies into a water rate study resulting in a tiered rate structure, which encourages greater water efficiency, is complimentary to other water providers in the ADWR Prescott Active Management Area (AMA). The Town of Chino is recognized by ADWR as a small water provider (serving less than 250 AF/year). Until about 2015, the Town typically served below the small provider threshold, but in 2016 and 2017 there was a significant increase. We understand these situations are challenging for a water provider to manage. Later, in 2020, usage returned to 300 AF/year. As the water system's demand increases, conservation efforts by existing and future customers will be needed to assist in the AMA goal of safe yield.

We wish you success in the award of this grant. Please let us know if we can be of any additional assistance.

Sincerely,

C. Ashley Couch

C. Ashley Couch, P.E., CFM
Public Works Director

ATTACHMENT 9
Town of Chino Valley Resolution

RESOLUTION NO. 2022–1213

A RESOLUTION OF THE MAYOR AND COMMON COUNCIL OF THE TOWN OF CHINO VALLEY, ARIZONA, AUTHORIZING THE SUBMISSION OF A GRANT APPLICATION TO THE UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF RECLAMATION FOR THE WATERSMART DROUGHT RESPONSE PROGRAM: DROUGHT RESILIENCY PROJECTS 2023 GRANT PROGRAM; AND AUTHORIZING THE ACCEPTANCE OF ANY RESULTING GRANT AWARD.

WHEREAS, the United States Department of the Interior, Bureau of Reclamation (the "Bureau"), through its grant program entitled "WaterSMART Drought Response Program: Drought Resiliency Projects for Fiscal Year 2023" (the "Program"), provides federal cost-share funds for entities to take a proactive approach to drought through building projects that increase water supply reliability and improve water management; and

WHEREAS, the Town of Chino Valley (the "Town") has identified a need for a Water Demand Rate Study (the "Project") and desires to submit a grant application for funding to support the Project; and

WHEREAS, the total cost of the Project is $88,203, fifty percent of which the Town is required to provide as a local match; and

WHEREAS, the Mayor and Common Council of the Town of Chino Valley desire to authorize (i) the submission of the grant application, (ii) the expenditure of any required local match, and (iii) the acceptance of any resulting grant agreement.

NOW, THEREFORE, BE IT RESOLVED by the Mayor and Common Council of the Town of Chino Valley, Arizona, as follows:

SECTION 1. The recitals above are hereby incorporated as if fully set forth herein.

SECTION 2. The Town is capable of providing the funds and/or in-kind contributions to meet the local cost match requirement.

SECTION 3. The Town Manager, or the Town Manager's designee, and the Finance Department Director are hereby authorized to (i) apply for grant funding through the Program and, if awarded, (ii) accept the resulting grant award in an amount not to exceed $41,101.50, (iii) execute all agreements and documents of compliance related to the grant on behalf of the Town, and (iv) adjust the revenue and expenditure budgets in the FY23/24 Budget.

SECTION 4. The Mayor, the Town Manager, the Town Clerk, and the Town Attorney are hereby authorized and directed to take such actions and execute such documents as are necessary to carry out the purpose and intent of this resolution.

(Signatures on the following page)

Delivering water and power™

Chuck Podolak, Director
Water Rights & Contracts
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P: (602) 236-5690
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June 13, 2022

Ms. Cindy Blackmore
Town Manager
Town of Chino Valley
202 N. State Route 89
Chino Valley, AZ 86323

Re: Water Demand Rate Study

Dear Ms. Blackmore:

The Salt River Project (SRP) would like to offer its support for the Town of Chino Valley (Town) to seek a US Bureau of Reclamation WaterSMART Drought Response Program – Drought Resiliency Projects grant for FY 2023. We hope that the Town's proposed water demand rate study results in pricing policies and water efficiency practices that will reduce the water withdrawn from the Little Chino Aquifer. This aquifer is the headwaters of the Verde River which is under threat due to increased groundwater pumping and climate change.

The Town of Chino Valley is entirely dependent on water from the Little Chino Aquifer to supply its municipal water needs. Given the increased water depletions, many years of drought, and the uncertainty regarding the legal availability of this water resource, rate setting studies and policy changes are the kinds of proactive steps the Town can take to reduce the impacts on the flows of the Verde River.

As we have seen with the Phoenix-Metro cities, the implementation of tiered water rates is an effective tool in reducing water uses, particularly outdoors. We are pleased to offer our support to the Town for this grant as they seek to address their water challenges through proactive water management solutions.

Sincerely,

Chuck Podolak
Director – Water Rights & Contracts
Salt River Project