Coldwater Canyon Water Company Upgrade 425 Manual Read Meters to Advanced Meter Reading (AMR) Technology

Prepared For:

U.S. Department of the Interior - Bureau of Reclamation
WaterSMART Small-Scale Water Efficiency Projects for Fiscal Year 2024 and Fiscal Year 2025
Funding Opportunity Number: R24AS00059
Application Period 2
Category A

Applicant:

Coldwater Canyon Water Company
1846 E. Innovation Park Dr., STE 100
Oro Valley, AZ 85755

Project Manager:

Harold W. Thomas Jr.
P.O. Box 374
Sierra Vista, AZ 85636-0374
hwthomasjr@outlook.com
(520) 346-1469

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1.1 Executive Summary

Date: July 9, 2024
Applicant: Coldwater Canyon Water Company (CWCWC)
City, County, State: Black Canyon City, Yavapai County, Arizona
Project: Upgrade 425 Manual Read Meters to Advanced Meter Reading (AMR) Technology
Category Applicant: A
Grant Funding Request: $91,786
Non-Federal Matching Funds: $91,786
Total Project Costs: $183,572
Est. Completion Date: December 31, 2026
Est. Duration from contract award date: Approximately 12 months
Federal Facility Denotation: The Project is not located on a federal facility
Project Partner: None

Coldwater Canyon Water Company (CWCWC) is committed to aggressively pursuing water-use efficiency by embracing proven methods and technologies to achieve that goal. CWCWC proposes upgrading 425 manual-read meters to advanced meter reading (AMR) technology to reduce non-revenue water through more accurate water use measurement and accounting, improve leak detection and reduction, and increase water conservation. CWCWC will replace 147 outdated, under-registering manual-read meters with new Master Meter AMR meters and registers and 278 manual-read meter registers with new Master Meter AMR registers.

Thirty-five percent of the CWCWC 363 5/8" x 3/4" customer water meters are substantially over ten years old. In 2022, the CWCWC experienced a water loss of 11.34 percent, which exceeds the ACC staff-recommended water loss level of no greater than 10.0 percent. With the replacement of the outdated, under-registering meters, CWCWC will see the accuracy of water accounting increase significantly both for an increase in billed water and, very likely, a decrease in reported lost and unaccounted water. The goal is to leverage science and technology to increase the efficiency of the meter reading process, accurately account for metered water use, and reduce lost and unaccounted water, thereby improving water supply reliability and using our water resources more efficiently. The new meters will also help customers monitor their water usage better and allow CWCWC to notify them if they significantly increase their water usage.

1.2 Background

Coldwater Canyon Water Company (CWCWC) will substantially advance the implementation of AMR by upgrading 425 manual-read meters to advanced meter reading (AMR) technology. This will reduce non-revenue water through more accurate water use measurement and accounting, improve leak detection and reduction, and increase water conservation. CWCWC will replace 147 outdated, under-registering manual-read meters with new Master Meter AMR meters and registers and 278 manual-read meter registers with new Master Meter AMR registers.

The Arizona Corporation Commission (ACC) is the regulatory authority with jurisdiction over Arizona's public service corporations. A private water company is one form of public service corporation regulated by the ACC. CWCWC, a subsidiary of Community Water of America Inc. (CWA), is a private water company regulated by the ACC as a Class D water utility that provides potable water service to three separate service areas (Coldwater Canyon 1, Coldwater Canyon 2, and Coldwater Canyon 3), totaling approximately 397 customer connections in Black Canyon City, Yavapai County, Arizona.

CWCWC can only provide water service to customers located within an area included in or contiguous to an area defined as a Certificate of Convenience and Necessity (CC&N). It may only charge water rates that the ACC approves. A CC&N is an area with a well-defined legal description that could be compared to a city limit. The ACC reviews any requests for establishing or expanding an ACC-regulated utility's CC&N, with the determining factor being the public interest. The ACC evaluates the utility's capabilities and qualifications for providing water service to the requested service area before granting or denying the utility's request to establish or expand its CC&N. CWCWC's original CC&N was given by the ACC for Coldwater Canyon 1 in 1977; Coldwater Canyon 2 in 1993; and Coldwater Canyon 3 in 2008. The ACC's scope of regulation of water utilities does not end with rates or CC&Ns but also includes financing, reporting, and the terms and conditions for water service provision.

In 2022, CWCWC had 397 active metered customers, all single-family accounts. CWCWC pumped 39.7 million gallons of groundwater and delivered 35.2 million gallons to metered customers. Water loss (the difference between water pumped and recorded water sales) was 11.34% (Table 1).

Table 1: Annual Water usage, Water Sold, and Water Losses for 2022

	Active Meters	Water Pumped	Water Sold	Water Loss	Water Loss
Year	**(Total EOY)**	**(Gallons/Yr.)**	**(Gallons/Yr.)**	**(Gallons/Yr.)**	**(Annual %)**
2022	397	39,694,188	35,194,120	4,500,068	11.34%

Due to funding constraints and other current needs, CWCWC has been unable to focus its limited resources on replacing outdated meters, which are likely not accurately measuring

water sold to customers. Outdated meters are known to read slowly and can substantially under record customer use. Without an accurate accounting for customer water usage system-wide, CWCWC cannot determine the water loss in the water system. Table 2 summarizes the size, quantity, throughput, and age of all customer water meters in the system in 2022.

Table 2: Customer Water Meters in 2022

Size (inches)	Quantity	Percent over 1,000,000 gallons	Percent over Ten years old
5/8 x 3/4	363	0%	35%
1	28	5%	45%
1.5	4	8%	35%
2	2	80%	50%
Total	397		

Thirty-five percent of the CWCWC 363 5/8" x 3/4" customer water meters are substantially over ten years old. In 2022, the CWCWC experienced a water loss of 11.34 percent, which exceeds the ACC staff-recommended water loss level of no greater than 10.0 percent. CWCWC has started a system-wide meter replacement program; 147 outdated, under-registering manual-read meters will be replaced with new Master Meter AMR meters and registers; and 278 manual-read meter registers will be replaced with new Master Meter AMR registers to implement the program entirely. This project will upgrade 425 manual-read meters to AMR technology.

1.3 Project Location

Coldwater Canyon 1's CC&N, as shown in Figure 1, Coldwater Canyon 2's CC&N, as shown in Figure 2, and Coldwater Canyon 3's CC&N, as shown in Figure 3, serve a portion of Black Canyon City, Arizona. The three CC&Ns are adjacent, separated by Interstate 17 (I-17) and the Agua Fria River. Black Canyon City is an unincorporated community and a census-designated place (CDP) in southern Yavapai County. It is at an elevation of 1,975 feet. It is 22 miles north of Phoenix. Black Canyon City is served by I-17, which bisects the city. I-17 is the main north-south freeway between Phoenix and Flagstaff. The Agua Fria River runs through the center of Black Canyon City and empties into Lake Pleasant to the southwest. According to the United States Census Bureau, the Black Canyon City CDP has an area of 20.0 square miles. As of the 2020 census, Black Canyon City had 2,677 residents, down from 2,837 as of 2010. From 2020, it has experienced a continued decline to 2,254 in 2024. That said, we expect this trend to reverse, and the population will increase due to the rapid growth of Phoenix northward. Black Canyon City was first settled in the 1870s.

Figure 1: Coldwater Canyon 1 CC&N Boundaries

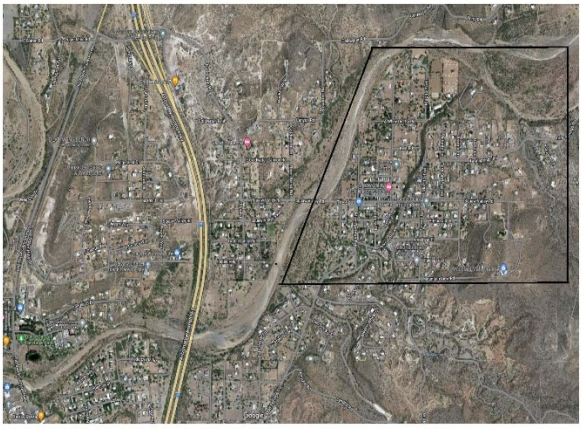

Figure 2: Coldwater Canyon 2 CC&N Boundaries

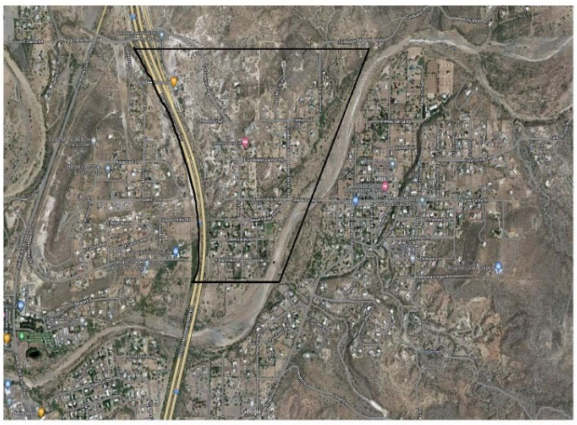

Figure 3: Coldwater Canyon 3 CC&N Boundaries

1.4 Technical Project Description

To accurately capture all water usage in the distribution system, meters are the primary tool for measuring water delivery to each property with water service. To accurately measure water usage for a property, meters should be replaced due to the amount of water flowing through the meters and age. Meters in the CWCWC service area are mostly 5/8" x 3/4" and substantially over ten years old.

As part of CWCWC's monthly meter reading and billing routine, each meter must be manually read, and the reads are then manually entered into our billing system. This is an incredibly time-intensive process and can result in human errors. With the new technology being used since the 1990s, there is a proven track record that radio read and fixed base systems are more accurate and a time-saving tool, reducing costs. AMR frees up limited operators' resources to work on the systems' regular repairs and maintenance needs. With increased accuracy and efficient reading and recording technology, the system will see decreased water loss as water usage can be better measured. Further, with accurate water loss data, operators can develop a program to locate and address system leakage.

As part of the water system improvements and joining the 20th century with technology, moving CWCWC to an automated meter reading and billing system is the next step. With radio read or fixed base meter reading systems being used nationwide, there is a track record for reducing manual labor in physically reading each meter and sending the reads to a billing office. With radio read and fixed base systems, the reading is automated, and system software can enter the data into the billing system. The change requires replacing existing meters with meters incorporating radio technology, a software purchase, an annual license, and configuration for communicating information between the meter reading and billing systems.

The reason for the water meter replacement program is three-fold: First, American Water Works Association (AWWA) best practices require meters to be changed out every ten to twelve years or at a threshold of one to two million gallons of use. Second, ACC staff recommend that water loss not exceed 10 percent. Third, the Arizona Department of Water Resources (ADWR) requires water systems to report the amount of water lost or unaccounted for throughout the system. Replacing the meters regularly meets CWCWC, the ACC, and AWWA goals and is fundamental to achieving improved efficiency and better overall water management and conservation goals. Replacing outdated meters, which are likely under-reporting customer usage, CWCWC will be able to measure water loss more accurately to determine how much water is lost due to potential system leakage. With more accurate and timelier meter read data and assessment of water loss due to system leakage, CWCWC can develop a program to make further distribution system improvements to reduce water loss and groundwater production and improve the sustainability and drought resiliency of CWCWC's water supply.

The scope of work is to replace 147 5/8" x 3/4" manual read meters with new Master Meter Bottom Load Multi-Jet (BLMJ) residential cold-water meters equipped with Master Meter's 3G Mobile AMR registers and 278 manual-read meter registers with Master Meter's 3G Mobile AMR registers for reading through radio read, thereby reducing manual labor, increasing efficiencies, leak detection, and providing accurate water loss data which is needed to develop a water loss reduction program. In 147 cases, this will be done by replacing the old meter with a new radio-read AMR meter, and in 278 cases, by removing the existing manual-read register and replacing it with a new radio-read AMR register. Table 3 shows the total cost, estimated at $183,572, based on a preliminary quote from a third party (**Attachment C**).

Table 3: AMR Technology Upgrade Cost Estimates

5/8" x 3/4" Meters, Registers, & Installation (147)	$ 73,659
Registers and Installation (278)	$109,913
Total Cost	**$183,572**

1.5 Evaluation Criteria

1.5.1 Evaluation Criterion A – Project Benefits

The January 2022 report titled "Increasing consumer benefits & engagement in AMI-based conservation programs," prepared for the American Water Works Association by The Behavioralist, found that credible water savings associated with AMI-based metering technology can be as much as 10%.

CWCWC's annual groundwater pumping in 2022 is 39,694,188 gallons. Annual Lost & Unaccounted for Water (L&U) in 2022 is 11.34%, 4,500,068 gallons or 17.42 acre-feet. Based on this projection, 10% of annual groundwater pumping is 4,006,639 gallons if all 397 meters were replaced. The conversion of manual read meters to AMR **is estimated to produce a potential water savings of 4,006,639 gallons times 100.0% of meters replaced for an adjusted annual water savings of 4,006,639 gallons or 12.30 acre-feet**, based on improved leak/break detection paired with enhanced customer notifications and quick repairs. More detailed information regarding the rationale behind water savings estimates is included below.

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

The AMR meters for this project use advanced technology and will better manage the CWCWC groundwater supply and provide more accurate readings for proper accountability of customer water usage. The average age of meters in CWCWC's system is substantially over ten years old, with our oldest meters in place since the water system's inception around 1977. By replacing CWCWC's outdated and under-registering water meters, it is anticipated that CWCWC will likely reduce reported water loss by simply recording and billing more accurately for customers' water

usage. With accurate water loss information, CWCWC will be able to develop a water loss reduction program to locate and address system leakage and reduce unnecessary water pumping, lowering power cost, system wear and tear, and, importantly, reducing stress on the groundwater basin, improving drought resiliency in the region. Finally, AMR meters incorporate alarms that notify the company of leaks on the customer side of the meter and data logging that records up to six months of customer usage, which can be used to help identify and address unusually high customer usage and potential leaks. A tool that will allow us to match better pumping to usage and reduce groundwater pumping for our customers and other groundwater users in the basin.

With a water loss reduction program, CWCWC can reduce unaccounted-for water, thereby reducing groundwater pumping and pressure on the groundwater basin, which local communities rely on. This will positively impact water management in the area and sustain water supplies to other potentially affected interests reliant on the groundwater basin. By better managing the groundwater basin through accounting accuracy, reduced pumping will also reduce the amount of electricity and extend well and pump life. Additionally, water customers will be billed accurately for their water usage, encouraging conservation and contributing to the CWCWC system's financial stability. The project will benefit current and future water customers in the CWCWC CC&Ns and neighboring communities in our geographic area that rely on water from the groundwater basin.

Water savings will be achieved by replacing outdated, under-registering, manual-read meters with new Master Meter BLMJ residential cold-water meters (Attachment D) equipped with Master Meter's 3G Mobile AMR registers (Attachment E), which provide fixed network-like performance without the infrastructure or cost.

CWCWC will benefit from the Master Meter 3G Mobile Drive-By AMR platform by (**Attachment F**):

- Gaining protection against theft, leaks, and tampering.
- System-wide meter data for precision, accurate water accountability, and analytics.
- Detailed snapshot of consumption behavior and verification of leaks and flow anomalies. Empowering conservation and accountability.
- Minute-by-minute flow analysis. Optimize revenue, reduce wear, and record every drop.
- Macro leak containment through zonal balancing and district meter areas and zones.
- Data is pushed back to headquarters in real-time for timely usage and analysis.
- Advanced in-field data collection and diagnostics.

A review of AMR case studies focused on those that addressed leak detection and reduced L&U water. Case studies link the use of AMR, its availability to detect water leaks, the collection of water consumption data, and the behavioral impacts derived from comparative water consumption analytics to quantifiable water savings.

Results from the City of Smyrna, Georgia, "The City of Smyrna, GA Boosts Revenue By $2.6M Over 9 Years Using Master Meter's Multi-Jet Technology," as presented in Attachment G, were used to help support this project's water savings analysis. The city has 14,500 metered connections. Meters were read manually. The inaccurate aging meters resulted in measured water loss from unregistered water use. The City's goal was to reduce lost revenue caused by inaccurate meters and minimize water loss through leak detection and engagement with the customer. The city purchased Master Meter's BLMJ meters with 3G AMR Drive-By Radios to replace the existing water meters. Combining new, more accurate meters and electronic reads that eliminate human error resulted in increased revenue. And the new 3G registers added functionality, including alerts for possible theft or tampering. Over nine years, the city reported a $2,606,035 increase in billable water usage or an increase of $289,559 per year. AMR helped the city identify system and customer water leaks and reduce water loss. Another outcome of implementing AMR was that the city could reduce the number of meter readers, vehicles, and associated costs by 50 percent.

Actual water savings will be verified by comparing historical water consumption data from the CWCWC's existing accounts to water usage after the implementation of AMR. Post-project consumption data should include an entire one-year period after project completion to allow a meaningful comparison against the pre-project consumption data set, ensuring the most accurate and reliable results.

Energy savings estimates associated with reduced water use originate from a projected reduction in groundwater pumping. **This project is estimated to result in quantifiable annual energy savings of 2,197.27 kWh.**

Annual energy use for pumping groundwater in 2022 was collected from CWCWC's utility bills. CWCWC used 21,762 kWh to pump 121.82 acre-feet of groundwater in 2022, or 178.64 kWh/AF. **(Attachment B, Page 11.)** Avoided energy demand resulting from projected annual water savings was determined, as shown in Table 4 below.

Table 4: Project Avoided Energy Demand Resulting From Water Saving Estimates

Projected Annual Groundwater savings	12.30 AF
Power for Pumping in 2022	178.64 kWh/AF
TOTAL Energy Savings	**2,197.27 kWh**

CWCWC spends approximately 12 hours each month driving through the system to manually read each meter, including rereading misread meters and verifying high meter reads. When accounting for training, holidays, vacation, and sick time, the time to manually read meters is more than a third of a full-time equivalent (FTE) work week per month or approximately equivalent to one month of an FTE. With the drive-by radio read AMR meters, CWCWC will

reduce driving time by 50 percent, thus reducing carbon emissions and providing labor savings. By accurately calculating water at customer meters, CWCWC will be more precise in collecting water loss data, pinpointing other areas where water loss occurs, and working towards making the necessary repairs and improvements within the distribution system to lower water loss. This technology will also allow CWCWC customers to analyze their water usage to address customer-related leakage and conserve water.

The EPA's GHG Equivalencies Calculator was utilized to calculate the amount of carbon dioxide emitted per gallon of motor gasoline burned, and information can be found here: https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator

Reducing water use reduces the energy demand to pump and convey groundwater (embedded energy). The EPA's GHG Equivalencies Calculator calculated the carbon dioxide emitted per kilowatt hour associated with embedded energy in pumped water. **Based on the calculator, the reduction in vehicle miles and water consumed is expected to translate to avoiding GHG emissions of 1.6 MT CO2e.** See Table 5.

Table 5: EPA GHG Equivalencies Calculator
GHG Emissions Avoided

Source	Savings	MT CO2e Calculator Value
Embedded energy in water	2,197.27 kWh year	1.5
Reduced gallons of fuel	11 gallons per year	0.1
TOTAL MT CO2e:		**1.6**

Will the proposed project increase collaboration and information sharing among regional water managers? Please explain.

If successful, the CWCWC plans to share this information with any other small water systems statewide that are struggling with high non-revenue or lost and unaccounted water numbers and meter reading inefficiencies and wish to equip themselves with the information needed to apply for federal grant opportunities. We will also share this information with the community and neighboring small water providers in Yavapai County.

Any anticipated positive impacts/benefits to local sectors and economies (e.g., agriculture, environment, recreation, tourism)

The median age of residents in Black Canyon City is 60.4, and the median household income is $48,468. Approximately one-third of all adults residing in the city are seniors and primarily have fixed incomes. The overall poverty rate is 22.38%. CWCWC is a private water company funded by user water rates; the reliability and financial viability of the system are crucial to sustaining and growing the area. Rate increases significantly burden many customers in CWCWC's economically depressed area. Realizing savings in operational efficiencies and

water production from meter conversion to radio read technology will benefit CWCWC's customers by allowing savings to be redirected to other investments in CWCWC's infrastructure to further improve system performance and reliability.

As noted in the Bureau of Reclamation's Overview of Disadvantaged Communities and Native American Tribes in the Santa Ana River Watershed, residents in severely disadvantaged or underserved communities are often disproportionally impacted by high infrastructure costs, poor water quality, and failing septic systems. CWCWC wants to ensure that all community members, especially those with fewer resources, have access to technologies that save money and preserve precious water resources.

The extent to which the project will complement work in coordination with NRCS in the area (e.g., with a direct connection to the district's water supply).

It is estimated that by replacing outdated water meters, CWCWC will likely reduce lost, unaccounted, or non-revenue water through improved efficiency and better water management.

Describe any on-farm efficiency work currently being completed or anticipated to be completed using NRCS assistance through EQIP or other programs.

No on-farm efficiency work is being completed using NRCS assistance.

1.5.2 Evaluation Criterion B—Planning Efforts Supporting the Project

By its Asset Management Plan, CWCWC approved its current fiscal year 2024 budget with $100,000 allotted to system operations, maintenance, and repairs and an additional $75,000 - $100,000 for improvement projects. Most of the funds for improvement projects will be directed to upgrades to wells, water storage facilities, and the distribution system to improve and maintain system reliability. A portion of the budget is designated for the meter replacement project. Even with limited funds in a small system, the company management has identified the importance of this project as a priority.

Without the grant, the meter replacement project will need to be funded over up to five years. The receipt of this grant will allow this project to begin in 2024 and become operational within twelve months; thus, the benefits to the system, the users, and the aquifer will be realized earlier. The CWCWC is committed to meeting the objective of this Reclamation funding opportunity by leveraging funds and resources to complete the work and evaluate the results. This project will allow us to better engage our customers in actively managing their use and quickly identify and address leaks.

Additionally, the Bureau of Reclamation's Colorado River Basin Water Supply and Demand Study reported that a best management practice for municipal and industrial water conservation is "meter retrofits." This AMR project is a meter retrofit program. Information

on the study can be found here:
https://www.usbr.gov/lc/region/programs/crbstudy/finalreport/studyrpt.html

1.5.3 Evaluation Criterion C—Implementation and Results

CWCWC is the singular entity implementing this project, located entirely within CWCWC's CC&N, and ready to proceed according to the schedule provided in this proposal. CWCWC adopted Resolution 2024-06-28 authorizing the application to the U.S. Department of the Interior's WaterSMART Program for a grant to fund the replacement of existing individual user water meters with AMR (**Attachment A**). Again, without grant funding, this project would have an implementation timeline of up to five years. Receipt of grant funding would move the entire meter replacement project up for completion in 2025. CWCWC does not anticipate that permits will be required as all meters will be installed in place of existing system water meters. The CWCWC management and operations or contract staff will manage and execute all project-related approvals promptly and efficiently. The capability to purchase meters and equipment is established through the CWCWC's company policies for procurement and contracts to provide the project's equipment, software, hardware, programming, and installation services. Procurement activity and site work will proceed according to the schedule below. No engineering work is necessary. There are no environmental compliance costs associated with this project.

PROJECT SCHEDULE / MILESTONES (Milestones are based on days after the Grant Award)

Meters Installed by Contractor

1. Procure Radio Read AMR meters & meter installation contracts:	90 Days
2. Meter & Register Installation by Contractor:	180 Days
3. Completion of Project:	90 Days

1.5.4 Evaluation Criterion D—Nexus to Reclamation

There is no Reclamation project, facility, or activity with Coldwater Canyon 1, Coldwater Canyon 2, or Coldwater Canyon 3. Coldwater Canyon 1, Coldwater Canyon 2, and Coldwater Canyon 3 are not in the same basin as a Reclamation project, facility, or activity. Coldwater Canyon 1, Coldwater Canyon 2, and Coldwater Canyon 3 do not have a water service, repayment, or O&M contract with Reclamation and do not receive Reclamation water through a Reclamation contractor or any other means.

Reclamation and the U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) have collaborated to align program resources in areas of the Western United States where their mission areas overlap (17 Western States), to improve the impact of the agencies' respective drought resiliency and water efficiency investments. This project aligns

with those goals and will enhance drought resiliency and water efficiency in an aquifer that intensely supports commercial and residential activities.

CWCWC's meter replacement project supports the Reclamation priorities detailed below and elsewhere in this application. This project is an innovative application of existing science/technology. With the installation of this technology, CWCWC will be able to account for metered water use accurately. This technology enables CWCWC to manage its water by aligning production with accurate metered use and directing loss and unaccounted-for water efforts to other areas of infrastructure and system management, such as leaks, flushing, etc. CWCWC sees this technology as a best management practice over the region's water resources.

CWCWC knows that regional collaboration is essential in times of drought. CWCWC shares the aquifer with private well owners and commercial users. By converting outdated meters to AMR, CWCWC demonstrates to any potentially affected interests that CWCWC collects and reports accurate data to best manage the shared basin. CWCWC reports its annual water use through ADWR and the ACC, and most prominent water providers look at what their neighbors report to the State. It is essential that CWCWC's neighbors, State and Local government, and customers feel confident that the company is a good steward of its natural resources by accurately reporting water use, billing data, and water loss.

As a small public water system operating in an economically depressed area, CWCWC faces significant challenges in making timely infrastructure improvements and adopting advanced water management technologies. However, with the support of collaboration and funding from public sources, we can overcome these challenges. Considering the ongoing drought conditions and funding restrictions, we are actively seeking grant opportunities to achieve our water efficiency goals in a fiscally responsible and timely manner.

1.5.5 Evaluation Criterion E—Presidential and D.O.I. Priorities

Surface water and groundwater throughout the region face constant tension as demands for water from increasingly strained sources continue to grow. ADWR's Interactive Drought Dashboard (Drought Data Dashboard | Arizona Department of Water Resources (azwater.gov)) reports that on average, from the year 2000 to present, 20.89% of Yavapai County has been Abnormally Dry, 23.26% has been in Moderate Drought, 19.45% has been in Severe Drought, 11.33% has been in Extreme Drought, and 2.95% has been in Exceptional Drought.

With Yavapai County under drought conditions, reduced stream flows in the Agua Fria River, reduced natural recharge of the groundwater basins, and declining groundwater levels, tensions are increasing (Widening Interstate 17 could spell trouble for Black Canyon City's water supply (azcentral.com)). As the aquifer is drawn down, wells will be deepened, the cost to pump groundwater will increase, water quality will degrade, land subsidence issues may surface, and the area will not have enough supply to meet demand. Every gallon of water and watt of energy saved relieves pressure on already strained supplies. The conserved water and energy will remain

available in the system to benefit multiple residential, commercial, agricultural, industrial, and recreational sectors.

As stated before, embedded energy avoidance because of decreased demand for water will promote greater resource sustainability. Reduced energy use will reduce strain on the power grid. AMR technology will significantly reduce the time and cost of collecting monthly meter readings, reducing fossil fuel consumption and contributing to sustainability. Enhanced access to water consumption data and leak detection will promote better water management, promote water-efficient behaviors, and enable faster repair of leaks and breaks.

Please use the White House Council on Environmental Quality's Climate and Economic Justice Screening Tool to identify any disadvantaged communities that will benefit from your project. Please include a map of the service area indicating which sections are disadvantaged communities as classified on the Climate and Economic Justice Screening Tool, https://screeningtool.geoplatform.gov/.

Coldwater Canyon 1 **(as shown in Figure 1) and Coldwater Canyon 2 (Figure 2)** lie within Census Tract 04045001401 of Yavapai County, Arizona. The White House Council on Environmental Quality's Climate and Economic Justice Screening Tool identifies the area served by Coldwater Canyon 1 and 2 as a disadvantaged community. It is disadvantaged because it meets more than one burden threshold AND the associated socioeconomic threshold. They are:

Burdens	**Percentile**	**Threshold**
Climate Change:		
Expected building loss rate	93rd	Above 90th percentile.
Projected wildfire risk	94th	Above 90th percentile.
Low-income	77th	Above 65th percentile.
Energy:		
Low-income	77th	Above 65th percentile.
Health:		
Heart disease	95th	Above 90th percentile.
Low-income	77th	Above 65th percentile.
Housing:		
Low-income	77th	Above 65th percentile.
Legacy Pollution:		
Low-income	77th	Above 65th percentile.
Transportation:		
Low-income	77th	Above 65th percentile.
Water and Wastewater:		
Low-income	77th	Above 65th percentile.
Workforce Development:		
High school education	11%	Above 10%.

Coldwater Canyon 3 **(as shown in Figure 3)** lies within Census Tract 04045001402 of Yavapai County, Arizona. The White House Council on Environmental Quality's Climate and Economic Justice Screening Tool identifies the area served by Coldwater Canyon 3 as a disadvantaged community. It is disadvantaged because it meets more than one burden threshold AND the associated socioeconomic threshold. They are:

Burdens	**Percentile**	**Threshold**
Climate Change:		
Expected building loss rate	96th	Above 90th percentile.
Projected wildfire risk	90th	Above 90th percentile.
Low-income	78th	Above 65th percentile.
Energy:		
Energy cost	92nd	Above 90th percentile.
Low-income	78th	Above 65th percentile.
Health:		
Heart disease	98th	Above 90th percentile.
Low-income	78th	Above 65th percentile.
Housing:		
Low-income	78th	Above 65th percentile.
Legacy Pollution:		
Low-income	78th	Above 65th percentile.
Transportation:		
Transportation barriers	97th	Above 90th percentile.
Low-income	78th	Above 65th percentile.
Water and Wastewater:		
Low-income	78th	Above 65th percentile.
Workforce Development:	No thresholds exceeded.	

Tribal Benefits:

This Project does not directly serve or benefit a Tribe.

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

Every gallon of water and watt of energy saved relieves pressure on already strained supplies. This project is estimated to reduce water use by 12.3 acre-feet a year, annual energy use by 2,197.27 kWh, and GHG emissions by 1.6 MT CO2e. The conserved water and energy will remain available in the system to benefit multiple residential, commercial, agricultural, industrial, and recreational sectors.

Will the project benefit from a larger initiative to address sustainability?

Surface water and groundwater throughout the region face constant tension as demands for water from increasingly strained sources continue to grow. With 67% of Arizona under extreme drought conditions and declining groundwater levels throughout the State, tensions are increasing. This project helps decrease groundwater demands.

2 Project Budget

2.1 Funding Plan

CWCWC will provide the non-Reclamation share of the Project costs through its annual budget. The cost breakdown is shown in the table below. No additional funding commitments have been pursued for this project's scope.

FUNDING SOURCE	% OF PROJECT	FUNDING AMOUNT
Non-Federal Entities		
Coldwater Canyon Water Company	50%	$ 91,786
Non-Federal Subtotal:	50%	$ 91,786
Other Federal Entities		
N/A	0%	
Other Federal Subtotal:	0%	
Requested Reclamation Funding:	50%	$ 91,786
TOTAL PROJECT FUNDING:	100%	$183,572

2.2 Budget Proposal

The proposed budget breakdown by funding source for the Project is provided in this table.

	AMOUNT
Costs to be reimbursed with Reclamation funding	$ 91,786
Costs to be paid by the applicant	$ 91,786
Value of third-party contributions	$0
TOTAL PROJECT COST:	$183,572

The proposed budget for the Project is provided in this table.

Phase II AMR Water Conservation Management Plan Budget Summary The figures in this summary table are calculated from entries made in subsequent categories; only blank white cells require data entry.			
Budget Object Category	**Total Cost**	**Federal Estimated Amount**	**Non-Federal Estimated Amount**
a. Personnel	**$0**		
b. Fringe Benefits	**$0**		
c. Travel	**$0**		
d. Equipment	**$0**		
e. Supplies	**$0**		
f. Contractual	**$183,572**		
g. Construction	**$0**		
h. Other Direct Costs	**$0**		
i. Total Direct Costs	**$183,572**		
j. Indirect Charges	**$0**		
Total Costs:	**$183,572**	**$91,786**	**$91,786**
	Cost Share %:	**50%**	**50%**

2.3 Budget Details and Narrative

a. Personnel

Narrative: The project is not requesting funds for personnel.

b. Fringe Benefits

Narrative: The project is not requesting funds for fringe benefits.

c. Travel

Narrative: The Project is not requesting funds for travel.

d. Equipment

Narrative: The Project is not requesting funds for equipment.

e. Supplies

Supply Item	Quantity	Unit Cost	Total Cost	Basis of Cost	Purpose
		Total:	$0		

Narrative: The supplies for the project are included in the services contract with Southwestern Utility Management.

f. Contractual

Contractor Name	Purpose and Contracting Method	Total Cost	Description	Basis of cost
Southwestern Utility Management	Meters, registers & installation services	$183,572	Contracted Services	per meter & register contracted pricing from a local vendor
	Total:	$183,572		

Narrative: The estimated cost of the contracted portion of the project is $183,572 for new AMR meters, registers, and installation services. The project affects 425 meters within the CWCWC CC&N. Southwestern Utility Management is scheduled to provide the AMR meters, registers, and installation services. The procurement method will be a contract between CWCWC and Southwestern Utility Management.

g. Construction

Narrative: The Project is not requesting funds for construction.

h. Other Direct Cost

Narrative: The Project is not requesting funds for other direct costs.

i. Total Direct Cost

Narrative: The total direct project costs are $183,572.

j. Indirect Charges

Narrative: The Project is not requesting funds for indirect charges.

Third-Party In-Kind Contributions

The Project is not requesting third-party in-kind contributions.

Environmental and Regulatory Compliance Costs

The Project is not requesting funds for environmental and regulatory compliance costs.

Total Costs

The project's total cost is $183,572. The CWCWC requests $91,786 from Reclamation to fund the project, which **represents 50% of the total project cost**. No other Federal funding has been requested or received for this project.

3 Environmental and Cultural Resource Considerations

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 affecting the project area's air, water, or animal habitat. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.

The project will not require earth-disturbing work affecting the project area's air, water, animal habitat, or surrounding environment.

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

We are not aware of any endangered species in the project area.

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

No wetlands or other surface waters are inside the project boundaries, which fall under Clean Water Act jurisdiction as "Waters of the United States."

When was the water delivery system constructed?

The water delivery system at Coldwater Canyon 1 was constructed in 1977, Coldwater Canyon 2 was constructed in 1993, and the system at Coldwater Canyon 3 was constructed in 2008.

Will the proposed project result in any modification of or effects on the individual features of an irrigation system? 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.

This project will not modify or affect individual features of an irrigation system. It is centered around upgrades to water meters and will not involve irrigation 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.

This project will not modify or affect buildings, structures, or features, so the program's implementation will not affect cultural resources.

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

There are no known archeological sites in the CWCWC's CC&N.

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

This project will occur throughout CWCWC's CC&N, including low-income populations, with no disproportionate impacts or benefits from program implementation anticipated. AMR provides information on water consumption, which may benefit low-income customers due to an anticipated increase in leak detection and prompt response, thus lowering water bills.

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

No, it will not.

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?

This project will not include any habitat alteration components. It will not contribute to introducing, continuing, or spreading noxious weeds or non-native invasive species in the project area.

4 Required Permits or Approvals

This project will not require extensive permitting work. Funding is not being requested for permitting and environmental tasks, and no costs are included in the budget for such activities.

5 Letters of Project Support

No letters of support are included in this application.

6 Official Resolution

A Board resolution was signed to authorize the President to apply for this WaterSMART grant. Resolution NO. 2024-06-28 is in **Attachment A,** which provides the following:

- Identification of the official with legal authority to enter into an agreement.
- Board support of the application.
- Verification of applicant's ability to provide the funding match.
- Verification of the applicant's willingness to work with Reclamation to meet established deadlines for entering into a cooperative agreement.

7 Single Audit Reporting Statement

Coldwater Canyon Water Company did not expend more than $750,000 in Federal award funds and was not required to submit a Single Audit report for the most recently closed fiscal year.

8 Conflict of Interest Disclosure

Coldwater Canyon Water Company currently has no actual or potential conflicts of interest and will notify Reclamation immediately in writing of any conflict of interest arising during the life of this Federal award.

9 Overlap or Duplication of Efforts Statement

There is no overlap or duplication of effort.

10 Automated System Application Payment (ASAP) Registration

Coldwater Canyon Water Company will register upon invitation notification and acceptance of the application. CWCWC will maintain an active ASAP account during the period of any federal assistance agreement.

11 System for Award Management (SAM) Registration

Coldwater Canyon Water Company is registered in SAMS.

- Registered Name: Coldwater Canyon Water Company
- UEI: UFQ5ZKJ2QPU7
- BLACK CANYON CITY, AZ, USA

12 Attachments A - G

- A: Coldwater Canyon Water Company Resolution
- B: Coldwater Canyon Water Company 2022 ACC Annual Report
- C: Southwestern Utility Management Budget Estimates
- D: Coldwater Canyon Water Company Specification for BLMJ Meters
- E: Coldwater Canyon Water Company Specification for Radio-Based Automatic Meter Reading
- F: Master Meter Brochure for Dialogue 3G Mobile AMR
- G: City of Smyrna, GA AMR Case Study

ATTACHMENT A

COLDWATER CANYON WATER COMPANY
RESOLUTION NO.: 2024-06-28

WHEREAS, Coldwater Canyon Water Company is authorized to submit a proposal to the US Bureau of Reclamation in response to the WaterSMART Small-Scale Water Efficiency Projects Grant Funding Opportunity for Fiscal Years 2024 and 2025 (Application Period 2) to upgrade 425 meters to Automated Meter Reading (AMR) Technology within its distribution system. The project will reduce water losses and more effectively manage water demand.

NOW, THEREFORE, BE IT RESOLVED that the Coldwater Canyon Water Company agrees to and authorize the following:

- The Coldwater Canyon Water Company has reviewed and supported the proposal submitted;
- The Coldwater Canyon Water Company can provide the amount of funding needed for the matching grant from the WaterSMART program and
- If selected for a WaterSMART grant, Coldwater Canyon Water Company will work with Reclamation to meet the established deadlines for entering into a cooperative agreement.

This resolution was adopted by

COLDWATER CANYON WATER COMPANY

On June 28, 2024

Christopher Schilling

President

Christopher Schilling

Member of the Board