

Funding Opportunity No. R22AS00195

WaterSMART Grant

Small-Scale Water Efficiency Projects (FY22)

CORRAL KREEK WATER DISTRICT

Advanced Metering Infrastructure Project

April 28, 2022

Fort Gibson, Oklahoma

Cherokee and Muskogee County

Project Summary

The project will purchase and install all necessary hardware and software to implement Advanced Metering Infrastructure (AMI) within the town of Fort Gibson, Oklahoma.

The purpose of this project is to allow the Corral Kreek Water District (CKWD) to better manage customer usage, improve water conservation, increase water use efficiency, and increase CKWD field staff effectiveness.

Corral Kreek Water District

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Project Manager

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EXECUTIVE SUMMARY – D.2.2.5

April 28, 2022

Corral Creek Water District

Fort Gibson, Oklahoma

Cherokee and Muskogee County

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The Corral Creek Water District, located in Northeast Oklahoma, will replace / upgrade its water distribution customer metering to Advanced Metering Infrastructure by purchasing and installing 98 Advanced Meter Readers and associated hardware and software. This project will serve to reduce water loss within the distribution system and increase water use efficiency and customer awareness. This project also works toward meeting the goals of the Oklahoma Comprehensive Water Plan as set forth by the Oklahoma Water Resources Board.

- Applicant Category: Category A
- Grant Funding Request: \$34,340
- Non-Federal Matching Funds: \$35,060
- Project Duration: 6 months
- Estimated Project Start Date: April 2022
- Estimated Project Completion Date: September 2022
- Located on Federal Facility: No
- Unique Entity Identifier: In process of registering with SAM.gov, will submit later.

PROJECT LOCATION – D.2.2.6

The project location is north of the city of Fort Gibson located in Cherokee and Muskogee County, Oklahoma. CKWD is located in Northeast Oklahoma along State Highway 80. (See Figure 1)

GEO Location

Latitude: 35.81462

Longitude: -95.25145

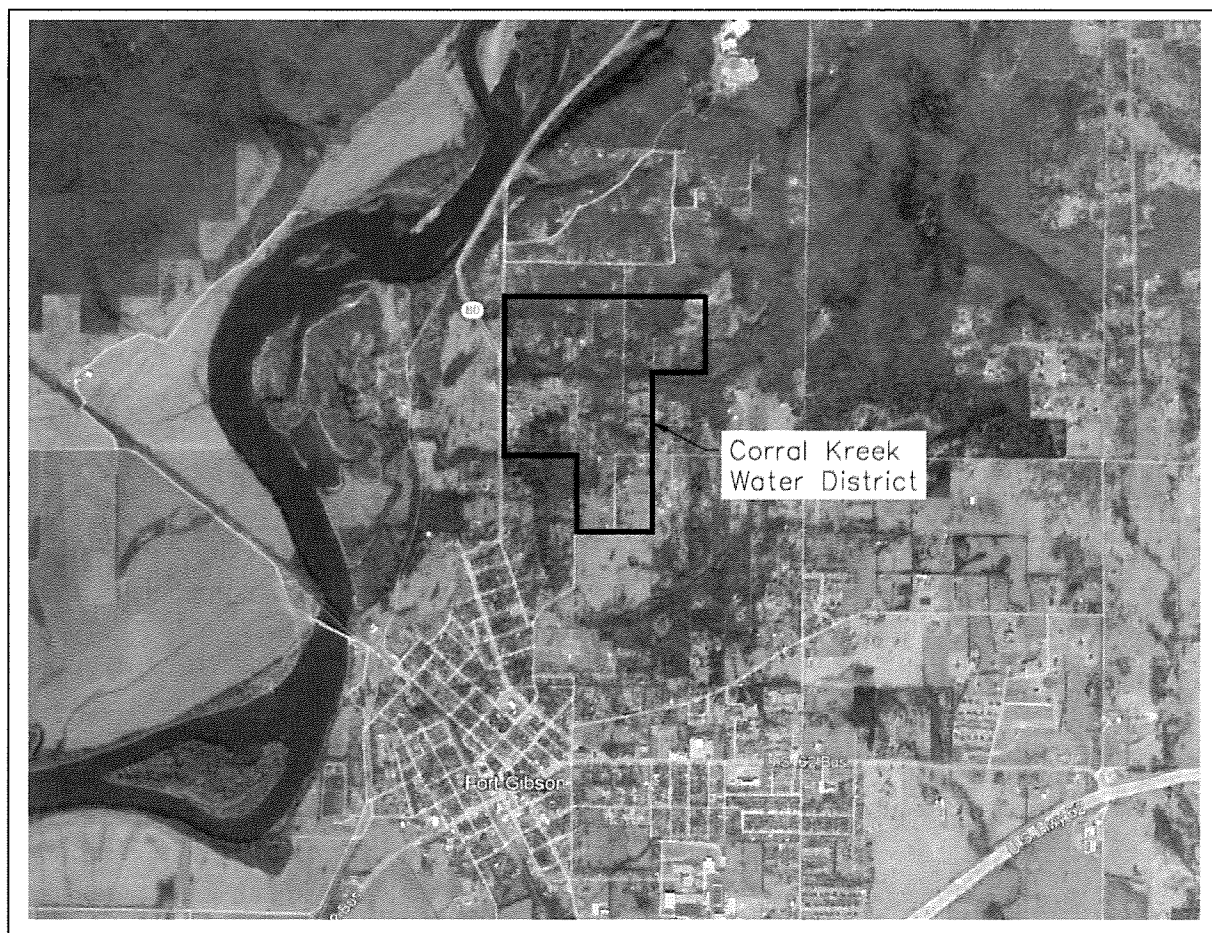


Figure 1 – Location Map

TECHNICAL PROJECT DESCRIPTION – D.2.2.7

The Corral Kreek Water District currently operates a total purchase potable water distribution system consisting of approximately 3 miles of water distribution line, and 98 metering devices. As part of the CKWD Leak Management and Efficiency Program, the aging mechanical metering devices have been identified as inefficient and a priority source of unaccounted-for water loss.

Implementation of Advanced Metering Infrastructure (AMI) has been proposed by the CKWD to resolve the issues stated with the current water system metering. As part of this project, 96 Customer Advanced Meter Readers (AMRs) along with 2 Distribution Zone AMRs and all associated hardware, software, and training will be purchased and installed to employ the new AMI system.

Installation of these meters and associated AMI components will be accomplished by a qualified contractor that will be chosen based on current State / Local bidding and construction laws and requirements along with assistance and oversight by CKWD staff. Each meter on the distribution system will be located, GPS'd, replaced by an AMR, and brought online into the new AMI system. The contractor will also install the needed AMI software at the CKWD office and ensure a seamless transition into the new system and existing billing and management software with support and training.

EVALUATION CRITERIA – D.2.2.8

1) Evaluation Criterion A (Project Benefits) – E.1.1

- *Describe the expected benefits and outcomes of implementing the proposed project.*

This project involves the installation of new AMR / AMI on the CKWD water distribution system to provide more comprehensive and reliable monitoring of water usage and leaks.

Meter Reading Cost – An AMI system provides the CKWD with the necessary tools to move the cost of reading meters into the area of revenue production. By refocusing personnel toward utility maintenance and away from the time consuming, nonproductive task of meter reading, the utility’s efficiencies concerning water loss improve and revenue increases.

Customer Service – With reliable hourly, daily, and yearly information provided by the AMI, customer calls and complaints can be efficiently managed with greater customer satisfaction.

Asset Management – Non Revenue Water (NRW) accounts for significant financial loss to the CKWD due to leaks, theft, tampering, and metering errors. By deploying the AMI, CKWD will gain control of these situations as they occur, not when they are discovered after the real damage has been done to property and vast quantities of water are lost. The real time capabilities of the AMI make this possible.

Conservation Management – The State of Oklahoma currently has a Comprehensive Water Plan and management policies which put the burden of controlling water usage on the local utility. The AMI, through its functional design will provide the CKWD with the ability to implement a conservation management program that is automatically monitored by the system software and helps meets the state plan requirements.

- *Extent to which the proposed project improves overall water supply reliability.*

This project will help improve overall water supply reliability due to increased water conservation and additional available man power due to improved efficiency during meter reading. Due to the improved accuracy of the new AMRs and the ability of the AMI system management, the CKWD expects to see a 5-10% reduction in overall water usage and loss.

- *Benefits to the applicant's water supply delivery system*

The project, once fully implemented, will provide two notable benefits. First, the AMI will give CKWD staff the ability to understand usage through hourly and daily water demand data, which allows for more efficient operation and delivery of the water supply. Secondly, the project will assist with planning of future improvements to the distribution system and water supply.

- *Increased collaboration and information sharing among local water managers*

The CKWD is already engaged in collaboration and information sharing among water managers in the regions as a supporter of the Oklahoma Water Resources Board by attending annual meetings and training events. At the meetings, the CKWD will share best practices and make other regional water managers aware of this grant opportunity.

- *Anticipated positive impacts to local sectors and economies*

Corral Creek Water District has experienced a 21.2% population increase since 2010. Over 70% of this growth has occurred since 2016, showing an increasing trend in growth in the area. This growth is attributed to the development of NE Oklahoma. Increased water supply and reliability will lead to greater economic opportunity, area growth, and tourism due to additional capacities and support of the CKWD water distribution system.

2) Evaluation Criterion B (Planning Efforts Supporting the Project) – E.1.2

- *Does the proposed project implement a goal or address a need or problem identified in the existing planning effort?*

The proposed project has been determined as a high priority in the existing planning efforts as part of a district-wide plan to manage an aging water distribution infrastructure. By implementing the proposed Advanced Metering Infrastructure and upgrading the water delivery communications, the CKWD should see a reduction in water loss and an increase in overall water system efficiency.

This project will address issues found by annual leak detection efforts in the districts Capital Improvement Plan and Leak Management and Efficiency Program. This project will also help reach some of the goals set in the State of Oklahoma's water conservation plans.

- i) House Bill 3055 (the Water For 2060 Act) – Statewide goal of consuming no more fresh water in 2060 that was consumed in 2010.
- ii) 2025 Oklahoma Comprehensive Water Plan – Identify and recommend water management strategies for all water-use sectors.
- *Explain how the proposed project has been determined as a priority in the existing planning effort as opposed to other potential projects / measure.*

The majority of the CKWD water meters are 25+ years old and have surpassed their useful life and are no longer certified as accurate. These aging meters no longer register low flows accurately or have the ability to alert potential water leaks. Due to the improved accuracy and capabilities of the new AMRs and the ability of the AMI system management, the CKWD expects to see a 5-10% reduction in overall water usage and loss.

3) Evaluation Criterion C (Implementation and Results) – E.1.3

- *Describe the implementation plan for 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.*

The following table outlines the major tasks, milestones, and schedule for the proposed project. The project would proceed after the projected award date in March 2023.

Table 1 – Tasks and Milestones

SCHEDULE						
Task / Milestone		May	June	July	August	Sept
Task 1	Contractual Obligations					
Task 2	Acquisition of Materials					
Task 3	Installation / Construction					
Task 3	AMI System Training					
Task 4	Reporting / Closeout					

- *Describe any permits that will be required.*

Based on the current scope of the proposed project and current State / Local requirements, no permitting is anticipated for the implementation of this project.

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

The CKWD currently works with a local engineer to develop, plan, implement and manage water distribution related projects. The engineer has reviewed the preliminary project scope and budget and prepared planning documentation to begin the project as soon as funding is available. The CKWD will enter into a contractual obligation with the engineer, upon project funding, to assist with project management and provide technical assistance.

- *Describe the timeline for completion of environmental and cultural resource compliance.*

The project is anticipated to fall within a NEPA – Categorical Exclusion as the scope of the project construction is entirely within previously disturbed area.

4) Evaluation Criterion D (Nexus to Reclamation) – E.1.4

- *Does the applicant receive Reclamation water or is the project on Reclamation land or involve Reclamation facilities?*

Not applicable

- *Is the project in the same basin as a Reclamation project or activity or will the project contribute a basin where a Reclamation project is located?*

Not applicable

5) Evaluation Criterion E (Presidential and Department of the Interior Priorities) – E.1.5

a) Sub-criterion No. E.3 (Tribal Benefits)

- *Does the proposed project directly serve and /or benefit a Tribe or provide other Tribal benefits such as improved public health and safety by addressing water quality, new water supplies, or economic growth opportunities?*

The CKWD water distribution system is fully located within the boundaries of the Cherokee Nation reservation. Based on current GEO referenced population data, provided by the Cherokee Nation, approximately 39% of the active water meters on the CKWD system are of Tribal descent. All previously stated benefits of this project

will directly affect the overall public health and economic growth opportunities of the Tribal members served. (Letter of Support – Appendix A)

OVERLAP OR DUPLICATION OF EFFORT – D.2.2.9

There are no known or anticipated overlap in terms of the proposed project (or future projects) activities, cost, or commitment of key personnel

PROJECT BUDGET – D.2.2.10

FUNDING PLAN

The total estimated cost for the Corral Creek Water District -Advanced Metering Infrastructure Project is \$69,400. The funding requested from Bureau of Reclamation is \$34,340. The CKWD will allocate \$35,060. to provide for the purchase of materials, contractual obligations, and in-kind contributions from the General Operating Fund.

The CKWD has the necessary funding, and is ready to proceed with this project.

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).*

Monetary contributions from the CKWD General Operating Fund will be applied for: a) *equipment, supplies, and materials* and b) *contractual obligations* to install the AMI infrastructure and provide for training

A total of \$35,060. in the form of in-kind and cash contributions by the CKWD to include a) all salaries and wages, indirect fees, b) partial expenses of the materials and supplies, and shipping costs, and c) partial expenses associated with contractual obligations for installing equipment and associated training of CKWD staff, who will help the contractors to install the equipment.

- *Any third-party in-kind costs (i.e., goods and services provided by a third party).*

Not applicable

- *Any cash requested or received from other non-Federal entities.*

Not applicable

- 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.

Not applicable

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

Not applicable

BUDGET PROPOSAL

The following tables describes the sources of non-federal and federal funding and the proposed project budget.

Table 2 – Funding Sources

FUNDING SOURCE	AMOUNT
Costs reimbursed with requested Federal funds	\$ 34,340
Costs to be paid by recipient	\$ 35,060
Value of third-party contributions	\$ -
TOTAL ESTIMATED PROJECT COSTS	\$ 69,400

Table 3 – Budget Estimate

BUDGET ITEM DESCRIPTION	COMPUTATION		QUANTITY TYPE	FUNDING SOURCE		TOTAL COST
	\$/UNIT	QUANTITY		RECIPIENT	BOR	
Salaries and Wages						
Owner / Operator	\$ 50	120	Hourly	\$ 6,000		\$ 6,000
Maintenance Staff	\$ 35	160	Hourly	\$ 5,600		\$ 5,600
Customer Service	\$ 20	80	Hourly	\$ 1,600		\$ 1,600
Supplies / Materials						
Ultrasonic Meter (Residential)	\$ 150	96	EA		\$ 14,400	\$ 14,400
Ultrasonic Meter (Route)	\$ 1,000	2	EA		\$ 2,000	\$ 2,000
AMI Meter Antenna	\$ 130	98	EA		\$ 12,740	\$ 12,740
Handheld Tablet Reader	\$ 3,500	1	EA		\$ 3,500	\$ 3,500
Drive-by Mobile Reader	\$ 3,000	1	EA	\$ 3,000		\$ 3,000
Contractual / Construction						
Meter Install	\$ 70	98	EA	\$ 6,860		\$ 6,860
Annual Maintenance (1st yr.)	\$ 1,700	1	LS		\$ 1,700	\$ 1,700
AMI System Training	\$ 1,500	3	EA	\$ 4,500		\$ 4,500
GPS / Mapping of AMI	\$ 2,500	1	LS	\$ 2,500		\$ 2,500
Engineer Consultant	\$ 5,000	1	LS	\$ 5,000		\$ 5,000
TOTAL ESTIMATED PROJECT COSTS					\$	69,400

BUDGET NARATIVE

- *Salaries and Wages*

All salary and wages will be applied as matching funds. Cason LeBlanc (Leblanc Engineering) will be the project manager concerned with the CKWD interests. A total of 360 CKWD staff hours are anticipated to complete the project. LeBlanc Engineering and CKWD staff will oversee all aspects of the project including purchasing materials / supplies and managing and assisting the contractor to install the AMI infrastructure. The contractors will train CKWD staff on how to implement and maintain the AMI infrastructure; some of the listed staff hours include time for training.

- *Fringe Benefits*

Not applicable

- *Travel*

Not applicable.

- *Equipment*

Not applicable

- *Materials and Supplies*

A total of 98 ultrasonic automatic meters with radio antenna, supporting AMI infrastructure components, and all needed construction materials and appurtenances will be purchased by public solicitation of competitive sealed bids. The unit prices of these items were estimated using market research and provided engineering estimates.

- *Contractual*

The manufacturer chosen to provide the AMI infrastructure will also be contracted to install the meters and appurtenances; the contractor will also train CKWD staff how to use the data collectors, software, and maintain the system. The CKWD will retain the services of a professional engineer and GIS professional to assist with project design, management, and AMI infrastructure mapping.

- *Third-Party In-Kind Contributions*

Not applicable

- *Environmental and Regulatory Compliance Costs*

The proposed project is anticipated to fall within a Categorical Exclusion pursuant to NEPA that will require minimal effort for filing documentation. If applicable, this requirement will be managed by the professional engineering contract obligations.

- *Indirect Costs*

Not applicable

ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE – D.2.2.11

The AMI project is to replace existing residential and distribution meters with advanced meters and infrastructure within the same location of current public right-of-ways and previously procured easements. As a result, the CKWD does not anticipate an environmental impact associated with the project.

- *Will the project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)?*

The project will consist of upgrading existing water service meters with automated meter devices, which will not result in ground-disturbing work. As a result, the project will not impact the surrounding environment.

- *Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area?*

Project activities do not include ground-disturbance and will not impact sensitive species or their habitat. Further, work will be performed within already developed, urbanized and residential areas where there is limited potential for critical habitat or otherwise suitable for sensitive species.

- *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 project may have.*

There are no “waters of the United States” located within the project boundaries and the project will not have any impacts on any nearby wetlands or surface waters.

- When was the water delivery system constructed?

The formation of CKWD occurred in 1983. The water meters targeted for upgrades are on average 25-30 years old.

- *Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., head gates, canals, or flumes)?*

No, the proposed project will not result in any modification of or effects to individual features of an irrigation system. The project will involve upgrades to residential 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?*

No buildings, structures or features associated with the proposed project are listed or eligible for listing on the National Register for Historic Places.

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

There are no known archaeological sites within the project area. Additionally, the project will consist of meter upgrades within already developed areas and would not affect potential archeological sites.

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

The project will not have a disproportionately high or adverse effect on low income or minority populations. The project would equally benefit all CKWD water customers and could actually provide financial benefits to customers through timely leak detection and water conservation that could reduce water bills.

- *Will the proposed project limit access or ceremonial use of Indian sacred sites or result in other impacts on Tribal lands?*

No, the project will not limit access to or ceremonial use of Indian sacred sites or result in other impacts on tribal lands. The project will involve meter upgrades which would not result in adverse impacts on tribal lands.

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

The proposed project is not anticipated to contribute to the introduction, continued existence, or spread of, noxious weeds or non-native invasive species. No ground disturbing work will occur as part of the project, which could contribute to spreading invasive species.

REQUIRED PERMITS OR APPROVALS – D.2.2.12

The project falls under system maintenance and therefore does not require permitting as defined by Oklahoma Title 252 “Department of Environmental Quality”; Chapter 626 “Public Water Supply Construction Standards”.

LETTERS OF SUPPORT AND LETTERS OF PARTNERSHIP – D.2.2.13

- 1) Cherokee Nation Tribe – Office of Environmental Health and Engineering
 - a. The Nation fully supports this project within its jurisdictional boundaries and realizes the direct benefits this project will have on the tribal members served by the CKWD water system.

OFFICIAL RESOLUTION – D.2.2.14

The CKWD board approved the submission of the WaterSMART grant on April 14, 2022. The board will consider, and act, on the Official Resolution during the next regular board meeting on May 12, 2022. A copy of the Official Resolution will be mailed to the BOR separately as it becomes available.

CONFLICT OF INTEREST DISCLOSURE – D.2.2.15

Per the Financial Assistance Interior Regulation (FAIR), 2 CFR §1402.112, there are no actual or potential conflicts of interest existing at the time of this grant application submission.

UNIFORM AUDIT REPORTING STATEMENT – D.2.2.16

The CKWD has not expended \$750,000 or more in the FY of this grant application and per 2 CFR §200 subpart F, is not required to submit a Single Audit report.

CERTIFICATION REGARDING LOBBYING – D.2.2.17

The CKWD is requesting \$100,000 or less in Federal funding through this grant application and certification to statements found in 43 CFR §18, Appendix A. do not apply.

UNIQUE ENTITY IDENTIFIER AND SYSTEM FOR AWARD MANAGEMENT – D.3

1. The CKWD is in the process of registering in the System for Awards Management (SAM), and will be registered before the award date.
2. Unique Entity Identifier: Will receive once registered.
3. The CKWD will continue to maintain an active SAM.gov registration with current information through the life of the Federal award related to this grant application.

APPENDIX A Letter of Support



GWYB DBP
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Office of the Chief

Chuck Hoskin Jr.
Principal Chief

Bryan Warner
Deputy Principal Chief

April 25, 2022

Re: Corral Creek Water District
Advanced Metering Infrastructure Project – Letter of Support

To Whom It May Concern:

On behalf of the Corral Creek Water District, and as Director of The Cherokee Nation – Office of Environmental Health and Engineering, I am writing this letter in support of the above referenced project. The Nation has recently passed legislation (Mankiller-Soap Water Act) to survey and address current and future water related needs and infrastructure within the reservation. This project falls firmly within the scope of this legislation and helps to meet the goals set forth within and also works toward meeting current goals of the Tribe's Comprehensive Water Plan to protect our water ways, conserve our water resources, and ensure future growth and economic success.

Current Tribal population data in the area of Corral Creek Water District shows approximately 39% of the members served by the Municipal Authority are of Cherokee decent.

In closing, please accept this letter of support for the Corral Creek Water District project. Water is life and an important resource the Cherokee Nation wishes to protect for current and future Tribal members and all of Oklahoma.

Respectfully,

Chris Sams
Director – Office of Environmental Health and Engineering
Cherokee Nation Department of Transportation and Infrastructure