

# Advanced Metering Infrastructure (AMI) Implementation Project



*Grant Applicant*

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## MANDATORY FEDERAL FORMS

The following forms were submitted electronically via grants.gov:

- SF-424 Application for Federal Assistance
- SF-424A Budget Information – Construction Programs
- SF-424D Assurances – Construction Programs
- SF-LLL Disclosure of Lobbying Activities

## TECHNICAL PROPOSAL AND EVALUATION CRITERIA

### Executive Summary

November 3, 2021

Nathan Madenwald, P.E., Project Manager  
Norman Utilities Authority  
Norman, Cleveland County, Oklahoma  
Category A Applicant

*A one-paragraph project summary that provides the location of the project, a brief description of the work that will be carried out, any partners involved, expected benefits, and how those benefits relate to the water management issues you plan to address.*

Located in central Oklahoma, the City of Norman is the third largest city in the state. The city has a long rich history. It began as an American pioneer settlement during the Land Run of 1889. Since then, the population has grown substantially from 787 people in 1890 to 128,026 as of 2020<sup>1</sup>. Norman Utilities Authority (“NUA” or “Norman”) provides water service to approximately 41,000 accounts. NUA plans to install new software systems and upgrade/deploy water meters/modules to all customers during its Advanced Metering Infrastructure (AMI) Implementation Project. The replacement of old water meters will increase metering accuracy, as meter precision can decline in traditional meters with age. This project supports NUA’s commitment to continually enhance its service for the City of Norman.

This application addresses the planning and deployment activities associated with the AMI implementation project. NUA currently experiences roughly 20% water loss annually. That’s nearly 1 billion gallons of water, or over 3½-times the volume of the Empire State Building, lost each year. It is anticipated that the project will result in over 645,000,000 gallons of water savings per year. NUA will also experience energy savings by reducing the amount of water pumped from its water treatment plant and groundwater wells plus the energy savings realized.

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<sup>1</sup> <https://www.normanok.gov/sites/default/files/documents/2020-05/2016%20Water%20Conservation%20Plan%205%2010%2016%20for%20website.pdf>



Project components include: an AMI system, Meter Data Management System (MDMS) and customer engagement platform (customer portal). Once implemented, these platforms will provide NUA and its customers with near-real time customer water usage data, leak alerts and other service notifications. This will allow staff to proactively address service issues. Customers will also be empowered to make more informed decisions about their water usage. Issues often go undetected until the end of each 30-day billing cycle with current meters. This practice can be costly for both NUA and its customers. More detailed benefits are defined in the [Evaluation Criteria](#) portion of this application.

Overall, the AMI implementation project supports NUA’s long-term goals to conserve water/sustain its environmental resources, enhance customer service, and increase operational efficiencies.

*State the length of time and estimated completion date for the proposed project.*

The AMI implementation project, for which funding is sought, will take approximately three years to complete. Current assumptions include a project start of November 2021 and a completion date of November 2024.

*Whether or not the proposed project is located on a Federal facility.*

The AMI implementation project is not located on a Federal facility.

## **Project Location**

*Provide detailed information on the proposed project location or project area including a map showing the specific geographic location.*

The City of Norman, Oklahoma, is located 20 miles south of Oklahoma City in the county seat of Cleveland County. The city is home to the University of Oklahoma, the largest university in the state. It also houses the National Weather Center. The project latitude is approximately 35.22545 North and longitude is 97.34398 West. See [Figure 1](#) below for a map of NUA’s 65 square mile service territory and [Figure 2](#) for an illustration of its water distribution system.



Figure 1: Project Location—NUA Service Area

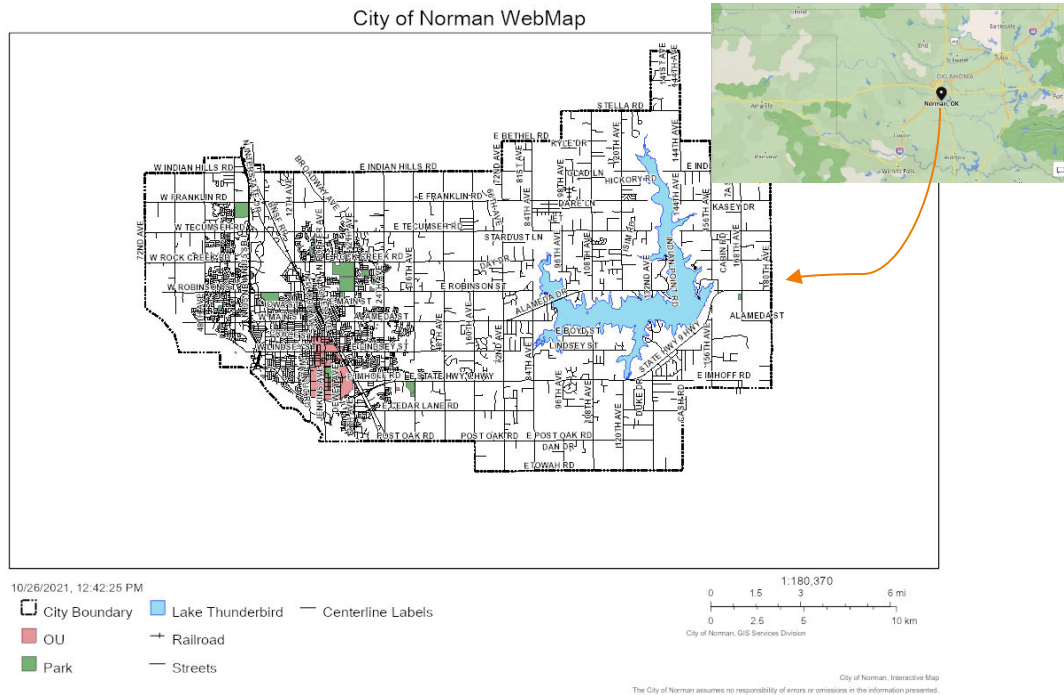
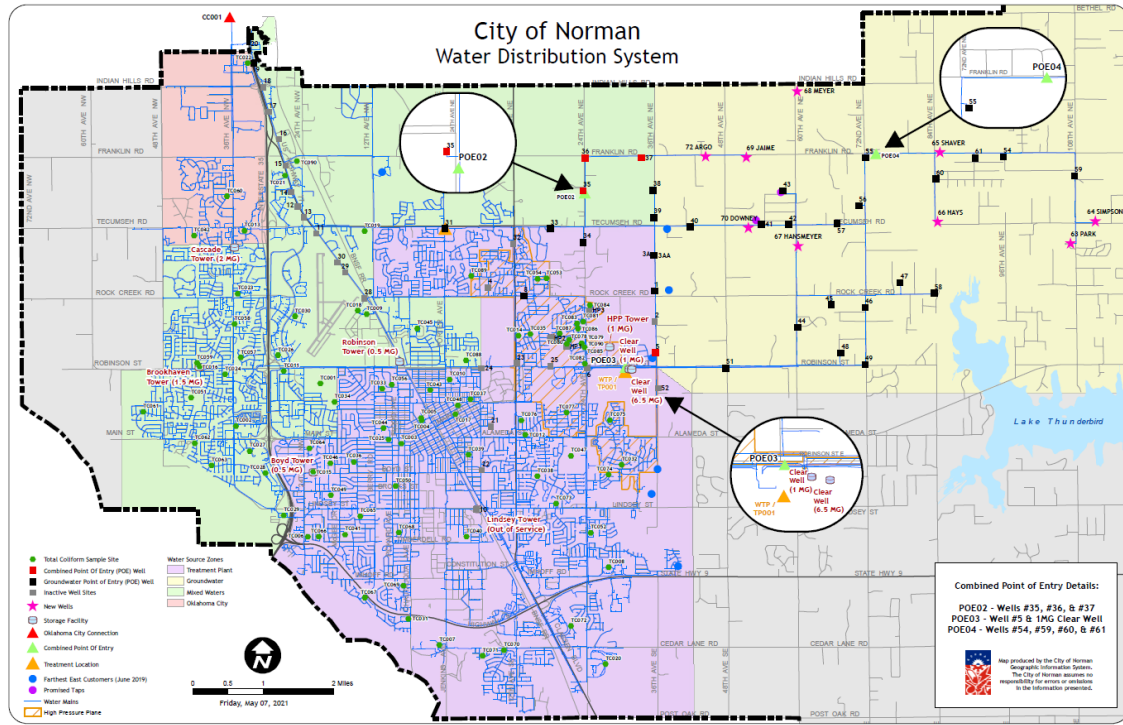


Figure 2: Norman Water Distribution System





## Technical Project Description

*Provide a more comprehensive description of the technical aspects of your project, including the work to be accomplished and the approach to complete the work. This description should provide detailed information about the project including materials and equipment and the work to be conducted to complete the project. This section provides an opportunity for the applicant to provide a clear description of the technical nature of the project and to address any aspect of the project that reviewers may need additional information to understand.*

The proposed project will include procurement of an AMI network, meters, and software installation, MDMS software and a customer portal. These activities come as a natural step in the city's asset management planning due to a large portion of the utility's meter population being near or significantly past the expected life span of 15 to 20 years.

All meter reading is handled in-house by the City's Meter Services staff. The team includes: six meter readers, three service representatives and one supervisor. Approximately 39,000 meters are currently read manually. This process consists of meter readers driving to the service address, safely parking, and exiting their vehicle, entering the premise, and physically reading the meter register. The remaining 2,000 meters also require a site visit, but staff don't have to physically access the meter. They use Badger handheld devices to collect the reads via automated meter reading (AMR). Meter Services staff have noted that handheld equipment can sustain damage or fail. The advanced meters will wirelessly deliver near-real time meter readings to NUA reducing the need for daily field visits to collect meter reads and will increase reading accuracy thereby improving billing accuracy.

NUA recently began project pre-deployment planning activities by hiring technical consultants from E Source to evaluate current operations. The consultants completed the AMI assessment in September 2021. It was determined that an AMI implementation project is feasible for NUA.

This application covers the subsequent project phases:

### 1. Procurement

- Planning activities will continue through November 2021, with a competitive bid process to procure vendors to provide a turn-key AMI solution. The contractors will support the implementation of a data collection network, meter installations and software integrations, enabling communication of data between NUA and the advanced meters.

### 2. Initial Deployment Area (IDA)

- The intent of the IDA phase is to provide, install, and fully implement all hardware, firmware, software components (e.g., AMI, MDMS, customer portal) and system integrations for a limited group of meters. This will allow



NUA to verify proper communication and data transfer across the system. Staff training on the new systems will also take place during IDA.

- The advanced water meter upgrade will consist of detaching the meter from the service line, exchanging the meter, attaching the AMI module, and threading the antenna through a new water meter pit lid that has a hole cut out for the antenna. NUA is prepared to make water box improvements where there are issues with the placement of the new meter.
- The meters will begin to register and communicate using the fixed base network of communication devices. Any registration or communication issues that may arise will be addressed either by the selected AMI vendor or NUA staff, as appropriate.

### 3. Mass Deployment

- With all the planning, preparation, testing, and training complete, full deployment will be managed more like a construction project in contrast to the IDA. NUA expects full system functionality available at this point, with route acceptance to switch meters from manual to AMI reads for billing.

NUA plans to provide oversight to assure that cost, schedule, and scope are properly managed for the AMI implementation project. NUA project management will also be responsible for reporting per the grant agreement.

## Evaluation Criteria

*The evaluation criteria portion of your application should thoroughly address each criterion and subcriterion in the order presented to assist in the complete and accurate evaluation of your proposal. It is suggested that applicants copy and paste the below criteria and subcriteria into their applications to ensure that all necessary information is adequately addressed.*

***Applications will be evaluated against the evaluation criteria listed below. If the work described in your application is a phase of a larger project, only discuss the benefits that will result directly from the work discussed in the technical project description and that is reflected in the budget, not the larger project.***

*Note: Since the NOFO is open to a variety of project types, Evaluation Criteria A-D may not apply to every project. For example, a water savings project (Criterion A) may not include implementation of a renewable energy component (Criterion B). Please provide as much detail and support as you can for those criteria in A-D that are applicable to your project. All applicants should respond to Evaluation Criteria E-H.*

Please note: All factors used to complete calculations in the following responses originate from NUA data reports, water loss audits performed in accordance with American Water Works Association (AWWA) M36 Manual (Water Audits and Loss Control Program, Fourth Edition) and industry standard assumptions provided by E





Source, our AMI Technology Planning and Implementation consultant. See supporting documentation in the appendices.

## Evaluation Criterion A: Quantifiable Water Savings (28 points)

*Up to **28 points** may be awarded for this criterion. This criterion prioritizes projects that will conserve water and improve water use efficiency, supporting the goals of Executive Order (E.O.) 14008. Points will be allocated based on the quantifiable water savings expected as a result of the project. Points will be allocated to give greater consideration to projects that are expected to result in more significant water savings.*

### 1) Describe the amount of estimated water savings.

*For projects that conserve water, please state the estimated amount of water expected to be conserved (in acre-feet per year) as a direct result of this project.*

*Please include a specific quantifiable water savings estimate; do not include a range of potential water savings.*

NUA expects water savings to result from the following activities: distribution system real loss reduction, improved apparent loss capture at the customer meter, demand-side conservation savings, theft identification, and leak detection management and resolution.

It is estimated that 5% savings in real losses in distribution will result in savings of 149.27 acre-feet annually. Losses are also the result of systemic inaccuracies in the overall metering system, which has a measurable impact of 4.9% that can be recovered against authorized consumption, or about 612.76 acre-feet annually. NUA expects to attain additional demand-side customer conservation savings of 2.5% on authorized consumption, or about 312.63 acre-feet annually as a result of improved meter accuracy.

This project will also improve theft detection and mitigation, which is estimated to have an impact of 0.25% across authorized consumption, for 31.26 acre-feet recaptured annually. In addition to these areas, alarms and reporting from the AMI system will allow for lowered latency in leak detection and resolution. Though NUA has some data on leak adjustments performed annually, it also recognizes that many smaller leaks go unreported or are otherwise unknown as a result of limited interval consumption information. Due to unknowns related to the time it takes to resolve leaks after initial identification, water loss aversion estimates are difficult to prescribe, but NUA expects it be appreciable to the effect of 7% on authorized consumption, or about 875.37 acre-feet.

In summary, estimated water savings are expected to total 1,981.29 acre-feet or 1,768,784 gallons daily. Note that these figures are based on the NUA's AWWA Water Audit Report for FY 2021. See APPENDIX D for further details.



## 2) Describe current losses.

*Please explain where the water that will be conserved is currently going and how it is being used (e.g., back to the stream, spilled at the end of the ditch, seeping into the ground).*

Raw water is delivered to NUA’s water treatment plant by the Central Oklahoma Master Conservancy District (COMCD). Line losses in the delivery system are unknown. Losses within the boundaries of the treatment plant are thought to be minimal. Recent flow meters have been installed during plant rehabilitation that will better track water inventories. Losses are usually attributed to the evaporation of filter backwash process water as it is held for extended periods in the residual ponds.

As mentioned earlier, system losses average 20% annually. To minimize this value, Line Maintenance personnel are available 24 hours a day to address system failures as they occur. Upon being notified of a failure, crews respond with quick corrective action.

The primary source of water loss within the distribution system is from old and or fatigued water meters. These older meters have nutating discs that spin and account for the water used. Over time, these meters deteriorate and are not able to register all of the water delivered to the customers. Approximately 700 meters are replaced annually of the 41,000 total meters. This equates to a replacement cycle of once every 58 years. AWWA recommends a replacement cycle of small meters once per 10 years and suggests annually checking large meter accuracy since these usually under-register the volume of water used by customers.<sup>2</sup>

Other less prevalent sources of documented non-metered water loss include unauthorized consumption and systematic data handling errors.

Additionally, NUA conducted an audit of the water system utilizing the AWWA methodology. See [Table 1](#) for inputs used to calculate the total water total losses below. NUA is prepared to utilize the AMI system functionality to reduce these losses.

*Table 1: Inputs to Calculate Current Water Loss*

System Details	
Water Produced (Acre Feet)	15,553.03
Water Consumed (Acre-Feet)	12,505.27
<b>Net Loss (Acre-Feet)</b>	<b>3,047.76</b>
Apparent Loss (Acre-Feet)	62.37
Real Loss (Acre-Feet)	2,985.40
<b>Net System Loss (%)</b>	<b>19.60%</b>
Source	FY2021AWWA Water Loss Audit

<sup>2</sup> <https://www.normanok.gov/sites/default/files/documents/2020-05/2016%20Water%20Conservation%20Plan%205%2010%2016%20for%20website.pdf>



$$15,553.03 - 12,505.27 = 3,047.76 \text{ Net Acre-Feet}$$

$$3,047.76 / 15,553.03 = 19.60\% \text{ Net System Loss}$$

#### 4) Describe the support/documentation of estimated water savings:

*Please provide sufficient detail supporting how the estimate was determined, including all supporting calculations. Note: projects that do not provide sufficient supporting detail/calculations may not receive credit under this section. Please be sure to consider the questions associated with your project type (listed below) when determining the estimated water savings, along with the necessary support needed for a full review of your proposal.*

*In addition, please note that the use of visual observations alone to calculate water savings, without additional documentation/data, are **not** sufficient to receive credit under this section. Further, the water savings must be the result of reducing or eliminating a current, ongoing loss, not the result of an expected future loss.*

Details to support the estimates provided are included in response to item (2) Municipal Metering, question a, below.

#### 5) Please address the following questions according to the type of project you propose for funding.

**(2) Municipal Metering:** *Municipal metering projects can provide water savings when individual user meters are installed where none exist to allow for unit or tiered pricing, when existing individual user meters are replaced with advanced metering infrastructure (AMI) meters, and when new meters are installed within a distribution system to assist with leakage reduction. To receive credit for water savings for a municipal metering project, an applicant must provide a detailed description of the method used to estimate savings, including references to documented savings from similar previously implemented projects. Applicants proposing municipal metering projects should address the following:*

*a. How has the estimated average annual water savings that will result from the project been determined? Please provide all relevant calculations, assumptions, and supporting data.*

Several sources of water savings are outlined below in this application. They are as follows:

- The AMI system will improve distribution system monitoring to identify and target specific areas of loss.
- The AMI system will have the ability to detect leaks earlier and provide alerts and other service information to the utility to take early action.
- The inclusion of a customer portal within the overall AMI implementation project will provide customers with near real-time information water usage data. This will



allow them to make more informed decisions about their water usage, including the management and conservation thereof.

- The replacement of old water meters will cause increased metering accuracy as meter precision can decline in traditional meters with age, leading to improved apparent losses and demand-side conservation.
- Theft of water can be averted through alarms enabled by AMI hardware.

Table 2 includes the annual savings totals for the AMI implementation project.

*Table 2: Anticipated Annual AMI Implementation Project Water Savings*

Savings Category	Savings Totals (Acre Feet/Year)
Distribution-Side Leak Detection and Management	149.27
Customer-Side Leak Detection and Management	875.37
Improved Customer Water Conservation and Management Savings	312.63
Improved Metering Accuracy	612.76
Theft Detection and Aversion	31.26
<b>Total</b>	<b>1,981.29 Acre-Feet/Year</b>
<b>Savings on Production</b>	<b>14.98%</b>

Specific details related to each savings category are detailed below.

### *Utility-Side Losses*

Through data analytics routines that will be implemented as part of this project, improved system balancing will allow NUA to identify what areas are most responsible for loss by assessing inflow and outflows in specific parts of the distribution system, uncovering utility-side leaks and inefficiencies. Table 3 includes the total calculated savings per year from distribution-side leak detection and management.

*Table 3: Distribution-Side Leak Detection Savings*

Distribution Side Leak Detection and Management			
Water Lost in Distribution (Acre-Feet/Year)	Effective Savings	Savings (Acre-Feet/Year)	Comments
<b>2,985.40</b>	<b>5%</b>	<b>149.27</b>	Based on E Source Industry Estimates

$$2,985.40 \times 5\% = 149.27 \text{ Acre-Feet/Year Savings}$$



### Customer-Side Water Reduction Through Use of a Customer Portal

A customer portal will be implemented as part of the AMI implementation project at NUA. Customers will have the ability to view their hourly consumption data and monitor their daily usage with this new tool. NUA plans to develop a strategic outreach effort to educate and empower customers to use the portal to take control of their monthly bill as well as work toward conservation goals. [Table 4](#) details customer water conservation and management savings.

*Table 4: Improved Customer Water Conservation and Management Savings*

Improved Customer Water Conservation and Management			
Water Consumption (Acre-Feet/Year)	Demand-Side Reduction	Savings (Acre-Feet/Year)	Comments
<b>12,505.27</b>	<b>2.5%</b>	<b>312.63</b>	Based on E Source Industry Estimates

**12,505.27 x 2.5% = 312.63 Acre-Feet/Year Savings**

Eastern Municipal Water District (EMWD), a wholesaler of water in Southern California, completed a demonstration project that included a customer portal similar to the solution that NUA plans to implement. For the demonstration project, EMWD installed AMI units for a subset of its customer base, included daily water use information on customer water bills, and made flow data available to customers via the customer portal on EMWD’s website. EMWD determined that implementation of the demonstration project realized an average annual reduction of 0.027 acre-feet of water per year per meter across all meters.

NUA will aggressively market the customer portal to its customers but only assumes a 25% uptake of the portal by the customer base, leading to an effective system-wide conservation rate of 2.5% using the 0.027 acre-feet metric. With the addition of an AMI customer portal, customers will also be able to set thresholds for potential high-bills and opt in to receive notifications including advanced leaks alerts.

NUA also plans to procure meters that can detect very low flow down to portions of a gallon as part of the project. This will allow for all recorded water flow data to be sent to the utility to assist in the identification of possible leaks based on the meter notating consistent water flow for an extended period of time. The AMI system will cause alarms or flags to be sent to both NUA and the customer notifying them of the potential leak. This will be a major improvement from NUA’s current leak detection process. Today, the responsibility falls on the customer to notify the utility if they suspect they might have a leak. This typically happens after water loss has already occurred, maybe due to a high bill. With the use of a customer portal, NUA can notify customers about high usage due to water leaks or other service issues, allowing them to take action sooner. Earlier detection will also reduce the impact of most issues that on-call line maintenance personnel have to address. [Table 5](#) covers customer-side leak detection savings.



Table 5: Customer-Side Leak Detection and Management Savings

Customer Side Leak Detection and Management			
Water Consumption (Acre-Feet/Year)	Customer Leak Savings	Savings (Acre-Feet/Year)	Comments
12,505.27	7%	875.37	EPA study ( <a href="http://www3.epa.gov/watersense/pubs/fixleak.html">http://www3.epa.gov/watersense/pubs/fixleak.html</a> ) references 10% leaks on customer side. 7% aversion is used as a conservative basis.

$12,505.27 \times 7\% = 875.37$  Acre-Feet/Year Savings

*Improved Accuracy of Meters*

As noted above, NUA performs annual water audits following AWWA guidelines. In the 2021 fiscal year audit, the reported water loss was 3,047.76 acre-feet, of which 62.37 were estimated systemic losses. By assessing improvement in the overall water consumption, NUA expects to reduce systemic losses and improve water conservation. Table 6 lays out the details to support the anticipated savings from improved metering accuracy.

Table 6: Improved Metering Accuracy Savings

Improved Metering Accuracy			
Water Consumption (Acre-Feet/Year)	Improvement in Meter Accuracy	Savings (Acre-Feet/Year)	Comments
12,505.27	4.9%	612.76	Norman Utilities Authority BCS Performance Solutions Water Meter Accuracy Audit Report

$12,505.27 \times 4.9\% = 612.76$  Acre-Feet/Year Savings

In order to realize its effect, the city commissioned a report to determine the accuracy meters used in the system. The majority of NUA’s water meters are over 40 years old. Over 130 meters were sampled and tested by an independent agency (ME Simpson). This group included various sizes, geography, and install dates. A summary from the results report, developed by BCS Performance Solutions, is provided below in Table 7, with 100 being an indication of perfect accuracy. Values greater than 100 indicate over registration, whereas values less than 100 indicate loss of accuracy resulting in unreported water flow. Comprehensive results can be found in APPENDIX E.



Table 7: 2018 Meter Audit Results

Flow Range	Test Average
Low	86.62%
Mid	97.50%
High	97.07%
Weighted	95.11%

The results indicate, that in addition to age impacting the meter accuracy by slowing the metrology of the sampled meters overall, flow also is a factor. Based on the expert evaluation conducted by BCS Performance Solutions, flows were weighted 15%, 70% and 15% for low, mid, and high flows to determine a weighted accuracy based on expected pattern of use. For new meters being installed as part of this project, AWWA specified meter accuracies of 100% +/- 1.5%, resulting in an accuracy delta of about 4.9% +/- 1.5% on the current system.

*Water Theft*

Using new hardware, the AMI system will be capable of sending alarms and alerts to the utility when tampering occurs at a meter. Advanced meters can detect reverse flow, cut wires, and other adverse conditions that signify theft. Based on AWWA estimates, theft can be averted to the order of about 0.25% of normal authorized consumption. Theft detection savings are estimated below in Table 8.

Table 8: Theft Detection and Aversion

Theft Detection and Aversion			
Water Consumption (Acre-Feet/Year)	Theft Aversion Rate	Savings (Acre-Feet/Year)	Comments
12,505.27	0.25%	31.26	Based on AWWA Water Loss Audit Software Estimates

$12,505.27 \times 0.25\% = 31.26 \text{ Acre-Feet/Year Savings}$

*b. How have current distribution system losses and/or the potential for reductions in water use by individual users been determined?*

Determination of water losses described are conducted in the aggregate. Individual user losses are not included in the savings discussed in this application.



*c. For installing end-user water service meters, e.g., for a residential or commercial building unit., refer to studies in the region or in the applicant’s service area that are relevant to water use patterns and the potential for reducing such use. In the absence of such studies, please explain in detail how expected water use reductions have been estimated and the basis for the estimations.*

The basis for expected water use reductions is included in the response to question a, of this section. For the determination of meter accuracy related savings, a commissioned study was used. Otherwise, no specific study was available for the State of Oklahoma, Cleveland County area. As such, industry studies and figures from E Source were used that relied on data from other AMI projects across the country. Due to potential differences in these studies as compared to specific water use patterns in the Norman area, additional conservatism in calculations was used to avoid overestimating potential water savings.

*d. Installation of distribution system meters will not receive points under this criterion. Accordingly, these projects must be paired with a complementary project component that will result in water savings in order for the proposal to receive credit for water savings, e.g., pipe installation using upgraded materials, or individual water service meters.*

Not applicable. No AMI distribution main meters will be installed.

*e. What types (manufacturer and model) of devices will be installed and what quantity of each?*

The AMI implementation project will replace the 41,000 existing meters with advanced metering infrastructure and applicable meters. While the AMI solution has yet to be selected, planning for procurement activities has begun. NUA has identified specific attributes that are desirable and specific to the organization and its customer base. These include a fixed network AMI communication system and positive displacement or “solid-state” water metering technology such as ultrasonic or electromagnetic. NUA plans to solicit proposals for AMI, MDMS, meter installation services and a customer portal. NUA will also include a preference for remote disconnect, pressure monitoring and leak detection as an optional technology for the vendors to bid on. As with any project of this magnitude, it is important to thoroughly vet and select vendors that are the suitable fit for NUA.

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

As previously described, water savings will be identified by using the NUA audit and report for annual water loss based on AWWA guidelines. This audit compares the amount of water produced to metered water sales and authorized non-metered usage to calculate unaccounted for or lost water. Post completion, NUA will perform a new water audit and analyze the results of the report along with comparisons. This will enable NUA to identify specific reductions in the amount of metered water sales, unaccounted for or lost water, and demand that is the result of the AMI implementation project.





## Evaluation Criterion B: Renewable Energy (20 points)

*Up to 20 points may be awarded based on the extent to which the project increases the use of renewable energy or otherwise results in increased energy efficiency and reduced greenhouse gas emissions.*

*For projects that include constructing or installing renewable energy components, please respond to Subcriterion No. B.1: Implementing Renewable Energy Projects Related to Water Management and Delivery. If the project does not implement a renewable energy project but will increase energy efficiency, please respond to Subcriterion No. B.2. Increasing Energy Efficiency in Water Management. If the project has separate components that will result in both implementing a renewable energy project and increasing energy efficiency, an applicant may respond to both.*

### Subcriterion No. B.2 – Increasing Energy Efficiency in Water Management

*Up to 10 points may be awarded for projects that address energy demands and reduce greenhouse gas emissions by retrofitting equipment to increase energy efficiency and/or through water conservation improvements that result in reduced pumping or diversions.*

*Describe any energy efficiencies that are expected to result from implementation of the water conservation or water efficiency project (e.g., reduced pumping).*

*If quantifiable energy savings is expected to result from the project, please provide sufficient details and supporting calculations. If quantifying energy savings, please state the estimated amount in kilowatt hours per year.*

NUA expects to realize carbon energy savings as a result of the AMI implementation project. NUA currently pays a monthly bill for electricity usage at its facilities. With the addition of AMI, NUA is prepared to see a reduction in the amount of water being processed and delivered at any given time, which will result in reduced electricity usage. This decrease can be further compounded by the improved and optimized routines that will be designed during the project to leverage consumption demand data.

See [Table 9](#) for more details on the anticipated savings from reduced pumping.

*Table 9: Water Treatment and Delivery Energy Savings*

Treatment and Delivery Energy Savings			
Annual kWh	Savings	kWh Reduction	Comments
3,163,584.00	5%	158,179.20	Based on E Source Industry Estimates

$$3,163,584 \times 5\% = 158,179.20 \text{ kWh Reduction}$$



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

NUA will realize a reduction in carbon emissions due to the reduction of truck rolls needed to visit customer premises to collect meter reads and respond to other service disruptions. Table 10 includes CO2 savings information.

Table 10: Vehicle Greenhouse Gas Reduction Savings

Vehicle Greenhouse Gas Reduction				
Annual Miles	Truck MPG	CO2 Emissions per Gallon (Grams)	Total CO2 Averted (Grams)	Total CO2 Averted (Metric Tons)
49,767.60	18	8,887.00	24,571,370.07	24.57

$$49,767.60 / (18 \times 8,887) = \mathbf{24,571,370.07 \text{ Grams of CO2 Averted or } 24.57 \text{ Metric Tons of CO2 Averted}}$$

The metric tons of CO2 saved per year can be determined by finding the product of the following values:

- Average miles per read truck roll is 0.1 mile for each of the 41,473 customer accounts
- Effective miles per gallon of gasoline is 18 MPG
- 12 monthly readings per meter per year
- 8,887 grams of CO2 per gallon of gasoline

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

Norman utilizes Lake Thunderbird, 32 water wells drilled into the Garber Wellington Aquifer and purchases one million gallons per day from Oklahoma City to meet everyday water needs. Ground water is pumped from the Garber Wellington Aquifer directly into the water distribution system with the exception of a few wells. Feasibility data is being collected to possibly combine several wells that are not active.<sup>3</sup>

As stated, NUA expects a 5% reduction in energy usage as a result of this project. As of September 2021, NUA can show production levels as high as 18.90 million gallons of water across plants and wells. Though projections on water savings are substantially

<sup>3</sup> <https://www.normanok.gov/sites/default/files/documents/2020-05/2016%20Water%20Conservation%20Plan%205%2010%2016%20for%20website.pdf>



more than 5%, NUA is aware that some overhead electricity will be required to maintain normal operations, even at decreased throughput.

NUA anticipates the opportunity to manage pumping routines based on granular knowledge of customer usage post-AMI. Current pump information can be found in APPENDIX F.

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

Energy savings will result both at the point of diversion at Lake Thunderbird, which is managed by the COMCD of which the NUA pays 43% of the operating costs, and at the groundwater wells. Additionally, energy savings would be realized at the water treatment plant where treated water is pumped into the distribution system.

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

Yes, the calculation includes all energy related to treatment and delivery at the NUA's facilities.

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

As referenced above, NUA expects to see a reduction in vehicle miles driven due to the reduced need for truck rolls with the implementation of AMI. Based on the assumptions and calculations made above, NUA anticipates 24,571,370.07 Grams of CO<sub>2</sub> averted.

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

Solar is a viable option for AMI collectors, repeaters, and other network components. The NUA intends explore solar options, eliminating the need for alternating current (AC) power during the procurement process.

## **Evaluation Criterion C: Sustainability Benefits (20 points)**

*Up to **20 points** may be awarded under this criterion. This criterion prioritizes projects that address a specific water and/or energy sustainability concern(s), including enhancing drought resilience, addressing the current and future impacts of climate change, and resolving water related conflicts in the region. In addition, this criterion is focused on the benefits associated with the project, including benefits to tribes, ecosystem benefits, and other benefits to water and/or energy supply sustainability.*

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



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

By focusing on customer (usage) and utility (operational) conservation efforts, the proposed project will indirectly improve ecological resiliency to climate change.

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

The conserved water resulting from the 14.98% annual water production savings mentioned above will improve the resiliency of Norman’s current water sources. Consequently, the additional water will help maintain sufficient levels in the Lake Thunderbird watershed, Garber Wellington Aquifer, Oklahoma City surface reservoirs and the Canadian River.

*Will the project benefit species (e.g., federally threatened or endangered, a federally recognized candidate species, a state listed species, or a species of particular recreational, or economic importance)? Please describe the relationship of the species to the water supply, and whether the species is adversely affected by a Reclamation project or is subject to a recovery plan or conservation plan under the Endangered Species Act (ESA).*

The Arkansas River Shiner (ARS) has been listed as federally threatened since 1998. The ARS is a small, streamlined minnow that’s native to the main channels of wide, shallow sand-bottomed rivers and larger streams of the Arkansas River Drainage Basin.

Over time, the species lost over 80% of its habitat. Consequently, it’s now currently found only along the Canadian River in Arkansas, Kansas, New Mexico, in Oklahoma and Texas.<sup>4</sup>

According to the U.S. Fish & Wildlife Service, “habitat loss and destruction, water quality degradation, and reduced stream flow have all negatively affected this species, primarily due to diversion of surface water, groundwater pumping, and construction of impoundments. Competition, accidental capture, drought, and other natural causes may also have contributed to the decline in populations.”<sup>5</sup>

The ARS received a “Critical Habitat” designation in 2001<sup>6</sup>. Critical habitat indicates geographic areas with features that are essential to the conservation of a species. Partnerships focused on conserving the quality and quantity of water have been implemented within the ARS range. Fish surveys, including those completed by U.S. Fish and Wildlife Service and Students from the University of Oklahoma, are conducted to monitor the effectiveness current conservation efforts and provide information to better recover the species.

<sup>4</sup> <https://www.govinfo.gov/content/pkg/FR-2020-03-19/pdf/2020-05753.pdf#page=1>

<sup>5</sup> <https://www.fws.gov/arkansas-es/Species/Fish/ARRshiner.html>

<sup>6</sup> <https://www.fws.gov/mountain-prairie/pressrel/2001/01-11.htm#:~:text=%22As%20a%20threatened%20species%2C%20the,director%20for%20the%20Southwest%20Region.>



The reduction of ground water pumping and overall water savings due to the AMI implementation project will help to conserve the ARS' habitat.

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

Not applicable.

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

Yes, AMI will provide:

- As previously mentioned, the opportunity to manage pumping routines based on granular knowledge of customer usage.
- The ability to mass balance water pressure zones by comparing the amount of water entering a pressure zone compared to the amount of water measured by AMI that is being used by customers. This facilitates water loss analysis.
- The capability to install water pressure devices on the AMI network to better understand system pressures for better pressure management.

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

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

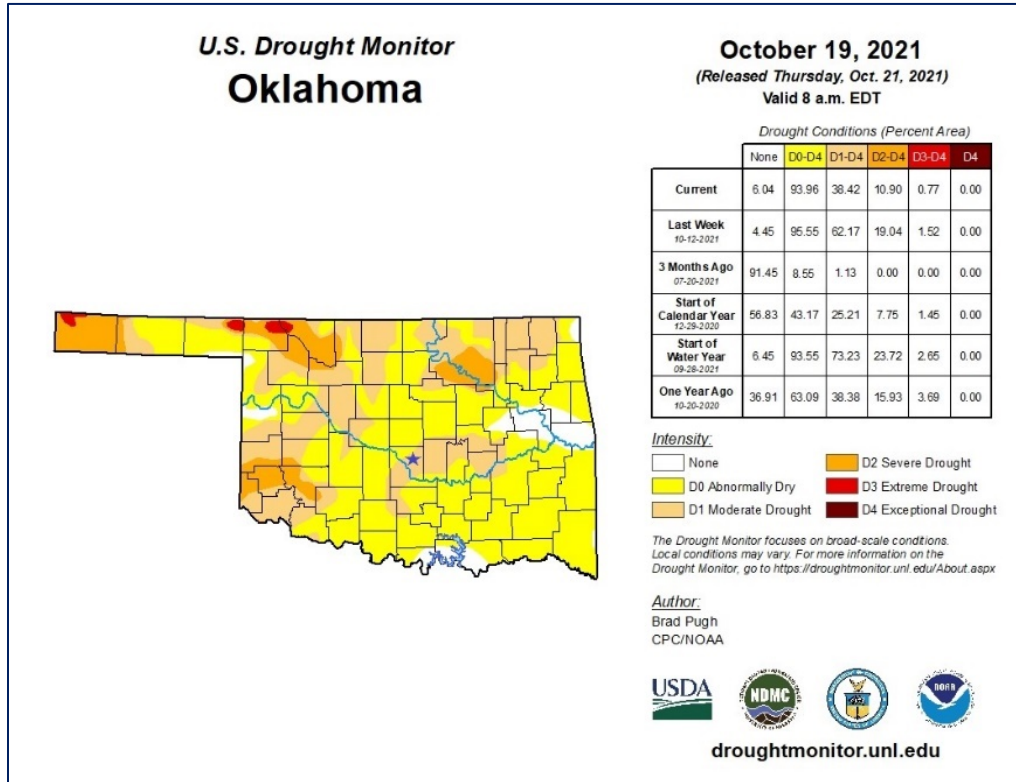
According to the U.S. Drought Monitor, the majority of Cleveland County ranges between the D0 – Abnormally Dry and the D1 – Moderate Drought categories. Depending on the location, D0 characteristics include stressed crops and a decline in stock pond levels. D1 characteristics consist of reduced summer crop and forage yields, increased wildfire risk, impacted lake recreation activities and poor deer reproduction.<sup>7</sup> The blue star in Figure 3 identifies Cleveland County in the drought condition map below.

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<sup>7</sup> <https://www.drought.gov/states/oklahoma>



Figure 3:  
 Oklahoma U.S.  
 Drought Status



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

The Oklahoma Department of Environmental Quality (ODEQ) designated Lake Thunderbird as a Sensitive Water Supply in (SWS) in 2002. The 6,070-acre reservoir was classified as impaired due to low oxygen levels and high levels of algae (chlorophyll a) and sediment (turbidity).

According to the ODEQ, “The federal Clean Water Act and related regulations require total maximum daily loads (TMDLs) be developed for impaired waterbodies on a state’s 303(d) list. TMDLs provide goals and guidelines to improve the water quality in these waterbodies. TMDLs for nutrients, turbidity, and dissolved oxygen were completed by DEQ and received Environmental Protection Agency (EPA) approval on November 13, 2013. The TMDLs specify the pollutant load reduction from MS4 permits and non-point sources for the lake to achieve water quality standards.”<sup>8</sup>

<sup>8</sup> <https://www.deq.ok.gov/water-quality-division/watershed-planning/tmdl/lake-thunderbird-tmdl-project/#~:text=Lake%20Thunderbird%20is%20located%20east,%2C%20Oklahoma%20City%2C%20and%20Moore.&text=It%20was%20designated%20as%20a,State%20of%20Oklahoma%20in%202002.>



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

### **Drought Conditions**

Although the City of Norman hasn't experienced severe drought conditions since 2013, NUA has a Drought Contingency Plan in place as part of the [City of Norman Water Conservation Plan 2016](#) (plan update currently in progress). AMI data and conservation tips on the customer portal will empower customers to proactively manage their water usage. This will not only save them money, but also reduce the impacts of drought conditions.

The Bureau of Reclamation (BOR) recently reduced the Lake Thunderbird firm yield to 12,700 acre-feet per year, with NUA's share being 43.8%. The BOR defines firm yield as "the maximum volume of water that can be delivered each year during the drought of record without the reservoir going into the inactive pool ('dry')." While this does not require immediate action from NUA, it will impact water supply availability during severe drought. The water saved through the AMI implementation project will decrease demand and require less of a draw of water from Lake Thunderbird, NUA's primary source of water. The project will also reduce the need for groundwater pumping from wells. This will directly support the city's conservation plan and will add to its resiliency against possible future severe drought conditions.

Additionally, AMI data (e.g., detailed usage trends, system failure reports etc.) will also allow the NUA team to take a proactive approach to drought preparedness and asset management.

### **Pollution**

Lake Thunderbird has made progress since 2002, but there's still opportunities to engage the community about maintaining a clean water supply. NUA already promotes water conservation along with pesticide and fertilizer reduction activities as part of their efforts to maintain a cleaner environment. The AMI customer portal would provide a viable channel for NUA to highlight actionable steps to reduce water pollution.

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

The conserved water will simply be left in the lake, river system, and regional aquifers for environmental benefit or use by NUA as future growth occurs or by others.



*Provide a description of the mechanism that will be used, if necessary, to put the conserved water to the intended use.*

The AMI system will facilitate water conservation, but no specific mechanism will be necessary to put the conserved water to the intended use. Rather, this conserved water will be used to meet future demands more efficiently.

*Indicate the quantity of conserved water that will be used for the intended purpose(s).*

The AMI implementation project will conserve an estimated 1,719.36 AFY and 34,387.20 AFY over the 20-year useful lifespan of the AMI system. This conserved water will significantly help the NUA meet its water supply needs since the NUA's portion of the firm yield for Lake Thunderbird has been reduced from 9,460 AFY to 5,562 AFY based on recent analysis by the BOR.

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

**(1) Combating the Climate Crisis: E.O. 14008: Tackling the Climate Crisis at home and abroad, focuses on increasing resilience to climate change and supporting climate-resilient development.**

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

The oil and gas industry has traditionally played a major role in communities across the state of Oklahoma. By reducing energy usage (for pumping) and potentially utilizing solar energy to power the AMI network, NUA can contribute to the use of renewable clean energy in contrast to fossil fuels.

*The water conserved from AMI can be used to extend the life of the Arkansas River Shiner and the ecosystem that makes up its critical environment. Does this proposed project strengthen water supply sustainability to increase resilience to climate change?*

The AMI implementation project will strengthen NUA water supply sustainability by providing several benefits that result in the water savings mentioned in response to [Evaluation Criterion A](#). Conserving water will extend the life of the various resources used to supply water, especially if global warming causes drought conditions to arise.

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

As previously mentioned, potentially utilizing solar AMI collectors, repeaters, and other network components would allow NUA to establish and utilize a renewable energy source as part of the AMI implementation project.

*Will the project result in lower greenhouse gas emissions?*

Yes, AMI will directly result in a reduction in 24,571,370.07 grams of CO<sub>2</sub> averted or 24.57 metric tons of CO<sub>2</sub> averted carbon emissions due to the reduction of truck rolls. Additionally, the estimated energy reduction for pumping will indirectly result in reduced





greenhouse gas emissions from the power generating facilities that supply power to the pumping facilities.

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

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

According to 2019 US Census Bureau data, 17.6%<sup>9</sup> of the population of Norman lives in poverty. This is 5.3% higher than the national poverty average of 12.3%<sup>10</sup>. The city's long-term commitment to renewable energy in conjunction with new AMI functionality/service offerings (e.g., pre-pay, high bill alerts, online portal access etc.) will make essential utility services more financially feasible. The AMI implementation project will provide opportunities for all residents, including, disadvantaged and historically underserved customers, to better manage their water use, reduce waste and save money to spend on other important needs.

Please note: Norman currently has a low-income rate in place to support equity among customer classes.

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

The City of Norman does not meet the disadvantaged community definition in Section 1015 of the Cooperative Watershed Act because the median household income (2015-2019) in Norman was \$58,119. This surpasses the median household (2015-2019) income for Oklahoma, which was \$52,919 by 9.8%.

<sup>9</sup> <https://www.census.gov/quickfacts/normancityoklahoma>

<sup>10</sup> <https://okpolicy.org/census-data-shows-oklahoma-still-lags-nation-in-poverty-rate/>



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

Not applicable.

**(3) Tribal Benefits:** *The Department of the Interior is committed to strengthening tribal sovereignty and the fulfillment of Federal Tribal Trust responsibilities. The President’s memorandum “Tribal Consultation and Strengthening Nation-to-Nation Relationships” asserts the importance of honoring the federal government’s commitments to Tribal Nations. Please address the following, if applicable:*

*a. Does the proposed project directly serve and/or benefit a Tribe? Will the project increase water supply sustainability for an Indian Tribe? Will the project provide renewable energy for an Indian Tribe?*

No, this project will not directly serve and/or benefit a Tribe. American Indian and Alaska Natives account for 3.8%<sup>11</sup> of the City of Norman’s population, but NUA’s service territory does not include tribal lands.

*b. Does the proposed project directly support tribal resilience to climate change and drought impacts or provide other tribal benefits such as improved public health and safety through water quality improvements, new water supplies, or economic growth opportunities?*

Not applicable. See the response to (3) Tribal Benefits a. for further details.

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

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

The NUA AMI implementation project will assist water users in Oklahoma, New Mexico, and Texas in complying with Canadian River Compact. Administered by the Canadian River Commission, the three states created the compact in 1950 to protect existing developments and to sanction additional conservation activities on Canadian River. It also stipulates access and storage rights among the three states.

Under the compact, Oklahoma and New Mexico are allowed free and unrestricted use of the waters of the Canadian River within their designated territories. Conversely, Texas’ access the waters is based on a priority use schedule and Oklahoma’s water supply availability.

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<sup>11</sup> <https://www.normanok.gov/about-norman/demographics-and-characteristics#:~:text=White%3A%2090%2C583%2081.1%25,and%20Alaska%20Native%3A%204%2C238%203.8%25>



“Overall, the Canadian River watershed faces severe climate change risks. The area is very dry, and groundwater is rapidly being depleted. However, because population growth is not significant, water resources have been sufficient relative to demand. Climate change is expected to make the region warmer and drier, further stressing water resources,” according to *Interstate Water Compacts and Climate Change Adaptation*.<sup>12</sup>

Increased water conservation will allow NUA to continue using sources other than the Canadian River for water. This factor coupled with slower state population growth will increase the resiliency of the Canadian River supply for Texas (the third fastest growing state in the nation<sup>13</sup>) and New Mexico (which is currently experiencing severe and extreme drought conditions<sup>14</sup>). NUA looks forward to not only using AMI to serve its customers better, but also mitigating the expected impacts of climate change in the region that pose considerable risk for water users in the coming years.

Please note: the state of Oklahoma is included in multiple compacts including the Arkansas River Compact of 1965, Arkansas River Basin Compact of 1970 and Red River Compact. The Canadian River Compact was highlighted in this response because it's directly related to NUA's water supply.

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

Yes, the AMI implementation project will benefit the following sectors:

- **Recreational** – Benefits in the city generally translate to parks and recreation (e.g., watering of public flower beds, swimming pools etc.). Water use in public areas can be better monitored and managed through AMI equating to reductions in water usage and expenses for this department.
- **Environmental** – Reductions in carbon emissions and reductions in street traffic loads from fewer utility vehicle miles driven contributes to environmental benefits.
- **Municipal and Industrial** – The ability to access granular water usage history day, and night, to identify water waste within facilities / buildings benefits the city and its businesses.

*c. Will the project benefit a larger initiative to address sustainability?*

Norman approved the Mayor's Climate Protection Agreement originally in 2005 and the updated agreement in 2018 identifying sustainability improvements for the City of Norman to combat climate change. Additionally, in May 2018, Norman was the first city in the state to commit to transition to 100% clean renewable energy like wind and solar for electricity by 2035 and across all sectors including heat and transportation by 2050.

<sup>12</sup> <https://digitalcommons.wayne.edu/cgi/viewcontent.cgi?article=1185&context=lawfrp>

<sup>13</sup> <https://cbsaustin.com/news/local/texas-is-the-3rd-fastest-growing-state-according-to-new-census-data>

<sup>14</sup> <https://www.drought.gov/states/new-mexico>



This initiative has been labeled Ready for 100 Norman. By embracing clean energy and increasing sustainability efforts, the City of Norman hopes to create a more equitable, healthy, prosperous, and vibrant community.

NUA has taken the first step to support this sustainability initiative by starting a project to install solar arrays at its water treatment plant and water reclamation facility to reduce the amount of energy being used. Table 11 includes the latest solar offset calculations at NUA treatment facilities.

Table 11: Water Treatment Solar Offset Calculations

ARRAYS	System Size (kW)	Meter Information Meter #	Annual kWh	Expected Solar Production	% Offset by Solar
Solar Array 1 - Water Treatment Plant	300	128899922	2,354,560	473,100	20%
Solar Array 2 - Water Treatment Plant	300	128899957	2,051,814	473,100	23%
Solar Array 1 - Water Reclamation Facility	300	56966409G	480,518	473,100	98%
Solar Array 2 - Water Reclamation Facility	300	68743480G	1,267,233	473,100	37%
Solar Array 3 - Water Reclamation Facility	500	52304056G	3,289,816	788,500	24%
Solar Array 4 - Water Reclamation Facility	300	56965632G	1,644,699	473,100	29%
Solar Array 5 - OEC Net Meter	270	11998945	536,400	425,790	79%
<b>Totals</b>			<b>11,625,040</b>	<b>3,579,790</b>	<b>31%</b>

The AMI implementation project will build upon this effort by reducing greenhouse gas emissions, potentially utilizing solar power, and lowering energy usage for pumping.

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

In 2010, the City of Norman and the NUA was sued by the COMCD for overuse of its allocation from Lake Thunderbird. Following this lawsuit, the NUA was held firm to its allocation from the reservoir or was required to obtain temporary water permits from the Oklahoma Water Resources Board (OWRB) during periods of increased water availability or through purchase of water from other member utilities of the COMCD from their unused allocation. Recent conditions have been without litigation, but litigation can



be assumed to become more frequent as demand increases and water supplies become more critical.

Litigation has occurred on a regional basis as well with disputes between the state of Oklahoma, local Native American Tribes, and other states in the past. An extended three-year drought plagued the region from 2010-2013. During that time, Oklahoma took part in litigation, which eventually led to mediation, with Native American tribes over southeast Oklahoma water. Texas, Oklahoma's neighbor, and fellow compact member took their Red River water supply dispute to the United States Supreme Court. The court ultimately ruled in favor of Oklahoma. Texas also challenged New Mexico and Mexico for water during that drought.<sup>15</sup>

Many of the local disputes went through the OWRB at that time. This led the agency to draft the [2012 Oklahoma Comprehensive Water Plan](#). A portion of the plan details an OWRB water demand analysis that accounts for factors that would impact Oklahoma's water supply until 2062.

The following excerpt regarding conservation aligns with NUA's current practices (i.e., education programs, conservation programs etc.) and the previously stated benefits of the AMI implementation project (i.e., metering accuracy, timely usage data and leak detection):

“An important tool in managing water resources, water conservation can be implemented on both the demand and supply/distribution sides of water management. Municipal and industrial demand side conservation techniques reduce water demand by changing consumer behavior through implementing education programs, promoting the use of water efficient appliances, and employing conservation pricing. Supply or distribution conservation involves effective management of system water losses through metering, analysis of water use, and leak detection. Reduced water demand from conservation prolongs the lifespan of current supplies, allowing utilities to defer, downsize, or even eliminate costly investment in new facilities and water supplies. Customers benefit from conservation through reduced water and energy utility bills.”

NUA plans to use the lessons learned from that past drought experiences to implement AMI and play a proactive role in preventing another water-related crisis or conflict from occurring in the future.

## **Evaluation Criterion D: Complementing On-Farm Irrigation Improvements (10 points)**

*Up to **10 points** may be awarded for projects that describe in detail how they will **complement on-farm irrigation improvements** eligible for NRCS financial or technical assistance.*

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<sup>15</sup> <https://www.texastribune.org/2013/06/13/supreme-court-decides-texas-oklahoma-water-case/#:~:text=The%20U.S.%20Supreme%20Court%20on,against%20the%20state%20of%20Oklahoma>.



*Note: Scoring under this criterion is based on an overall assessment of the extent to which the WaterSMART Grant project will complement ongoing or future on-farm improvements. Applicants should describe any proposal made to NRCS, or any plans to seek assistance from NRCS in the future, and how an NRCS-assisted activity would complement the WaterSMART Grant project. Financial assistance through EQIP is the most commonly used program by which NRCS helps producers implement improvements to irrigation systems, but NRCS does have additional technical or financial assistance programs that may be available. Applicants may receive maximum points under this criterion by providing the information described in the bulletpoints below. **Applicants are not required to have assurances of NRCS assistance by the application deadline to be awarded the maximum number of points under this sub- criterion.** Reclamation may contact applicants during the review process to gather additional information about pending applications for NRCS assistance if necessary.*

This project will not complement on-farm irrigation improvements.

## **Evaluation Criterion E: Planning and Implementation (8 points)**

*Up to **8 points** may be awarded for these sub criteria.*

### **Subcriterion E.1 – Project Planning**

*Points may be awarded for proposals with planning efforts that provide support for the proposed project.*

**Does the applicant have a Water Conservation Plan and/or System Optimization Review (SOR) in place? Does the project address an adaptation strategy identified in a completed WaterSMART Basin Study?** *Please self-certify or provide copies of these plans where appropriate to verify that such a plan is in place. Including a specific excerpt or a link to the planning document may also be considered where appropriate.*

*Provide the following information regarding project planning:*

*(1) Identify any district-wide, or system-wide, planning that provides support for the proposed project. This could include a Water Conservation Plan, SOR, Drought Contingency Plan or other planning efforts done to determine the priority of this project in relation to other potential projects.*

The Capital Improvements Plan (CIP) is the schedule established by the City of Norman that identifies the major improvement projects and schedules them to fit its fiscal capabilities for five years into the future. Annual reviews are made of the capital improvement projects budget and plan, and the plan is extended one year, to maintain a six-year schema. The CIP in the City’s [FYE 2022 Capital Improvement Projects Budget](#) features the AMI implementation project.



*(2) Describe how the project conforms to and meets the goals of any applicable planning efforts and identify any aspect of the project that implements a feature of an existing water plan(s).*

The projects in the CIP align must align with the goals and policies defined in the [City of Norman’s 2025 Land Use and Transportation Plan](#). These general policies are determined through an extensive citizen participation process and Council action; and documented in the long-range general plan for the city.

The AMI implementation project supports the following 2025 Land Use and Transportation Plan goals related to capital improvements:

- Goal: Affirmatively and responsibly manage the location of growth in Norman based on available public services and environmental suitability of the land for development.
  - The selected AMI vendors will complete a propagation analysis to ensure all collector/tower locations facilitate effective communication with meters at both current and future service locations across NUA’s service territory
- Goal: Utilize the provision of infrastructure in supporting and influencing growth into areas most suitable for development.
  - Upgrading to advanced metering infrastructure will allow NUA and its customers to use the latest technology to conserve water, which will support Norman’s water supply as the city expands and develops.
- Goal: Encourage and support diversified housing types and densities in order to serve different income levels, family structures and ownership.
  - As previously stated, the AMI implementation project will provide opportunities for residents at different income levels to better manage their water use, reduce waste and save money to spend on other important needs.
- Goal: Retain the distinct character of rural Norman and protect the environmentally sensitive Little River Drainage Basin.
  - The sustainability benefits mentioned in response to [Evaluation Criterion C](#) (e.g., water conservation, renewable energy, reduction of pollution etc.) will help the city to retain the distinct character of rural Norman and protect the environmentally sensitive Little River Drainage Basin.

*(3) If applicable, provide a detailed description of how a project is addressing an adaptation strategy specifically identified in a completed WaterSMART Basin Study or Water Management Options Pilot (e.g., a strategy to mitigate the impacts of water shortages resulting from climate change, drought, increased demands, or other causes)*

Not applicable.

#### Subcriterion E.2 – Readiness to Proceed

*Points may be awarded based upon the extent to which the proposed project is capable of proceeding upon entering into a financial assistance agreement. Please*



*note, if your project is selected, responses provided in this section will be used to develop the scope of work that will be included in the financial assistance agreement.*

*Applications that include a detailed project implementation plan (e.g., estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates) will receive the most points under this criterion.*

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

**Note: please do not repeat the more detailed technical project description provided in Section D.2.2.4.; this section should focus on a summary of the major tasks to be accomplished as part of the project.**

- November 2021: Prepare request for proposals, evaluate vendor responses, and conduct contract negotiations
- Spring 2022: Award notification from Bureau of Reclamation
- October 2022: Begin initial deployment area (IDA) with a small group of meters for further verification/testing
- February 2023: Complete IDA testing and begin to acquire production quantities of meters/modules
- March 2023: Start mass deployment of meters
- November 2024: Complete mass deployment of meters

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

There are currently no anticipated requirements for permits or approvals by any government body for the AMI implementation project. If for some reason the project requires any local approvals, or building permits, the city is confident that those can be attained easily.

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

No additional engineering or design work is necessary as part of this AMI implementation project. Engineering and design work is essentially complete at this time.

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

None.





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

An estimated project schedule is provided as Figure 4 below:

Figure 4: Project Schedule



### Evaluation Criterion F: Collaboration (6 points)

Up to **6 points** may be awarded for projects that promote and encourage collaboration among parties in a way that helps increase the sustainability of the water supply.

Please describe how the project promotes and encourages collaboration. Consider the following:

*Is there widespread support for the project? Please provide specific details regarding any support and/or partners involved in the project. What is the extent of their involvement in the process?*

NUA has broad support for the project from various groups and individuals. Advocates include:

- Businesses represented by the Norman Chamber of Commerce
- Local water management and environmental sustainability organizations such as the COMCD, Environmental Control Advisory Board and Oklahoma Water Survey at the University of Oklahoma
- Government officials including United States Senator James (Jim) Inhofe, United States Congressman Tom Cole, and the City of Norman City Council



Each of these advocates understands the economic and environmental benefits of the AMI implementation project to the City of Norman. Please see detailed letters from the aforementioned supporters in APPENDIX A.

*What is the significance of the collaboration/support?*

It is important to have the support of the groups/individuals mentioned above when taking on a large-scale project like AMI. Replacing aging infrastructure is a vital part of NUA’s responsibility to its customers. Without community backing at all levels, the project would not be nearly as successful, nor the benefits fully realized in the long-term.

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

Yes, the effective implementation of projects such as the AMI implementation will serve as an example to other water users. NUA is prepared to document its experience so neighboring water utilities can observe and understand the benefits (and potential challenges) of implementing an AMI system. This will encourage them to deploy an AMI system that will contribute to further water conservation both in the region and around the country.

**Evaluation Criterion G: Additional Non-Federal Funding (4 points)**

*Up to 4 points may be awarded to proposals that provide non-Federal funding in excess of 50 percent of the project costs. State the percentage of non-Federal funding provided using the following calculation:*

$$\frac{\$13,800,000 \text{ (Non-Federal Funding)}}{\$15,800,000 \text{ (Total Project Cost)}}$$

The non-federal cost-share is 87.3% of the total cost and will be paid by NUA funding sources. This is greater than the required 50% match.

**Evaluation Criterion H: Nexus to Reclamation (4 points)**

*Up to 4 points may be awarded if the proposed project is in a basin with connections to Reclamation project activities. No points will be awarded for proposals without connection to a Reclamation project or Reclamation activity.*

**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 Lake Thunderbird Water Reuse - Field Research Project for Inland Indirect Potable Reuse is backed by a \$700,109 Bureau of Reclamation grant. The resulting research will



lead to increased water management flexibility and more reliable western water supplies.

*If the applicant is not a Reclamation contractor, does the applicant receive Reclamation water through a Reclamation contractor or by any other contractual means?*

A portion of NUA’s water supply comes from Lake Thunderbird, a Reclamation reservoir that’s currently maintained by the Central Oklahoma Master Conservancy District.

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

The water savings resulting from the AMI implementation project strengthen the resiliency of Lake Thunderbird.

*Is the applicant a Tribe?*

No, NUA is a division of the City of Norman municipality.

## PERFORMANCE MEASURES

*Points may be awarded based on the description and development of performance measures to quantify actual project benefits upon completion of the project.*

*Provide a brief summary describing the performance measure that will be used to quantify actual benefits upon completion of the project (e.g., water saved or better managed, energy generated or saved). For more information calculating performance measure, see Appendix A: Benefit Quantification and Performance Measurement Guidance.*

*All Water and Energy Efficiency Grants applicants are **required** to propose a “performance measure” (a method of quantifying the actual benefits of their project once it is completed). A provision will be included in all assistance agreements with Water and Energy Efficiency Grants recipients describing the performance measure and requiring the recipient to quantify the actual project benefits in their final report to Reclamation upon completion of the project. If information regarding project benefits is not available immediately upon completion of the project, the financial assistance agreement may be modified to remain open until such information is available and until a Final Report is submitted. Quantifying project benefits is an important means to determine the relative effectiveness of various water management efforts, as well as the overall effectiveness of Water and Energy Efficiency Grants.*

*Note: program funding may be used to install necessary equipment to monitor progress. However, program funding may not be used to measure performance after project construction is complete (these costs are considered normal operation and maintenance costs and are the responsibility of the applicant).*



## Performance Measure A.2: Projects with Quantifiable Water Savings

*Good water management requires accurate and timely water measurement at appropriate locations throughout a conveyance system. This includes irrigation delivery systems and municipal distribution systems.*

### *Performance Measure A.2.a. Measuring Devices: Municipal Metering*

**For projects that install or replace existing municipal end-user water service meters, the applicant should consider the following:**

*Whether the project includes new meters where none existed previously or replaces existing meters*

The AMI implementation project replaces 41,000 existing meters with AMI meters.

*Whether the project includes individual water user meters, main line meters, or both*

The AMI implementation project includes the deployment of individual water user meters only.

*If the project replaces existing individual water user meters with new meters, whether new technologies (automatic meter reading or AMI meters) will be employed*

AMI meters will replace existing manual read and AMR meters.

*Include a description of both pre- and post-project rate structuring.*

*Note: Distribution system meters will not receive points for quantifiable water savings under Evaluation Criterion A: Quantifiable Water Savings. Accordingly, these projects must be paired with a complementary project component that will result in water savings in order for the proposal to be receive credit for water savings, e.g., pipe installation using upgraded materials, or individual water service meters.*



NUA’s current rate structure includes a \$6.00 base fee per unit for both residential and commercial customers. The additional charges are tiered based on the amount of water used (in gallons). See [Figure 5](#) for the NUA water rate structure as noted on the utility website.

*Figure 5: Norman Water Reuse Rate Structure*

*Residential*

- \$6.00 Base Fee per Unit
- \$3.35 per 1,000 up to 5,000 gallons
- \$4.10 per 1,000 for 5,001 to 15,000 gallons
- \$5.20 per 1,000 for 15,001 to 20,000 gallons
- \$6.80 per 1,000 over 20,000
- Low Income Rate - \$4.50 Base Fee and \$2.5125 per 1000 up to 5,000 gallons; normal rates after 5,000 gallons (must qualify based on Federal Guidelines)
- High Usage Surcharge of \$0.35 per 1,000 gallons of water usage for each 1,000 gallons used by a household that is in excess of 20,000 gallons for each month during the months of July and August

*Commercial*

- \$6.00 Base Fee per Unit
- \$3.80 per 1,000 gallons (up to the user's average winter consumption)
- \$4.20 per 1,000 gallons (for usage exceeding the user's average winter consumption)

The type of account is determined based on the zoning or use. Residentially zoned areas are charged the residential rates, with the exception of a high usage surcharge being billed for every 1,000 gallons used by households in excess of 20,000 gallons for each month during July and August.

Areas zoned as commercial or industrial are charged the commercial rate. For commercial customers, the average winter consumption is used rather than the inclining block rates because each business type is different and so their water use varies. For example, a restaurant will certainly use more water than a fabric store, but this doesn’t mean they should be pushed to the highest tier. Therefore, each business is compared to their individual winter average.

When setting the rates, it is a balance of spreading the costs over the various tiers to reliably generate the required revenue necessary to meet ongoing operations & maintenance (O&M) and capital costs while spreading the impact to all rate classes.

No rate structure changes are planned for water rates post-project at this time. The specific rate charged may change/increase, but the structure will remain unchanged. In the future, the available AMI consumption data will enable NUA to determine when changes should be made to enhance conservation and better match costs of service. The available data will also assist customers to make more informed decisions about their usage and to conserve, when possible, to avoid additional cost(s).



### Overall Performance Measures

Estimated avoided costs and recouped revenues are back calculated based primarily on actual cost of business or industry best estimates relative to NUA’s size and demographics. [Table 12](#) summarizes all quantitative benefits areas, their value driver with key calculation assumptions (which can be used for benefits verification) and annual value after the first full year of system deployment (for the moderate AMI scenario).

*Table 12: AMI Project Performance Measures*

<b>Benefit</b>	<b>Assumptions(s)</b>	<b>Annual Benefit</b>
Theft Identification	0.25% Revenue Impacts	\$52,750
Meter Scrap Value	\$1.25/lb. Market Rate	\$84,820
Public Outreach Cost Reduction	2.5% Reduction for Special Communications Materials	\$6,320
Conservation Savings and Avoided Costs	2.5% Reduction (Demand-Side)	\$34,220
Meter Replacement Offset	95% Reduction in Amortized Meter Capital Costs	\$233,420
Improved Water Meter Accuracy	Raises 4.9% Average Inaccuracy to AWWA Standards of 100%±1.5%	\$980,200
Bad Debt Reduction	20% Reduction	\$13,930
System Loss Reduction	5% Reduction	\$13,360
Leak Adjustments Reduction	90% Reduction	\$247,500
Pump Schedule Optimization	5% Electricity Savings	\$8,600



## PROJECT BUDGET

*The project budget includes:*

- (1) Funding plan and letters of commitment*
- (2) Budget proposal*
- (3) Budget narrative*

*If the proposed project is selected, the awarding Reclamation Grants Officer will review the proposed pre-award costs to determine if they are consistent with program objectives and are allowable in accordance with the authorizing legislation. Proposed pre-award costs must also be compliant with all applicable administrative and cost principles criteria established in 2 CFR Part 200, available at [www.ecfr.gov](http://www.ecfr.gov), and all other requirements of this NOFO. **Costs incurred prior to July 1, 2021, are not eligible project costs under this NOFO and should not be included in the proposed budget estimate.***

*Please note that the costs for preparing and submitting an application in response to this NOFO, including the development of data necessary to support the proposal, are not eligible project costs under this NOFO and must not be included in the project budget. In addition, Budget Proposals must not include costs for the purchase of water or land, or to secure an easement other than a construction easement. These costs are not eligible project costs under this NOFO.*

## Funding Plan and Letters of Commitment

**Describe how the non-Federal share of project costs will be obtained. Reclamation will use this information in making a determination of financial capability.**

In addition to in-kind costs provided by NUA, a low interest loan from the OWRB Clean Water State Revolving Fund will be utilized for the remaining non-Federal cost portion of the project.

The OWRB will provide the required letter of commitment prior to award. Note that the project is listed as a prioritized FY 22 Fundable Project. It is currently slated for board review in December 2021, after which the loan application will be submitted for approval in spring 2022. NUA anticipates this process to take one to two months.

**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).*

NUA will contribute \$124,504 to support procurement activities from a reserve account. The remaining non-federal contributions will be provided via the aforementioned OWRB loan, which NUA must pay back over the assigned term.



*Any costs that will be contributed by the applicant.*

No additional costs will be contributed by the applicant.

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

There are no third-party in-kind costs associated with this project.

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

NUA plans to secure a low interest loan from the OWRB Clean Water State Revolving Fund.

*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.*

No funding requests are pending. If the OWRB loan is not approved, NUA will pursue other loan options.

**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.*

Planning activities for the future release of a request for proposals, to procure vendors for an advanced metering infrastructure solution and accompanying, applications has begun for the future AMI implementation project. NUA is working with a consultant to assist in these preparations for the cost of \$45,000.

*The date of cost incurrence.*

The incurrence of this cost will take place from November 2021 through April 2022.

*How the expenditure benefits the project.*

Now that the AMI assessment is complete, planning must commence to vet and select vendors for the project. Early preparations allow for thorough discussions to determine utility-specific infrastructure and future-state requirements to be included in the request for proposals. This will ultimately help NUA to select the best solution and move the schedule along in a timely fashion for a successful project.





## Budget Proposal

Table 13: Total Project Cost Table

SOURCE	AMOUNT
Costs to be reimbursed with the requested Federal funding	\$ 2,000,000.00
Costs to be paid by the applicant	\$ 13,818,990.06
Value of third-party contributions	\$ -0-
<b>TOTAL PROJECT COST</b>	<b>\$ 15,818,990.06</b>

*The budget proposal should include detailed information on the categories listed below and must clearly identify all items of cost, including those that will be contributed as non-Federal cost share by the applicant (required and voluntary), third-party in-kind contributions, and those that will be covered using the funding requested from Reclamation, and any requested pre-award costs. Unit costs must be provided for all budget items including the cost of services or other work to be provided by consultants and contractors. Applicants are strongly encouraged to review the procurement standards for Federal awards found at 2 CFR §200.317 through §200.327 before developing their budget proposal. If you have any questions regarding your budget proposal or eligible costs, please contact the grants management specialist identified in Section G. Agency Contacts.*

*It is also strongly advised that applicants use the budget proposal format shown in Table 2 or a similar format that provides this information. If selected for award, successful applicants must submit detailed supporting documentation for all budgeted costs. It is not necessary to include separate columns indicating which cost is being contributed as non-Federal cost share or which costs will be reimbursed with Federal funds.*

*Note: The costs of preparing bids, proposals, or applications on potential Federal and non-Federal awards or projects, including the development of data necessary to support the non-Federal entity’s application are not eligible project costs and should not be included in the budget proposal (2 CFR §200.460).*

The Budget Proposal, in the desired format, is provided as [Table 14](#) on the following page.



Table 14: City of Norman AMI Implementation Project Budget Proposal

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	TOTAL COST
	\$/Unit	Quantity		
<b>Salaries and Wages</b>				
N/A				\$ -
<b>Fringe Benefits</b>				
N/A				\$ -
<b>Travel</b>				
N/A				\$ -
<b>Equipment</b>				
N/A				\$ -
<b>Supplies and Materials</b>				
N/A				\$ -
<b>Contractual/Construction</b>				
AMI Network				
AMI Headend Software and Integrated MDMS	\$ 0.60	40973	Each	\$ 24,583.80
Network Infrastructure (Collectors and Associated Infrastructure)	\$ 2,500.00	33	Each	\$ 82,500.00
CEP	\$ 2.75	40973	Each	\$ 112,675.75
Water Meter Lids	\$ 27.00	40973	Each	\$ 1,106,271.00
Water Meter Endpoints	\$ 90.00	40973	Each	\$ 3,687,570.00
Water Meters				
3/4"	\$ 90.00	37999	Each	\$ 3,419,910.00
1"	\$ 175.00	1406	Each	\$ 246,050.00
1-1/2"	\$ 525.00	654	Each	\$ 343,350.00
2"	\$ 730.00	781	Each	\$ 570,130.00
3"	\$ 1,350.00	81	Each	\$ 109,350.00
4"	\$ 4,000.00	27	Each	\$ 108,000.00
6"	\$ 4,000.00	14	Each	\$ 56,000.00
8"	\$ 5,575.00	11	Each	\$ 61,325.00
Remote Disconnect Modules	\$ 300.00	500	Each	\$ 150,000.00
Meter Installation Services				
Water Meter Exchange (5/8" - 1")	\$ 35.00	39405	Each	\$ 1,379,175.00
Water Meter Exchange (1 1/2")	\$ 125.00	654	Each	\$ 81,750.00
Water Meter Exchange (2")	\$ 245.00	781	Each	\$ 191,345.00
Water Meter Exchange (3")	\$ 575.00	81	Each	\$ 46,575.00
Water Meter Exchange (4")	\$ 700.00	27	Each	\$ 18,900.00
Water Meter Exchange (6")	\$ 1,000.00	14	Each	\$ 14,000.00
Water Meter Exchange (8")	\$ 2,500.00	11	Each	\$ 27,500.00
Water Meter Lid Replacement	\$ 3.00	40973	Each	\$ 122,919.00
ERT Disposal	\$ 3.00	2000	Each	\$ 6,000.00
Performance Bond	\$ 1,888,164.00	2.5%	Percentage	\$ 47,204.10
Warehousing Costs	\$ 4,500.00	12	Each	\$ 54,000.00
Professional Services				
Program Management	\$ 1,850,000.00	1	Lump	\$ 1,850,000.00
Procurement (Capitalized)	\$ 124,504.00	1	Lump	\$ 124,504.00
CIS Integration	\$ 50,000.00	1	Lump	\$ 50,000.00
MDM Vendor	\$ 25,000.00	1	Lump	\$ 25,000.00
AMI Vendor	\$ 25,000.00	1	Lump	\$ 25,000.00
CEP Vendor	\$ 25,000.00	1	Lump	\$ 25,000.00
Installation Contractor	\$ 1,888,164.00	10%	Percentage	\$ 188,816.40
<b>Third-Party Contributions</b>				
N/A				\$0
<b>Other</b>				
Contingency for Water Installation Repair Costs, Network Redundancy, or Professional Services	\$ 14,380,900.05	10.2%	Percentage	\$ 1,463,586.01
<b>TOTAL DIRECT COSTS</b>				<b>\$ 15,818,990.06</b>
<b>Indirect Costs</b>				
N/A				
<b>TOTAL ESTIMATED PROJECT COSTS</b>				<b>\$ 15,818,990.06</b>



## Budget Narrative

*Submission of a budget narrative is mandatory. An award will not be made to any applicant who fails to fully disclose this information. The budget narrative provides a discussion of, or explanation for, items included in the budget proposal. The types of information to describe in the narrative include, but are not limited to, those listed in the following subsections. Costs, including the valuation of third-party in-kind contributions, must comply with the applicable cost principles contained in 2 CFR Part §200, available at the Electronic Code of Federal Regulations ([www.ecfr.gov](http://www.ecfr.gov)).*

### Salaries and Wages

*Indicate the Project Manager and other key personnel by name and title. The Project Manager must be an employee or board member of the applicant. Other personnel should be indicated by title alone. For all positions, indicate salaries and wages, estimated hours or percent of time, and rate of compensation. The labor rates must identify the direct labor rate separate from the fringe rate or fringe cost for each category. All labor estimates must be allocated to specific tasks as outlined in the applicant's technical project description. Labor rates and proposed hours shall be displayed for each task.*

*The budget proposal and narrative should include estimated hours for compliance with reporting requirements, including final project and evaluation. Please see Section F.3. Reporting Requirements and Distribution for information on types and frequency of reports required.*

*Generally, salaries of administrative and/or clerical personnel will be included as a portion of the stated indirect costs. If these salaries can be adequately documented as direct costs, they should be included in this section; however, a justification should be included in the budget narrative.*

The project is not requesting funds for salaries and wages.

### Fringe Benefits

*Identify the rates/amounts, what costs are included in this category, and the basis of the rate computations. Federally approved rate agreements are acceptable for compliance with this item.*

The project is not requesting funds for fringe benefits.

### Travel

*Identify the purpose of each anticipated trip, destination, number of persons traveling, length of stay, and all travel costs including airfare (basis for rate used), per diem, lodging, and miscellaneous travel expenses. For local travel, include mileage and rate of compensation.*

Travel by contract personnel will be included in their contract costs.



## Equipment

*If equipment will be purchased, itemize all equipment valued at or greater than \$5,000. For each item, identify why it is needed for the completion of the project and how the equipment was priced. Note: if the value is less than \$5,000, the item should be included under materials and supplies.*

*If equipment is being rented, specify the number of hours and the hourly rate. Local rental rates are only accepted for equipment actually being rented or leased.*

*If the applicant intends to use their own equipment for the purposes of the project, the proposed usage rates should fall within the equipment usage rates outlined by the United States Army Corps of Engineers within their Construction Equipment Ownership and Operating Expense Schedule (EP 1110-1-8) at [www.publications.usace.army.mil/USACE-Publications/Engineer-Pamphlets/u43545q/313131302D312D38](http://www.publications.usace.army.mil/USACE-Publications/Engineer-Pamphlets/u43545q/313131302D312D38).*

*Note: If the equipment will be furnished and installed under a construction contract, the equipment should be included in the construction contract cost estimate.*

The AMI equipment will be provided as part of a construction contract with the AMI system provider and, as such, is included in the construction contract cost estimate.

## Materials and Supplies

*Itemize supplies by major category, unit price, quantity, and purpose, such as whether the items are needed for office use, research, or construction. Identify how these costs were estimated (i.e., quotes, engineering estimates, or other methodology). Note: If the materials/supplies will be furnished and installed under a contract, the equipment should be included in the construction contract cost estimate.*

The AMI materials and supplies are being furnished as part of construction contracts with both the AMI system provider and the meter installation vendor. Consequently, these costs are included in the construction contract cost estimate.

## Contractual

*Identify all work that will be accomplished by consultants or contractors, including a breakdown of all tasks to be completed, and a detailed budget estimate of time, rates, supplies, and materials that will be required for each task. For each proposed contract, identify the procurement method that will be used to select the consultant or contractor and the basis for selection.*

The contractual costs for this project are itemized in the Budget Item Description in [Table 14](#) above.

NUA plans to enter into a master services agreement with the AMI system provider to supply software and services, network infrastructure and installation thereof, as well as meters, modules, and other network hardware. This contract structure is common within the industry and will be competitively bid as required.



NUA will also enter into a meter/module installation agreement (either as a separate contract or as part of the AMI master services agreement) with an installation vendor to replace water meters, install endpoints, and program endpoint for communication on the AMI network. During this process, the installation will also prepare the meter box and lid to accommodate the new AMI meter and/or module. The installation vendor will provide training for their personnel and provide a web scheduler and robo-call services to assure that customers are aware of the meter replacement and request that it be scheduled for a specific time, if necessary. This contract will also competitively bid as required.

### **Third-Party In-Kind Contributions**

*Identify all work that will be accomplished by third-party contributors, including a breakdown of all tasks to be completed, and a detailed budget estimate of time, rates, supplies, and materials that will be required for each task. Third-party in-kind contributions, including contracts, must comply with all applicable administrative and cost principles criteria, established in 2 CFR Part 200, available at [www.ecfr.gov](http://www.ecfr.gov), and all other requirements of this NOFO.*

Not applicable.

### **Environmental and Regulatory Compliance Costs**

*Prior to awarding financial assistance, Reclamation must first ensure compliance with Federal environmental and cultural resources laws and other regulations (“environmental compliance”). Every project funded under this program will have environmental compliance activities undertaken by Reclamation and the recipient.*

*Depending on the potential impacts of the project, Reclamation may be able to complete its compliance activities without additional cost to the recipient. Where environmental or cultural resources compliance requires significant participation by Reclamation, costs incurred by Reclamation will be added as a line item to the budget during development of the financial assistance agreement and cost shared accordingly (i.e., withheld from the Federal award amount). Any costs to the recipient associated with compliance will be identified during the process of developing a final project budget for inclusion in the financial assistance agreement.*

There are no anticipated environmental and regulatory compliance expense costs that need to be itemized under this project.

### **Other Expenses**

*Any other expenses not included in the above categories shall be listed in this category, along with a description of the item and why it is necessary. No profit or fee will be allowed.*

NUA has allocated a contingency of 10% of the total project cost to account for unknown related to the field conditions of its meter population, breaks and repairs that are necessary during installation, and to provide a relief budget for additional network design and redundancy, or additional consulting, integration, and professional services.



## Indirect Costs

*Indirect costs are costs incurred by the applicant for a common or joint purpose that benefit more than one activity of the organization and are not readily assignable to the activities specifically benefitted without undue effort. Costs that are normally treated as indirect costs include, but are not limited to, administrative salaries and fringe benefits associated with overall financial and organizational administration, operation and maintenance costs for facilities and equipment, and payroll and procurement services. If indirect costs will be incurred, identify the proposed rate, cost base, and proposed amount for allowable indirect costs based on the applicable cost principles for the applicant's organization. It is not acceptable to simply incorporate indirect rates within other direct cost line items.*

*Any non-Federal entity that does not have a current negotiated (including provisional) rate, except for those non-Federal entities described in appendix VII to 2 CFR §200, paragraph D.1., may elect to charge a de minimis rate of 10% of modified total direct costs (MTDC) which may be used indefinitely. For further information on MTDC, refer to 2 CFR §200.68 available at [www.ecfr.gov](http://www.ecfr.gov).*

*If the applicant does not have a federally approved indirect cost rate agreement and is proposing a rate greater than the de minimis 10 percent rate, include the computational basis for the indirect expense pool and corresponding allocation base for each rate. Information on "Preparing and Submitting Indirect Cost Proposals" is available from the Department's Interior Business Center, Office of Indirect Cost Services, at [www.doi.gov/ibc/services/finance/indirect-cost-services](http://www.doi.gov/ibc/services/finance/indirect-cost-services).*

There are no indirect costs that need to be itemized under this project.

## ENVIRONMENTAL AND CULTURAL RESOURCE CONSIDERATIONS

*To allow Reclamation to assess the probable environmental and cultural resources impacts and costs associated with each application, all applicants should consider the following list of questions focusing on the NEPA, ESA, and NHPA requirements. Please answer the following questions to the best of your knowledge. If any question is not applicable to the project, please explain why. The application should include the answers to:*

**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 AMI implementation project will not have an impact on the surrounding environment. Installation of AMI hardware (e.g., network communication equipment and advanced meters) will occur throughout the already developed areas of the water system within NUA's service territory.



This work will have no significant effects on soil, air, water, or animal habitat. The only earth-disturbing activity would include replacement or modification of the existing water box that houses meters at customer premises. The NUA is prepared to complete this process on an as needed basis.

**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 ARS is a Federal threatened species located in the Canadian River, which is a designated critical habitat and in NUA's service territory. However, the ARS would not be directly affected by any activities associated with the proposed project, because it doesn't reside in the areas where project work will be conducted.

**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.**

According to the Oklahoma Department of Environmental Quality (ODEQ), Lake Thunderbird and the South Canadian River are considered Waters of the U.S. and the state. However, no direct impacts are anticipated to wetlands or surface waters as a result of the proposed project since the work will be performed at customer premises.

**When was the water delivery system constructed?**

The City of Norman's water delivery system was established in 1891.

**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 AMI implementation project will not result in any modification of or effects to individual features of an irrigation system.

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

There are a number of buildings listed or eligible for listing on the National Register of Historic Places, but the activities of this project will have no impact on those places. The project will merely replace water meters servicing those buildings.

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

There are no known archeological sites located in the proposed AMI installation area (i.e., customer meter boxes and other city-owned structures). The project will not



include ground-disturbing activity that would pose a significant threat to archaeological sites.

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

No, the proposed project will not result in disproportionately high and adverse effects low income or minority populations in the NUA’s service area. The AMI implementation project will provide opportunities for all residents, including, disadvantaged customers, to better manage their water use, reduce waste and save money to spend on other important needs. The customer portal will also foster collaboration and interaction amongst customers and NUA as users gain a greater sense of their water consumption and a sense of how it compares to their neighbors.

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

The AMI implementation project will not limit access or ceremonial use of Indian sacred sites or otherwise impact tribal lands. As previously mentioned, NUA’s service area does not include tribal land.

**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 to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the Norman area.

## **REQUIRED PERMITS OR APPROVALS**

*Applicants must state in the application whether any permits or approvals are required and explain the plan for obtaining such permits or approvals.*

*Note that improvements to Federal facilities that are implemented through any project awarded funding through this NOFO must comply with additional requirements. The Federal government will continue to hold title to the Federal facility and any improvement that is integral to the existing operations of that facility. Please see P.L. 111-11, Section 9504(a)(3)(D). Reclamation may also require additional reviews and approvals prior to award to ensure that any necessary easements, land use authorizations, or special permits can be approved consistent with the requirements of 43 CFR §429, and that the development will not impact or impair project operations or efficiency.*

There are no required permits anticipated for the AMI implementation project. All the project work will be conducted at current customer meter locations within the utility service territory.





## LETTERS OF SUPPORT

*Please include letters from interested stakeholders supporting the proposed project. To ensure your proposal is accurately reviewed, please attach all letters of support/partnership letters as an appendix. Letters of support received after the application deadline for this NOFO will not be considered in the evaluation of the proposed project.*

As previously mentioned, NUA received six letters of support for the AMI implementation project from the Central Oklahoma Master Conservancy District, Norman Chamber of Commerce, Oklahoma Water Survey at the University of Oklahoma, Environmental Control Advisory Board, Senator James (Jim) Inhofe and Congressman Tom Cole, which can be found in APPENDIX A.

## OFFICIAL RESOLUTION

*Include an official resolution adopted by the applicant’s board of directors or governing body, or, for State government entities, an official authorized to commit the applicant to the financial and legal obligations associated with receipt of a financial assistance award under this NOFO, verifying:*

- *The identity of the official with legal authority to enter into an agreement*
- *The board of directors, governing body, or appropriate official who has reviewed and supports the application submitted*
- *The capability of the applicant to provide the amount of funding and/or in-kind contributions specified in the funding plan*
- *That the applicant will work with Reclamation to meet established deadlines for entering into a grant or cooperative agreement*

***An official resolution meeting the requirements set forth above is mandatory. If the applicant is unable to submit the official resolution by the application deadline because of the timing of board meetings or other justifiable reasons, the official resolution may be submitted to bor-sha-fafoa@usbr.gov up to 30 days after the application deadline.***

An official resolution from the City of Norman supporting Norman Utility Authority’s WaterSMART: Water and Energy Efficiency Grant application has been approved. This resolution is included as APPENDIX B.



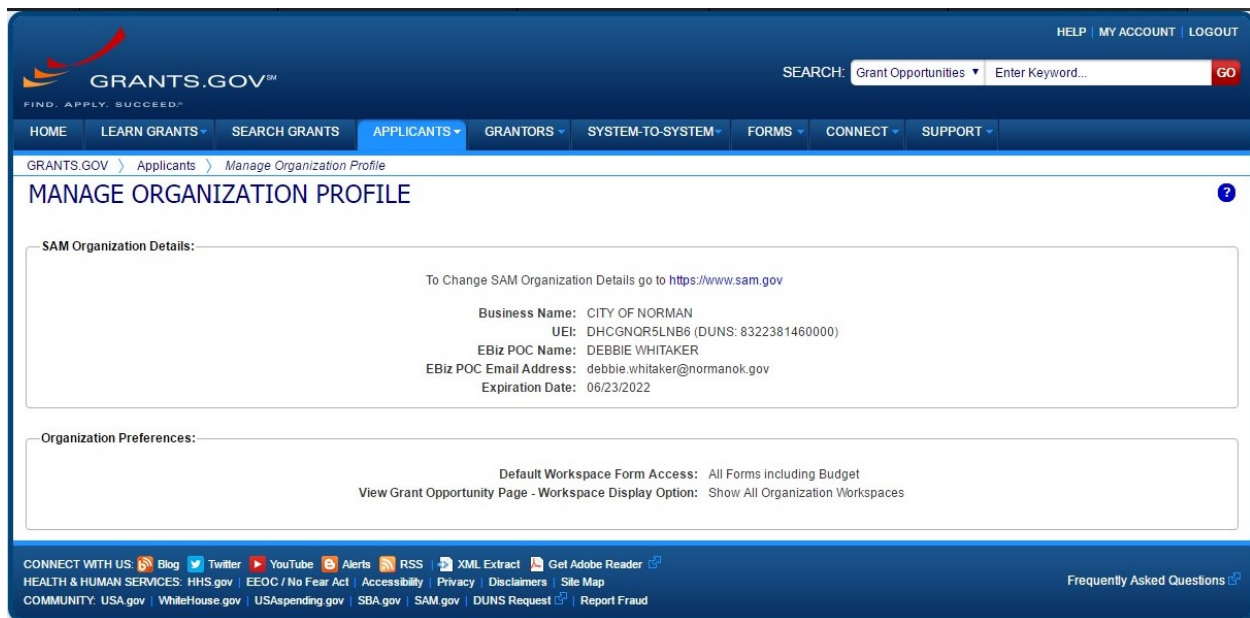
## UNIQUE IDENTITY IDENTIFIER AND SYSTEM FOR AWARD MANAGEMENT

All applicants (unless the applicant has an exception approved by Reclamation under 2 CFR §25.110[d]) are required to:

### (i) Be registered in the System for Award Management (SAM) before submitting its application

The City of Norman currently maintains an active SAM registration. The screenshot below in Figure 6 shows the active registration status.

Figure 6: City of Norman SAM Registration



### (ii) Provide a valid unique entity identifier in its application

The City of Norman uses the DUNS number 832238146 as its unique entity identifier and is currently active and up to date.

### (iii) Continue to maintain an active SAM registration with current information at all times during which it has an active Federal award or an application or plan under consideration by a Federal awarding agency.

NUA is committed to working with the City of Norman to maintain its currently active SAM registration.



## **APPEDICIES**

**Appendix A– Letters Of Support**

**Appendix B – Official Resolution**

**Appendix C – Ami Assessment Business Case**

**Appendix D – NUA FY 21 AWWA Water Audit**

**Appendix E – Preliminary Meter Audit Results**

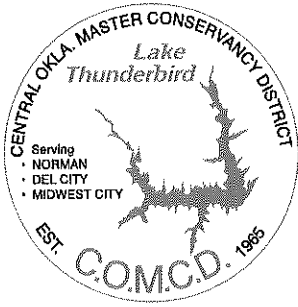
**Appendix F – NUA Pump Information**



## **APPENDIX A – Letters Of Support**

This appendix contains the letters of support from the following:

- Central Oklahoma Master Conservancy District
- Norman Chamber of Commerce
- The Oklahoma Water Survey at the University of Oklahoma
- The Environmental Control Advisory Board
- Senator James (Jim) Inhofe
- Congressman Tom Cole



12500 ALAMEDA NORMAN, OKLAHOMA 73026  
(405) 329-5228

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October 12, 2021

Bureau of Reclamation  
Financial Assistance Support Services  
Attn: NOFO Team  
PO Box 25007, MS 84-27133  
Denver, CO 80225

**RE: Bureau of Reclamation WaterSMART Grants: Water and Energy Efficiency Grants for FY 2022  
(Notice of Funding Opportunity No. R22AS00023)**

To Whom it May Concern:

On behalf of the Central Oklahoma Master Conservancy District (COMCD), I would like to express our support of the City of Norman's application for the Advanced Water Metering project. This project will improve Norman's water efficiency and conservation efforts thereby extending the life of water resources to serve the city and to allow for future growth.

The COMCD is the entity that administers and manages the facilities at Lake Thunderbird, referred to as the *Norman Project* by the Bureau of Reclamation, to provide raw water to the City of Norman, the City of Del City, and the City of Midwest City. Water conservation and stewardship is very timely for Lake Thunderbird since the firm yield for the reservoir was reduced to 12,700 acre-feet per year based on analysis completed in 2021 with Norman's proportionate share being 5,563 acre-feet per year (43.8 percent). Norman has always been a good steward of water resources but this project will help them move further ahead in this regard. Additionally, Norman, in combination with the Bureau of Reclamation (Grant No. R21AP10110-00), is further demonstrating their efforts to improve water resiliency and water supply availability by evaluating the potential for indirect potable reuse to supplement Lake Thunderbird and improve the yield of the reservoir during times of significant drought.

It is the COMCD's privilege to extend its support of the City of Norman's application to the Bureau of Reclamation for their Advanced Water Metering project. If you have any questions or comments, please feel free to contact me at (405) 329-5228 or by email at [karthur@comcd.net](mailto:karthur@comcd.net).

Sincerely,

Kyle Arthur  
General Manager  
Central Oklahoma Master Conservancy District



October 18, 2021

Bureau of Reclamation  
Financial Assistance Support Services  
Attn: NOFO Team  
PO Box 25007, MS 84-27133  
Denver, CO 80225

RE: Bureau of Reclamation WaterSMART Grants: Water and Energy Efficiency Grants  
for FY 2022  
(Notice of Funding Opportunity No. R22AS00023)

To Whom it May Concern:

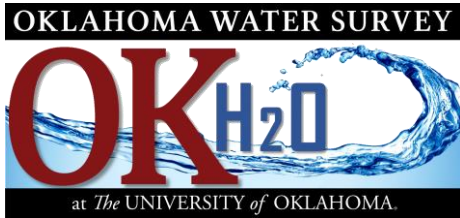
On behalf of the Norman Chamber of Commerce, I would like to express our support of the Norman Utilities Authority's application for the Advanced Water Metering project. The Norman Utilities Authority operates and maintains the water and wastewater systems for the City of Norman and will be replacing approximately 41,000 meters with new meters and network improvements for automatic meter reading. This project will improve the Norman Utilities Authority's water efficiency and conservation efforts thereby extending the life of water resources to serve the city and to allow for future growth. Additionally, the increased accuracy that the new meters will provide will instill confidence in businesses that the water billing to their location is correct and based on accurate and timely water meter readings.

It is the Norman Chamber of Commerce's privilege to extend its support of the Norman Utilities Authority's application to the Bureau of Reclamation for their Advanced Water Metering project. If you have any questions or comments, please feel free to contact me at (405) 321-7260 or by email at [scott@normanchamber.com](mailto:scott@normanchamber.com).

Sincerely,

A handwritten signature in black ink that reads "Scott C. Martin".

Scott C. Martin  
President and CEO  
Norman Chamber of Commerce



**OKLAHOMA WATER SURVEY**  
UNIVERSITY OF OKLAHOMA  
201 STEPHENSON PARKWAY  
FIVE PARTNERS PLACE, SUITE 1101  
NORMAN, OK 73019  
(405) 325-2531  
OUTREACH@OKH2O.ORG

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October 22, 2021

Bureau of Reclamation  
Financial Assistance Support Services  
Attn: NOFO Team  
PO Box 25007, MS 84-27133  
Denver, CO 80225

**RE: Bureau of Reclamation WaterSMART Grants: Water and Energy Efficiency Grants for FY 2022 (Notice of Funding Opportunity No. R22AS00023)**

To Whom it May Concern:

On behalf of the University of Oklahoma and the Oklahoma Water Survey (Survey), I would like to express our support of the Norman Utilities Authority's application for the Advanced Water Metering project. The Norman Utilities Authority operates and maintains the water and wastewater systems for the City of Norman and will be replacing approximately 41,000 meters with new meters and network improvements for automatic meter reading.

The Survey is focused on studying the state's water resources and to collect, analyze, interpret and disseminate research-based information to industry professionals, researchers, students, teachers, citizens, governments and other organizations. While this proposed project does not directly impact the Survey, the goals of the project to more efficiently use water in the State of Oklahoma and implement the latest technology to achieve this completely align with the spirit of the Survey.

Additionally, as the largest water user served by the Norman Utilities Authority, ensuring accurate and timely billing is to the benefit of the University of Oklahoma. The increased water usage data and its availability will also allow for the improved conservation efforts by the University.

If you have any questions or comments, please feel free to contact me at [daneheins@gmail.com](mailto:daneheins@gmail.com).

Sincerely,

A handwritten signature in black ink that reads "Jason Vogel".

Jason R. Vogel, Ph.D., P.E.  
Professor, Civil Engineering and Environmental Science  
Director, Oklahoma Water Survey  
University of Oklahoma  
Norman, OK 73019



The City of  
**NORMAN**

P.O. Box 370  
Norman, Oklahoma 73070



Environmental Control Advisory Board

October 20, 2021

Bureau of Reclamation  
Financial Assistance Support Services  
Attn: NOFO Team  
PO Box 25007, MS 84-27133  
Denver, CO 80225

**RE: Bureau of Reclamation WaterSMART Grants: Water and Energy Efficiency Grants for FY 2022  
(Notice of Funding Opportunity No. R22AS00023)**

To Whom It May Concern:

On behalf of Environmental Control Advisory Board for the City of Norman, I would like to express our support of the Norman Utilities Authority's application for the Advanced Water Metering project. The Norman Utilities Authority operates and maintains the water and wastewater systems for the City of Norman and will be replacing approximately 41,000 meters with new meters and network improvements for automatic meter reading. Through these improvements, the Norman Utilities Authority will improve numerous aspects of their operation including:

- **Water Conservation and Efficiency** – Increased meter accuracy with timely readings will allow the Norman Utilities Authority to better measure the water used in the system and will also detect leaks and provide timely notification to customers to allow for prompt action. Customers will also have access to additional data providing better insight on when water is being used which can be used to modify behaviors and reduce water usage.
- **Reduced Greenhouse Gas Emissions** – Automatic meter reading will eliminate the need for staff to drive to read water meters thereby eliminating emissions from these vehicles for regular readings. With the installation this new system, estimates show approximately 50,000 less miles will be driven for meter reading efforts and compressed natural gas and gasoline usage will be reduced by approximately 2,300 gallons and 2,100 gallons, respectively.

It is the Environmental Control Advisory Board's privilege to extend its support of the Norman Utilities Authority's application to the Bureau of Reclamation for their Advanced Water Metering project. If you have any questions or comments, please feel free to contact me at or by email at [daneheins@gmail.com](mailto:daneheins@gmail.com).

Sincerely,

*Dane Heins*

Dane Heins  
President  
Environmental Control Advisory Board



JAMES M. INHOFE

OKLAHOMA

WASHINGTON OFFICE

205 RUSSELL SENATE OFFICE BUILDING  
WASHINGTON, DC 20510-3603  
(202) 224-4721

TULSA OFFICE

1924 SOUTH UTICA, SUITE 530  
TULSA, OK 74104  
(918) 748-5111

OKLAHOMA CITY OFFICE

3817 NORTHWEST EXPRESSWAY, SUITE 780  
OKLAHOMA CITY, OK 73112  
(405) 208-8841

COMMITTEES:

ARMED SERVICES  
RANKING MEMBER

ENVIRONMENT AND  
PUBLIC WORKS

SMALL BUSINESS AND  
ENTREPRENEURSHIP

INTELLIGENCE  
EX OFFICIO

# United States Senate

WASHINGTON, DC 20510-3603

October 25, 2021

Bureau of Reclamation  
Financial Assistance Support Services  
Attn: NOFO Team  
PO Box 25007, MS 84-27133  
Denver, CO 80225

Dear To Whom It May Concern:

**RE: Bureau of Reclamation WaterSMART Grants: Water and Energy Efficiency Grants for  
FY 2022 (Notice of Funding Opportunity No. R22AS00023)**

It is my understanding that the Norman Utilities Authority has applied for the Advanced Water Metering project. The Norman Utilities Authority operates and maintains the water and wastewater systems for the City of Norman and will be replacing approximately 41,000 meters with new meters and network improvements for automatic meter reading.

I thank you, in advance, for reviewing the application for the Norman Utilities Authority and for giving their application all due consideration. This project will improve their water efficiency and conservation efforts thereby extending the life of water resources to serve the city and to allow for future growth in addition to other numerous benefits that will be realized.

Please contact Joni Williams in my Tulsa office as to the progress of this application and the final decision. She can be contacted at 918-748-5111.

I look forward to working with you in the future and if I can be of further assistance, please do not hesitate to call.

Sincerely,



James M. Inhofe  
United States Senator

JMI:jw

**TOM COLE**  
4TH DISTRICT, OKLAHOMA

DEPUTY WHIP

**COMMITTEE ON RULES**  
RANKING REPUBLICAN

**COMMITTEE ON APPROPRIATIONS**  
VICE RANKING REPUBLICAN

LABOR, HEALTH AND HUMAN SERVICES,  
EDUCATION AND RELATED AGENCIES –  
RANKING REPUBLICAN  
DEFENSE



**Congress of the United States**  
**House of Representatives**

October 26, 2021

**PLEASE REPLY TO:**

- 2207 RAYBURN HOUSE OFFICE BUILDING  
WASHINGTON, DC 20515  
(202) 225-6165
- 2424 SPRINGER DRIVE  
SUITE 201  
NORMAN, OK 73069  
(405) 329-6500
- 711 SW D AVENUE  
SUITE 201  
LAWTON, OK 73501  
(580) 357-2131
- SUGG CLINIC OFFICE BUILDING  
100 EAST 13TH STREET, SUITE 213  
ADA, OK 74820  
(580) 436-5375

Bureau of Reclamation  
Financial Assistance Support Services  
Attn: NOFO Team  
PO Box 25007, MS 84-27133  
Denver, CO 80225

**RE: Bureau of Reclamation WaterSMART Grants: Water and Energy Efficiency Grants  
for FY 2022  
(Notice of Funding Opportunity No. R22AS00023)**

To Whom it May Concern:

It is with pleasure that I offer my support of the Norman Utilities Authority's application for the Advanced Water Metering project. The Norman Utilities Authority operates and maintains the water and wastewater systems for the City of Norman and will be replacing approximately 41,000 meters with new meters and network improvements for automatic meter reading. This project will improve the Norman Utilities Authority's water efficiency and conservation efforts thereby extending the life of water resources to serve the city and to allow for future growth in addition to other numerous benefits that will be realized.

If my office can be of further assistance, please do not hesitate to contact my office.

Sincerely,

A handwritten signature in black ink that reads "Tom Cole". The signature is fluid and cursive, with a large initial "T" and "C".

Tom Cole  
Member of Congress



## **APPENDIX B – Official Resolution**

This appendix contains the following:

- Resolution No. R-2122-43, adopted by the City of Norman City Council on October 26, 2021.

A RESOLUTION OF THE NORMAN UTILITIES AUTHORITY  
AUTHORIZING THE CHAIRMAN OF THE NORMAN  
UTILITIES AUTHORITY TO SUBMIT WATERSMART  
GRANT APPLICATIONS FOR WATER AND ENERGY  
EFFICIENCY GRANTS FOR FISCAL YEAR 2022.

1. WHEREAS, the United States Bureau of Reclamation (BOR) has a funding program entitled “WaterSMART Grants: Water and Energy Efficiency Grants for fiscal year (FY) 2022” and pursuant to this funding opportunity R22AS00023, the BOR provides funding for projects that result in quantifiable water savings, implement renewable energy components, and support broader sustainability benefits; and
2. WHEREAS, the Norman Utilities Authority (NUA) has completed an assessment report for the implementation of advanced water metering infrastructure for the City of Norman to accurately measure water consumption to improve water conservation efforts to all the NUA to serve customers further into the future using existing water supplies; and
3. WHEREAS, NUA envisions corresponding energy savings resulting from reduced pump run times and the reduction of fossil fuel usage for vehicles currently used for manual meter reading efforts; and
4. WHEREAS, the NUA wishes to apply for funds to cover a portion of the cost for the advanced water metering infrastructure project by the deadline of November 3, 2021; and
5. WHEREAS, the BOR has directed applicants to include in the application an official resolution adopted by the applicant’s board of directors or governing body verifying 1) the identity of the official with legal authority to enter into an agreement; 2) the board of directors, governing body, or appropriate official who has reviewed and supports the application submitted; 3) the capability of the applicant to provide the amount of funding and/or in-kind contributions specified in the funding plan; and 4) that the application will work with the BOR to meet established deadlines for entering into a grant or cooperative agreement.

NOW, THEREFORE, BE IT RESOLVED BY THE NORMAN UTILITIES AUTHORITY:

SECTION 1. The NUA hereby finds that it is in the City of Norman’s and public’s interest in health, safety and welfare of the community to file the Financial Assistance Application with the BOR to seek funds made available under the NUA to enter into a cooperative agreement with the BOR to seek funds made available under Funding Opportunity Number R22AS00023.



SECTION 2. The NUA understands and supports the application that will be submitted and finds:

- (a) The NUA has legal authority to enter into an agreement with BOR to receive a grant; and
- (b) The NUA is able to provide the minimum 50% non-federal cost share specified in the funding plan for this application.

SECTION 3. The NUA hereby authorizes and directs the City Manager or his designees, the Director of Utilities or his agents to:

- (a) file and sign, for and on behalf of the NUA, a Financial Assistance Application for a financing agreement from BOR for the Advanced Water Metering Infrastructure Project;
- (b) provide the assurances, certifications, and commitments required for the Financial Assistance Application including executing a financial assistance agreement from the BOR and any amendments or changes thereto; and
- (c) represent the NUA in carrying out the NUA's responsibilities under the financing agreement, including certifying disbursement requests on behalf of the NUA and compliance with applicable state and federal laws.

SECTION 4. The NUA will work with BOR to meet established deadlines required for entering into a cooperative agreement to obtain the aforementioned grant funding.

PASSED AND ADOPTED BY THE TRUSTEES OF THE NORMAN UTILITIES AUTHORITY  
this 26<sup>th</sup> day of October, 2021.

  
\_\_\_\_\_  
Brea Clark, Chairman

ATTEST:

  
\_\_\_\_\_  
Brenda Hall, Secretary

