City of Durant AMR Smart Meter Installation Project

Water SMART Grant: Small-Scale Water Efficiency Projects for Fiscal Year 2018
BOR-DO-18-F009

Prepared for:
Bureau of Reclamation
Financial Assistance Support Section
Attn: Mr. Matthew Reichert
P.O. Box 25007, MS 84-27814
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Applicant:
City of Durant
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July 31, 2018

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TECHNICAL PROPOSAL

Executive Summary

Date: July 31, 2018

Applicant Name: City of Durant

City, County and State: City of Durant, Bryan County, Oklahoma

Project Summary

The City of Durant is pleased to submit this application for funding to install Automatic Meter Reading (AMR) smart meters within the City of Durant distribution system. The requested funding will allow the City to purchase and install 300 smart meters. Installation of these meters will serve subdivisions and an apartment complex, assist in reducing significant water loss currently experienced within the distribution system, enhance management of current water supplies, and make the most efficient use of limited water supplies from the Blue River, the City's sole source of water.

The proposed project is one element of a larger effort by the City to improve aging water infrastructure, increase capacity and maximize water reliability. The overall effort, including this proposed project, is supported by existing local and regional water resource planning efforts, including technical assistance from the Choctaw Nation.

The meter installation project will be completed within 12 months of notice to proceed. The proposed project is not located on a Federal facility.

Background Data

The City of Durant is the largest city and the county seat of Bryan County in Southeast Oklahoma (see Figure 1). The City had a reported population of 15,856 at the 2010 US Census and is projecting to serve a population of 24,516 by 2060 (Oklahoma Comprehensive Water Plan). Water demands were estimated at 4,391 acre-feet per year (AFY) in 2010 and are projected to reach over 6,700 AFY by 2060. The City of Durant also supplies treated water to nearby Bryan County Rural Water Districts No. 2 and 5, and to Choctaw Nation properties located just south of the City.

The City of Durant draws all of its raw water from the Blue River and in 2011 – a year that was both the hottest and driest on record – the Blue River almost ran dry. The City is permitted to withdraw 12,342 AFY from the Blue River, but the water right does not address the potential lack of physical water witnessed during periods of drought or because of future demands. The Blue River is a spring fed river originating from the Arbuckle-Simpson Aquifer springs in its upper reaches. In 2017 the City and Reclamation participated in developing a Drought Contingency Plan for the Arbuckle-Simpson Aquifer. The river does not have any on-channel reservoirs, decreasing the potential for providing storage supplies during periods of drought. There is one existing off-channel reservoir owned by the City of Durant, which has a capacity of 4,309 AF, which can be filled from the Blue River, and to which the City made an emergency connection to in 2011.

The City is pursuing the installation of Automatic Meter Reading (AMR) meters (i.e. smart meters) to address water loss, improve water metering accuracy, promote water conservation, and to support future water planning efforts both locally and regionally. The City's water distribution system consists of approximately 130 miles of distribution pipelines, seven storage tanks totaling 4.8 million gallons in capacity, four pump stations with 10 pumps rated at 24,600 gallons per minute (gpm), and one raw water pump station with four pumps rated at over 13,200 gpm. The City has approximately 6,900 water meters installed and in use. Of those water meters, approximately 200 are Automatic Meter Reading (AMR) with the remaining being traditional water meters that do not have the same capabilities as smart meters.

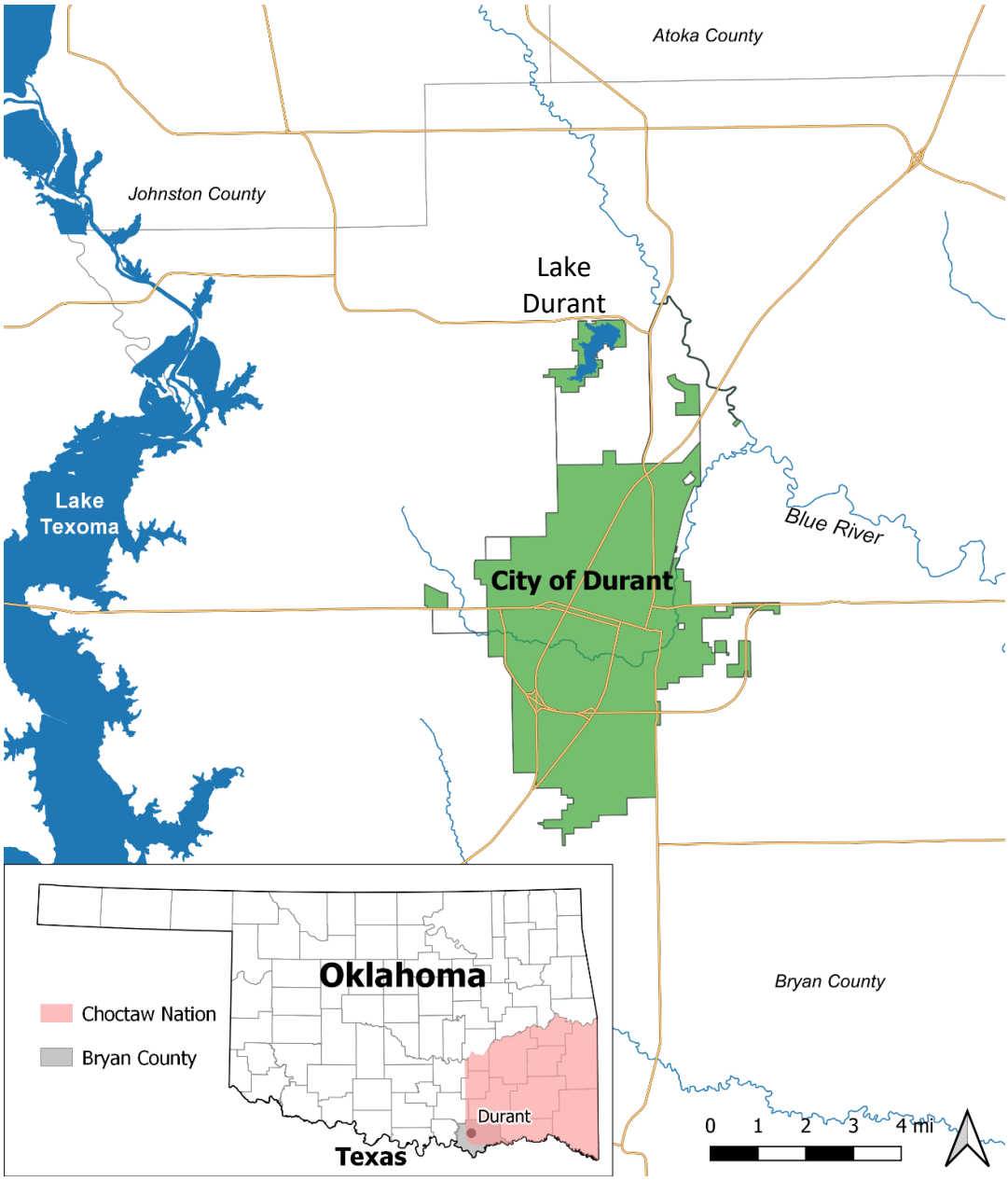

FIGURE 1. MAP OF CITY OF DURANT

Project Location

The proposed project is located in the City of Durant in Bryan County, Oklahoma which is approximately 100 miles north of Dallas, Texas. A Shapefile of the City of Durant water service area has been submitted with this proposal.

Technical Project Description

A recent 2015 study estimated unaccounted for water to be approximately 44% in this distribution system. This extremely high loss rate is a detriment to the City in the form of lost

revenues, poor water conservation and avoidable pumping and water treatment costs. As part of a 30-year water infrastructure summary the City is actively targeting water losses.

The City of Durant has identified 300 locations that currently only utilize traditional meters. Installing AMR meters at these locations would provide valuable data to mitigation water losses within the municipal water supply system. Grant funds would be utilized to install 300 3/4" and 5/8" Neptune AMR Mach 10 Meters. The location of these AMR meters will be in a single region of the City including two subdivisions and one apartment complex, and is shown in Figure 2. This area was selected for a number of reasons: it is a relatively small area that will allow efficient observation of the AMR system, the single area would allow the installation process to be more streamlined and efficient, and the area covers a range of socio-economic statuses.

The project will provide an accurate method to better characterize water distribution system losses and through this allow the City of Durant to regain revenue due to water losses. Additionally, water conserved through leak reduction will result in beneficial effects outside of the City, with less water being taken from the Blue River, which is one of the few rivers in Oklahoma that does not have a reservoir on the main stem of the river.

FIGURE 2. PROPOSED AMR METER INSTALLATION AREA

Evaluation Criteria

Evaluation Criterion A – Project Benefits (35 points)

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

The City of Durant's water distribution system experiences significant water loss, which was estimated at 44% in a recent 2015 study. This results in unnecessary revenue loss for the City, unnecessary demands on their water treatment plant and pumps, and unnecessary withdrawal of water from the Blue River.

This project will allow for reliable accounting of water distribution water use of a critical water supply. This will result in reduced water treatment loads, increased water conservation, reduced withdrawals from the Blue River, and financial savings for the City.

Evaluation Criterion B – Planning Efforts Supporting the Project (35 points)

Describe how your project is supported by an existing planning effort.

The City of Durant's 30-year infrastructure capital project summary identifies continued investment in water loss initiatives over the next 7 years. The AMR meter installation will provide valuable data for better targeting water losses through poor accounting and by being able to better pinpoint the location of leaks.

The Choctaw and Chickasaw Nations have been actively investing in a comprehensive regional water planning initiative for their jurisdictional homelands in Southeast Oklahoma. The goal is to provide a suite of water resources strategies aligned with the seven essentials concept. The seven essentials aim to balance the environmental, economic, and social components to result in bearable, equitable, viable and sustainable water solutions. In this role, the Choctaw Nation has a vested interest in ensuring that communities across the region, including the City of Durant, are able to meet their water needs. In fact the City is currently the sole source of water to the Choctaws. A letter of support from the Choctaw Nation for the proposed project is attached.

Beyond the Choctaw and Chickasaw Nations the Oklahoma Water Resources Board identifies the Blue River as having High Quality Waters. This designation allows for enhanced waterbody protection, such as the source water protection area in portions of the Blue River. Additionally, the Blue River is one of the few free-flowing rivers left in Oklahoma, and it is sourced from a unique and sensitive karst aquifer that has seen increased pressure from mining and domestic use in the region. This project will increase water conservation, resulting in less withdrawal of protected water from the Blue River.

Evaluation Criterion C – Project Implementation (10 points)

Describe the implementation plan for the proposed project. Please include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates.

The following table outlines the major tasks, milestones and schedule for the proposed project. The project is estimated to require 12 months for completion and includes installation of 300 AMR meters following notice of award and acquisition of materials.

Project Tasks and Milestones	**Year 1**			
	Q1	**Q2**	**Q3**	**Q4**
Receive notice of award	★			
1. Acquisition of materials	■			
2. Installation of 300 meters		■	■	
Submit Final Performance Report				★

Project Reporting

The required financial reports will be submitted at least on an annual basis. A Final Performance Report will be submitted after the project is completed and will include whether the project objectives and goals were met, a discussion of the benefits achieved by the project and any relevant documentation, including photos.

Installation of equipment for the proposed project is ready to proceed upon funding notification and acquisition of the required equipment. Detailed engineering and design work is not required to implement the project. Environmental compliance costs are not anticipated for the proposed project. The proposed project will not require permits.

Evaluation Criterion D – Nexus to Reclamation (10 points)

Is the proposed project connected to a Reclamation project or activity? If so, how?

The Blue River is spring fed by the Arbuckle-Simpson Aquifer. Protecting spring flow is paramount to protecting the sole water source for the City of Durant, the Blue River. The Bureau of Reclamation participated in the advisory group that developed the Arbuckle-Simpson Drought Contingency Plan (2017). This plan, which the City of Durant also participated in, outlines near-term to long-term strategies to collaboratively mitigate impacts of drought. These strategies, combined with this project's focus on water savings and conservation will contribute

to sustaining flows in the Blue River and increased water security for the City of Durant. Durant's effort in this Drought Contingency Plan and this project are part of an overall effort by the City to efficiently use an important resource and further protect the Blue River, which they rely so heavily on.

Will the project benefit any tribe(s)?

The Choctaw Nation has a number of facilities within Durant and purchases treated water for facilities that are located less than 4 miles southwest of the City. The Choctaw Nation is expanding rapidly as it takes advantage of increased traffic on highway 69, which runs through the City, and builds infrastructure supporting the Nation's main resort, which has nearly 800 rooms.

Additionally, the administrative headquarters of the Choctaw Nation is in Durant. There is a new cultural center being planned along with expanding commercial developments. A new facility for housing the elderly is also in planning stages. The Choctaw Nation in and around the City will benefit from increased water security and conservation with this project.

Evaluation Criterion E – Department of Interior Priorities (10 points)

*Up to **10 points** may be awarded based on the extent that the proposal demonstrates that the project supports the Department of the Interior priorities. Please address those priorities that are applicable to your project.*

The City of Durant will use the AMR smart meters to more efficiently manage their water supplies, including the identification and repair of water leakage and losses currently occurring in the City's municipal water distribution system. Such water stewardship and conservation measures are also a priority of the Department of the Interior. This project will also result in enhanced water reliability, particularly during drought conditions, for local water users. This is also an initiative of the WaterSMART Program, through which Reclamation works with tribal and other entities to increase water supply through infrastructure modernization and related activities. From an environmental/ecosystem perspective, the City's anticipated water efficiency will result in augmented flows in the Blue River.

The Department of the Interior priority of supporting and enhancing the water and related economic security of Tribal Nations is also aligned with this project. Water security is improved through more efficient use of water and economic security is improved through decreased water losses and waste in the Tribal territory.

PROJECT BUDGET

Funding Plan

The following paragraphs respond to the Funding Plan questions outlined in the FOA.

How you will you make your contributions to the cost share requirement, such as monetary and/or in-kind contributions and source funds contributed by the applicant (e.g. reserve account, tax revenue, and/or assessments).

This proposal requests $75,000 in federal grant funding requiring a cost-share match from the City of Durant in the amount of $125,000. The City of Durant cost-share will consist of $125,000 of in-kind services applied towards smart meter installation. The City of Durant passed a resolution (attached to this proposal) supporting the funding for this project on July 10, 2018.

Describe any in-kind costs incurred before the anticipated Project start date that you seek to include as costs.

There are no in-kind costs incurred before the anticipated Project start date.

Describe any funding requested or received from other Federal partners.

There are no Federal funding requests that would affect the proposed project.

Describe any pending funding requests that have not yet been approved, and explain how the Project will be affected if such funding is denied.

There are no pending funding requests that would affect the proposed project.

TABLE 1. SUMMARY OF NON-FEDERAL AND FEDERAL FUNDING SOURCES

Funding Sources	Amount
Non-Federal Entities	
City of Durant In-Kind	$125,000
City of Durant Cash Match	$0
Non-Federal Sub-Total	**$0**
Other Federal Entities	
None	$0
Other Federal Subtotal	**$0**
REQUESTED RECLAMATION FUNDING	**$75,000**
Total Project Cost	**$200,000**

Budget Proposal

Table 2 provides a summary of the proposed project budget. The budget narrative then explains the budget proposal in more detail.

TABLE 2. BUDGET PROPOSAL

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	TOTAL COST
	$/Unit	Quantity		
Salaries, Wages and Fringe				
Supervisor	$23.64	400	hours	$9,456
Public Works Staff	$19.70	3,120	hours	$61,464
Travel				
Mileage		0	miles	$0
Lodging		0	days	$0
Per diem		0	days	$0
Equipment				
¾ Ton Truck	$13.40	1040	hour	$13,936
Backhoe 1.5	$38.60	1040	hour	$40,144
Supplies and Materials				
¾" and 5/8" Neptune AMR Mach 10 Meters	$237.00	300	unit	$71,100
Fittings/ Tools	$13.00	300	unit	$3,900
Contracts/Construction				
				$0
Other				
				$0
Environmental and Regulatory Compliance Costs				
				$0
Indirect Costs				
				$0
TOTAL ESTIMATED PROJECT COSTS				**$200,000**
Total In-Kind				$125,000
Total Cash Match				$0
Total Federal Request				**$75,000**

Budget Narrative

The proposed total project cost is $200,000. This application requests Reclamation funding of $75,000 to support the proposed project cost. The applicant will support the remaining $125,000 of the project costs with in-kind services considering a 12-month project duration. The following items provide more detail on the proposed budget.

Salaries and Wages and Fringe Benefits: Hourly rates listed for City of Durant staff are inclusive of fringe benefits and are included as in-kind leverage for the project. The rates listed in the budget proposal table represent the actual labor rates of the identified personnel.

Travel: Reimbursable travel is not required by the applicant staff for this project.

Equipment: All equipment used for the installation of the new meters including service trucks and construction equipment are owned by the City of Durant. No new equipment having a value of over $5,000 is anticipated for the project.

Materials and Supplies: Materials for this project include:

- 300 Smart meters, ¾" and 5/8" sizes, which have a unit cost of $237, for a total cost of $71,100
- Fittings and tools for 300 meter installations, at a total cost of $3,900

Contractual: N/A

Other: N/A

Indirect Costs: N/A

Environmental and Regulatory Compliance Costs: None.

Total Costs: The total cost of this project is $200,000. The City of Durant will provide $125,000 of in-kind contributions. The amount of Federal grant funding requested is $75,000.

- The City of Durant is registered in the System for Award Management (SAM)
- Unique Entity Identifier: DUNS Number 010473114
- The City will maintain an active SAM registration with current information at all times during which it has an active Federal award or application under consideration by a Federal awarding agency.

Environmental and Cultural Resources Compliance

The following paragraphs respond to the Environmental and Cultural Resources Compliance questions outlined in the FOA.

Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.

The proposed project will not significantly impact the surrounding environment. Installation of the project materials and supplies will occur within the already developed areas of the distribution system within the City's water service area.

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 activities associated with the proposed project are not anticipated to affect any threatened or endangered species, or related critical habitat.

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

There are no impacts anticipated to wetlands or surface waters as a result of the proposed project.

When was the water delivery system constructed?

The City of Durant's water system was built in the decade of 1910.

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.

No, the proposed project does not involve 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.

No, there are no buildings, structures, or features listed or eligible for listing on the National Register of Historic Places.

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

No, there not any known archeological sites in the proposed project area.

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

No, the proposed project will not have any adverse effect on low income or minority populations.

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

No, the proposed project will not limit access to or ceremonial use of Indian sacred sites. It will not result in any negative impacts to tribal lands.

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

No, the proposed project will not contribute to the introduction or spread of noxious weeds or invasive species.

Required Permits or Approvals

No permits are anticipated during the completion of this project.

ATTACHMENTS

- Letters of Support
- Official Resolution
- Shapefile of the City of Durant water service area
- Mandatory Federal Forms

Resolution No. 2018– 019

A RESOLUTION FOR PROJECT SUPPORT AND MATCH FUNDS COMMITMENT
U.S. Department of Interior - Bureau of Reclamation
FY18 WaterSMART Small-Scale Water Efficiency Program

The City of Durant, Oklahoma has determined the critical need for an **Automatic Meter Reader (AMR) project** in a focused section of the city, which has been consistently plagued with water leaks and inaccurate meter readings. The grant request in the amount of $75,000, with an in-kind labor and equipment match for an approximate $200,000 project, would greatly benefit the local residents and the City of Durant in efforts to reduce error and water usage cost, while increasing water efficiency. Proposed improvements include: 300 Neptune compatible meters, fittings, tools, and city's committed in-kind labor and equipment;

WHEREAS, the City of Durant is submitting a grant application to the U.S. Department of Interior - Bureau of Reclamation through the **FY18 WaterSMART Small-Scale Water Efficiency Program** requesting grant funds in the amount of $ 75,000 for the Automated Meter Reader (AMR) equipment and necessary apparatus;

WHEREAS, the City of Durant supports the proposed **FY18 WaterSMART Small-Scale Water Efficiency Program** grant request and is committed to provide the required leverage source to support the application budget necessary for a successful project.

NOW THEREFORE, BE IT RESOLVED, the City of Durant commits a minimum of $ 125,000 through in-kind labor and equipment match for the **FY18 WaterSMART Small-Scale Water Efficiency Program** grant budget to implement the Automatic Meter Reader (AMR) project upgrades.

PASSED AND APPROVED by the Mayor and City Council of the City of Durant, Oklahoma this July 10, 2018, at a regularly scheduled meeting of the governing body, in compliance with the Open Meeting Act, 25 O.S. § 301 et seq.

Jerry L. Tomlinson, Mayor

ATTEST:

Cynthia Price, City Clerk

CITY OF DURANT OFFICIAL SEAL STATE OF OKLAHOMA

Choctaw Nation of Oklahoma

Water Resources Department
P.O. Box 1210, Dmant, Oklahoma 74702-1210
Phone: (580) 924-8280 Toll Free: (800) 522-6170

Gary Batton
Chief
Jack Austin Jr.
Assistant Chief

July 17, 2018

Bureau of Reclamation
Financial Assistance Support Section
Attn: Matthew Reichert
P.O. Box 25007, MS 84-27814
Denver, CO 80225

Re: FY18 WaterSMART Small-Scale Water Efficiency Project for the City of Durant

Dear Mr. Reichert:

The Choctaw Nation whole-heartedly supports the City of Durant's application to the Bureau of Reclamation's WaterSMART Small-Scale Water Efficiency Program to install water efficient water meters. As with many communities in southeastern Oklahoma, the City of Durant is facing the high costs of water infrastructure that is vital to their economic prosperity. With the headquarters of the Choctaw Nation residing in Durant, we rely heavily on their infrastructure to conduct business.

We hope to see the City of Durant continue to grow and prosper as the dedicated headquarters of our tribe and as a fundamental part of the economy in southeastern Oklahoma. I believe this water efficiency project put forth by the City of Durant will produce a much-needed boost to the local economy and the overall health of this community.

The Choctaw Nation appreciates the opportunity to support the City of Durant in its endeavors to improve water infrastructure and water efficiency. If you need anything further, please do not hesitate to contact Mr. Ethan Schuth at (580) 522-6170 ext. 4636 or eschuth@choctawnation.com.

Sincerely,

Robert Dale Jackson
Executive Director
Natural Resource and Environment Science
Choctaw Nation of Oklahoma