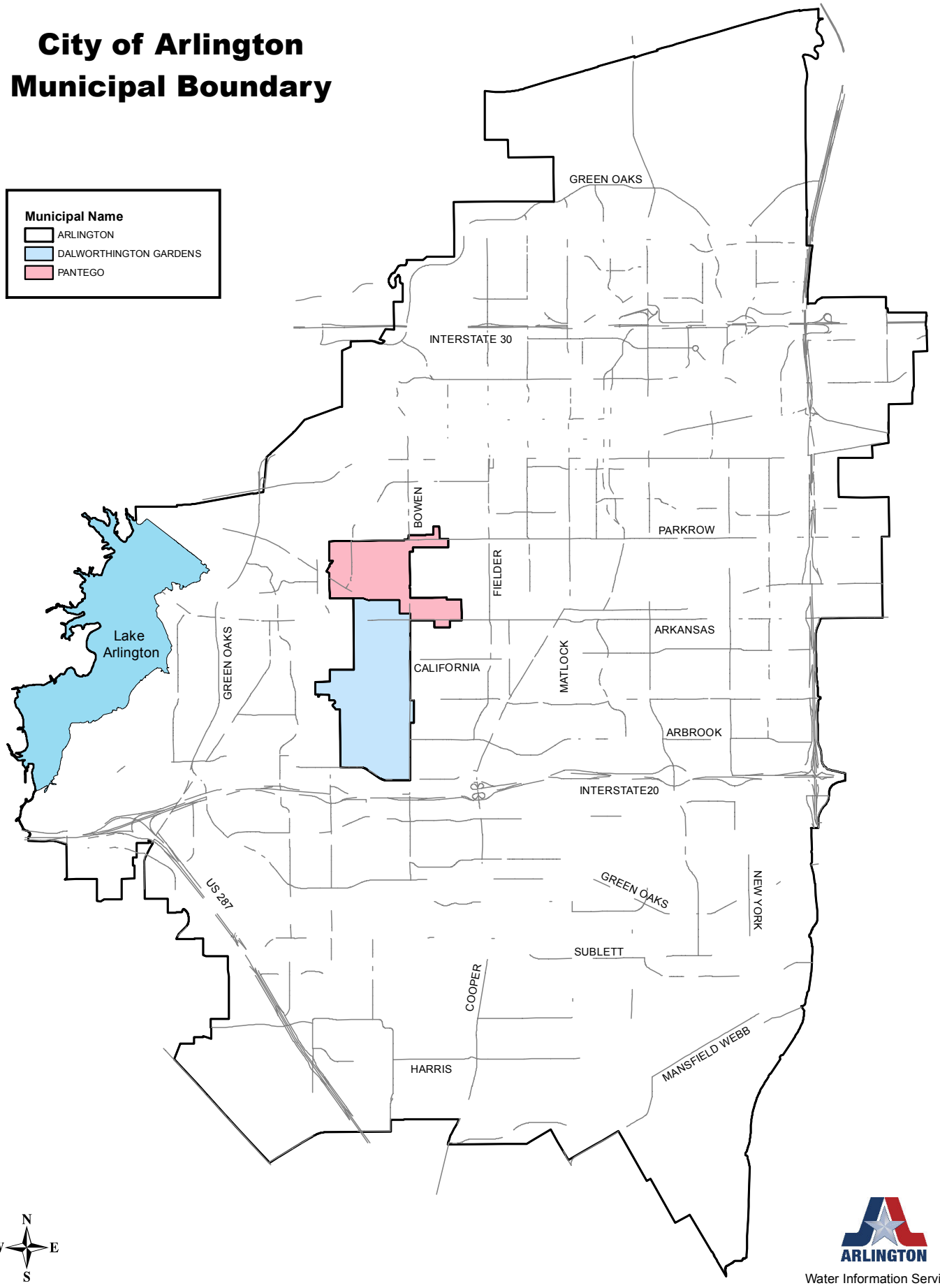
City of Arlington
Municipal Boundary



ARLINGTON

Water Information Services
July 18, 2013

This document is not intended for use as a survey product

Map Document: X:\Business\WIS\gis\COMMRES_GIS\Map_Requests\FY12-13\WA_Arlington_Municipal_Bdry_8.5_11 (tlb)

City of Arlington

Congressional Districts

TX-006

TX-012

TX-024

TX-026

TX-033

City of Arlington, TX – Leak Detection, Smart Metering and Customer Conservation Education

WaterSMART: Water and Energy Efficiency Grants
Funding Opportunity Announcement No. R16-FOA-DO-004
Due. January 20, 2016 4:00 PM (MST)

Proposal Submitted to:

Bureau of Reclamation
Financial Assistance Management Branch
Attn: Ms. Janeen Koza
Mail Code: 84-27852
Denver Federal Center, Bldg. 67, Rm. 152
6th Avenue and Kipling Street
Denver, CO 80225
jkoza@usbr.gov
303-445-3446

Applicant:

City of Arlington, Texas
101 W. Abram Street
Arlington, Texas 76004-3231

Project Manager:

Darryl Westbrook
Assistant Director of Water Utilities/Business Services
City of Arlington
101 W. Abram Street
Arlington, Texas 76004-3231
Telephone: (817) 459-6601
Fax: (817) 459-6807
Email: darryl.westbrook@arlingtontx.gov

Table of Contents

List of Figures

List of Tables

Technical Proposal and Evaluation Criteria

Executive Summary

Date: January 20, 2016
Applicant: City of Arlington, Texas
City: Arlington
County: Tarrant
State: Texas

The City of Arlington, Texas (Arlington or the City) is submitting this application on January 20, 2016 to be considered for the Bureau of Reclamation's WaterSMART: Water and Energy Efficiency Grants for FY 2016 No. R16-FOA-DO-004. The City is applying for **Federal Funding Group I** for **$300,000**. The project is expected to take **2 years**, including contingency time and cost a total of $4,112,500 of which Arlington will contribute $3,812,500. The project is scheduled from **October 2016** to **September 2018**. The project is not located at a Federal facility.

Project Summary

The City of Arlington Leak Detection, Smart Metering and Customer Conservation Education (the WaterSMART project) will include a **public awareness campaign** and **customer portal system upgrades** in addition to the deployment of **21,000 smart meters.** A City-wide **leak detection project** is also included in the scope in which approximately 50 leak detection sensors will be utilized in a "lift and shift" method to assess and reduce water loss from distribution. By strategically targeting multiple avenues to conserve water and improve efficiency, Arlington is confident its efforts will result in quantifiable and sustained water savings, and improved water management as described in the goals of the FOA. The City anticipates using the $300,000 in Bureau of Reclamation WaterSMART funding to contribute to the public awareness campaign, customer portal, leak detection and smart metering costs, which include hiring of a 3rd party installation contractor to assist in expediting the meter deployment by an additional 3,000 meters during the grant period. The City of Arlington anticipates that it will conserve **10.26%** of its water supply, or **6,267.71 acre feet a year (AFY)**. It will reduce electricity consumption by **2,583,459.44 kWh** through reduced water pumping and treatment, as well as **12.63 metrics tons of greenhouse gases** by reducing vehicle miles for metering reading and associated activities. The WaterSMART project is part of larger water conservation initiative by the City of Arlington, which includes additional smart meters and leak detection devices. By adding this project into Arlington's portfolio, the City expects to conserve a total of **25.79%** of its water supply or **15,756.00 AFY,** as well as **39.94 metrics tons of greenhouse gases** and **6,494,395.59 kWh** by the end of the grant period in September 2018.

Background Data

The City of Arlington Water Utilities Department serves a population of approximately 366,000 by maintaining 108,339 water meters for active accounts, and more than 1,570 miles of water distribution pipes. As part of its water conservation initiative, the City of Arlington began its efforts in 2011 to transition its meters population to an Advanced Metering Infrastructure (AMI). The City of Arlington Water Utilities staff have performed the smart meter installations, of which 45,400 are expected to be complete prior to the WaterSMART grant start in October 2016. Full implementation of the AMI system is projected to take place with approximately 9,000 customer meters per year being installed and/or retrofitted for AMI. The first phase of implementation for the Advanced Metering Infrastructure (AMI) system was completed in August 2012 with the installation of the database, communication, and customer interface infrastructure with approximately 17,000 manually-read meters retrofitted for radio read. The City also began looking towards leak detection to target repairs and line upgrades in 2014 to help minimize distribution side water losses.

Project Location

The City of Arlington is situated in Northeast Texas, twelve miles east of downtown Fort Worth. The city lies within Tarrant County and has an area of approximately 100 square miles.

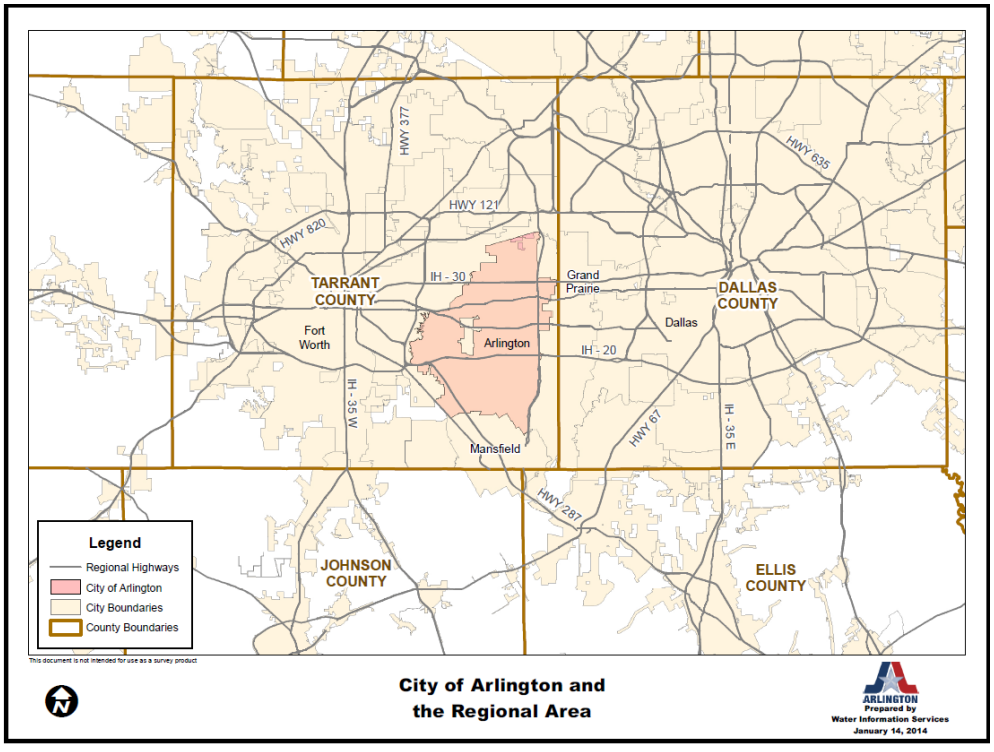


FIGURE 1 - LOCATION MAP

Water Supply and Water Rights

The City of Arlington purchases raw water from the Tarrant Regional Water District (TRWD). TRWD owns and operates four major reservoirs including Lake Bridgeport, Eagle Mountain Lake and the Cedar Creek and Richland-Chambers Reservoirs. TRWD has a service area that encompasses all or part of 11 North Texas counties with a population of over 1.8 million. Current reservoir levels[1] are shown in the table below.

TABLE 1 - TRWD RESERVOIR LEVELS, DECEMBER 2015

Reservoir	Normal Elevation (MSL)	Current Water Level below Normal (ft.)
Bridgeport	836.15	-0.15
Eagle Mountain	649.21	-0.11
Richland-Chambers	315.81	-0.81
Cedar Creek	322.45	-0.45
Arlington	550.71	-0.71
Benbrook	704.21	-10.21
Lake Worth	594.34	-0.34

Water purchased from TRWD is pumped about 75 miles from the Cedar Creek and Richland Chambers Reservoirs. Raw water is transported through 72-inch and 90-inch pipelines from the two TRWD reservoirs and delivered to the John F. Kubala Water Treatment Plant and/or discharged into Village Creek to be stored in Lake Arlington. In addition, the TRWD has the ability to deliver water stored in Benbrook Reservoir in southwest Tarrant County to the Kubala Plant and into Lake Arlington. Diversions are made from Lake Arlington to supply the Pierce-Burch Water Treatment Plant.

The supply from the East Texas reservoir system consists of a combination of pumpage from Richland Chambers Reservoir and Cedar Creek Reservoir. The two reservoirs are operated in parallel with consideration taken to use a larger amount of water from Richland Chambers Reservoir to minimize energy required to pump the water and produce a raw water blend that is more efficiently treated. In addition, the pumping capacity of the Richland Chambers pipeline is greater; therefore, the majority of the pumpage will normally be taken from Richland Chambers Reservoir. The raw water supply system operated by the TRWD is shown in the figure below.

[1] http://www.trwd.com/

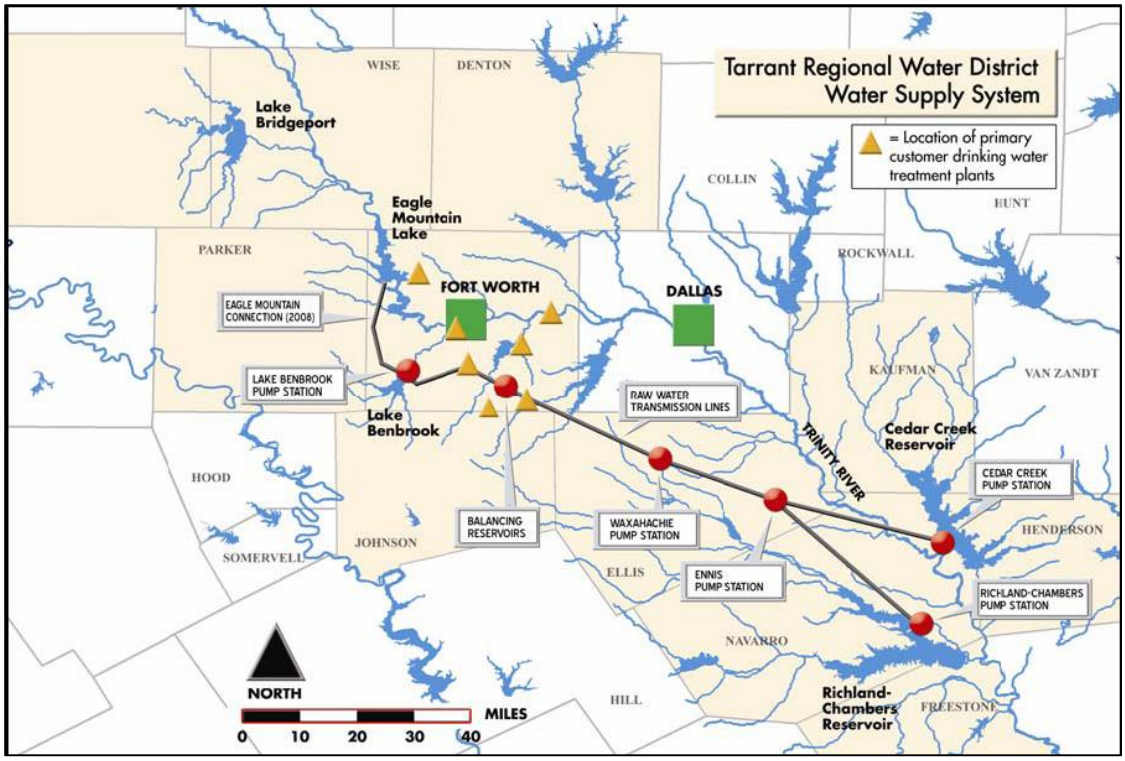


FIGURE 2- TRWD WATER SUPPLY SYSTEM

Water Distribution

The City operates over 1,570 miles of distribution pipe. The table below shows a summary of the recorded current pipe materials and length in the City's distribution network. Over 40% of the pipe length is made up of Asbestos-Cement (transite) material, which is susceptible to leaching and softening. An additional 40% is made up of PVC, which is susceptible to brittle breaks and deformation if exposed to high temperatures. On average, the City's pipes are 25 years old.

TABLE 2 - PIPE MATERIAL AND LENGTHS

PIPE MATERIAL	PIPE COUNT	LENGTH (ft)
UNKNOWN	599	16,376.67
AC	20,596	3,056,108.66
C301	491	111,870.02
C303	1,359	306,759.67
CAST	2,875	411,728.98
CONCR	1,586	304,727.45
COPP	188	2,976.78
DUCT	2,020	195,273.34
NOT	303	17,040.46
OTHER	7	1,289.76
PVC	34,800	3,099,056.63

PVCO	43	2,256.76
STEEL	1	278.38
	64,868	**7,525,743.57**

Current Uses and Projected Demand

With a population of 366,000, Arlington is the seventh most populous city in the state of Texas and fifteenth in the country. A breakdown of customer classes currently served in the City of Arlington demonstrates that roughly 94% of customers are residential. The other customer class includes irrigation and construction/temporary use meters.

TABLE 3 - CUSTOMER CLASS DISTRIBUTION

Customer Class	Percentage of Customer Meters
Residential	93.98
Commercial	3.48
Industrial	0.07
Other	2.29
Public	0.19

Please see below for a summary of the City's meter counts by size.

TABLE 4 - WATER METER COUNT BY METER SIZE

Meter Size	Number Of Meters	% of Meter Pop.
3/4"	67,441	62.250%
5/8 X 3/4"	32,465	29.966%
1"	3,506	3.236%
1 1/2"	1,594	1.471%
2"	2,854	2.634%
3"	176	0.162%
4"	127	0.117%
6"	157	0.145%
8"	15	0.014%
10"	4	0.004%
Totals	**108,339**	**100%**

Despite recovering from recent drought conditions, the Dallas–Fort Worth area is rapidly growing in population and water demand. Over the next 50 years, the North Texas population is

expected to more than double to 4.3 million and 430,000 acre-feet of new water supply will be needed prior to 2060. The annual population growth of the City itself according to the U.S. Census for 2010- 2014 was 4.9% but has been even higher in recent years.[2] By multiplying 4.9% to the 19,910,430,301 gallons or 61,103.12 AFY produced as reported in the 2014 Texas Water Development Board (TWDB) Water Audit, Arlington would expect an additional demand of 975,611.084.75 gallons over the next four years or 2,994.1 acre feet (equivalent to 243,902,771.19 gallons/ year or 748.51 AFY). The City expects to meet future demands through an active water conservation program, of which leak detection, AMI implementation and customer outreach is an integral part.

Shortfalls in Water Supply

The state of Texas has been susceptible to dramatic climate shifts in recent years[3]. A comparison of drought area as a percent of the state over time illustrates how quickly, and extensively parts of the state can shift to extreme or exceptional drought conditions. Stage 1 of the Drought Contingency and Emergency Water Management Plan was enacted in June 2013 when water supplies dropped to 75% capacity. In January 2015, the water supplies dropped to an unprecedented 60.5%, dangerously advancing towards Stage 2 for the first time ever. The TRWD service area was placed under Stage 1 watering restrictions in 2014-2015. Recently, more normal precipitation has helped ease drought conditions across the region[4].

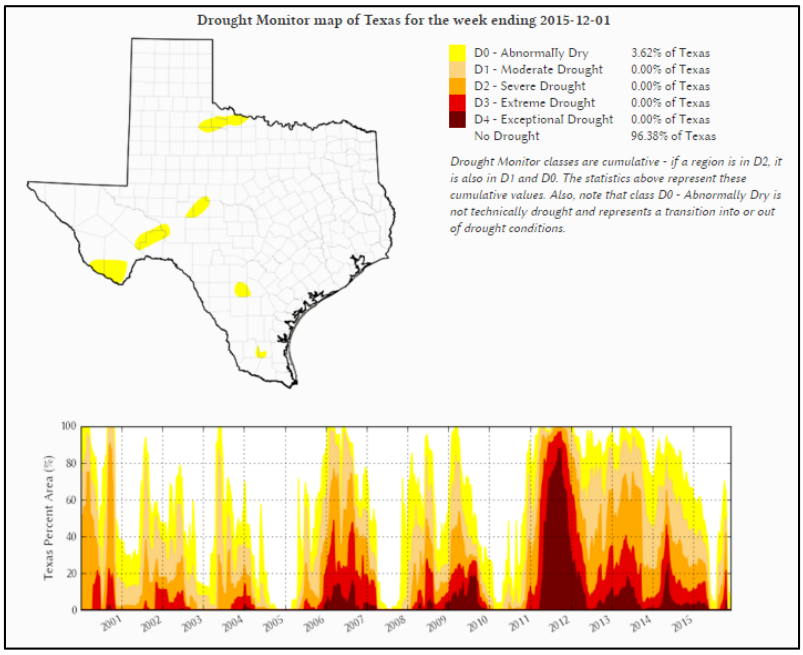


FIGURE 3 - TEXAS DROUGHT AREA % OVER TIME

[2] http://quickfacts.census.gov/qfd/states/48/4804000.html
[3] http://waterdatafortexas.org/drought/drought-monitor
[4] http://www.srh.noaa.gov/fwd/?n=drought

Arlington is located in North Central Texas, between the cities of Dallas and Fort Worth. The city lies in the Eastern Cross Timbers eco-region of Texas. The soils are mainly red and yellow sands that have been leached of nutrients. The climate in North Central Texas is humid and subtropical during the hot summer months and is prone to spring and fall thunderstorms. Summer temperatures can exceed 100° F for relatively short periods with the heat-humidity indexes as high as 117° F.

Past Working Relationships with Reclamation
The City of Arlington does not currently have any relation to a Bureau of Reclamation project.

Technical Project Description

The City of Arlington's WaterSMART project includes leak detection, a water conservation education campaign for the City's customers and deployment of 21,000 smart meters over a 2 year period. Please see below for more information on the individual project components.

Leak Detection:

The project will include the selection and deployment of the best leak detection technologies for the City of Arlington. This project will seek to combine AMI technology with portable, in-line, acoustic wave pressure leak detection systems which are delivered with sophisticated software analysis tools in the targeted deployment area. By attaching an acoustic sensor to the AMI or AMI endpoint, the city's utility will be to able monitor its distribution system along with customer service lines to get complete system coverage. The acoustic sensor monitors pipe conditions, looking for changes in the sound that travels down the pipe. The sensor has been designed to listen for a certain frequency range that represents the frequency a leak would produce. The sensors will leverage the AMI communications network to provide a snapshot of its system as often as it obtains the network reads.

As part of a larger initiative, the City is engaging in a full distribution system leak detection project. For the WaterSMART project, the City of Arlington intends to procure 50 leak detection sensors will be utilized in a "lift and shift" method, to assess the City's distribution system. In Fiscal Year 2014, 10 leaks were pinpointed and an estimated 0.7 MG per month of water loss was recovered. Early leak detection will help the City to avoid disruptive emergencies, prioritize future pipeline replacements and improve its overall asset management strategy.

Smart Metering:

As part of the WaterSMART project, Arlington will upgrade 21,000 of its manually read meters to smart meters. The City will employ a combination of factors to determine which meters are replaced, which makes the change outs as efficient as possible:

1. Any meter that is visited for an investigation or service of any kind that is greater than 10 years old and non-AMI, is replaced during the visit.

2. The City has targeted certain priority entities, such as the Arlington School District, to bring all of their service points into one billing cycle.
3. Finally, as a way to ensure meter reading services are still operating efficiently, route cycle is used to determine which routes are near completion in order to close out the cycle.

The City is currently using their staff and hiring additional part-time staff for all meter replacements, but they will consider using a 3rd party installation contractor if grant funding from the Bureau of Reclamation is received. This would expedite the replacement process to allow the City to replace 21,000 meters over the next two years. Each installation is captured with GPS coordinates and incorporated into the city's geographic information system (GIS). This information makes it easier to locate meters during future field investigations and helps support the city's distribution system modeling efforts. New meters will improve the accuracy of reporting consumption data. The utility will use the meter data to assist with identifying customer-side leaks and potential theft in order to conserve water.

Sensus 520M MIUs and Sensus SRII meters were selected through a competitive process from a wide field of products. The SR II magnetic drive positive displacement meters use an oscillating piston to provide greater sensitivity in measuring a wide range of flows for a variety of residential applications. The meter design includes a high quality cast bronze case, dual inlet ports and streamlined flow pattern. With few exceptions, all meters are either positive displacement (2" and smaller) or compound (3" and larger) and are located in outside pits and vaults within existing rights-of-way.

The 520M is a radio transceiver with two-way communication ability and specifically designed for submersible, pit environments. Phase 1 of the AMI program included standing up 5 collectors, which are all positioned on water towers in the City. This setup provides full coverage for the remaining MIUs to be installed. All communications will be transmitted via radio frequency with primary use radio spectrum on the Sensus FlexNet communication network.

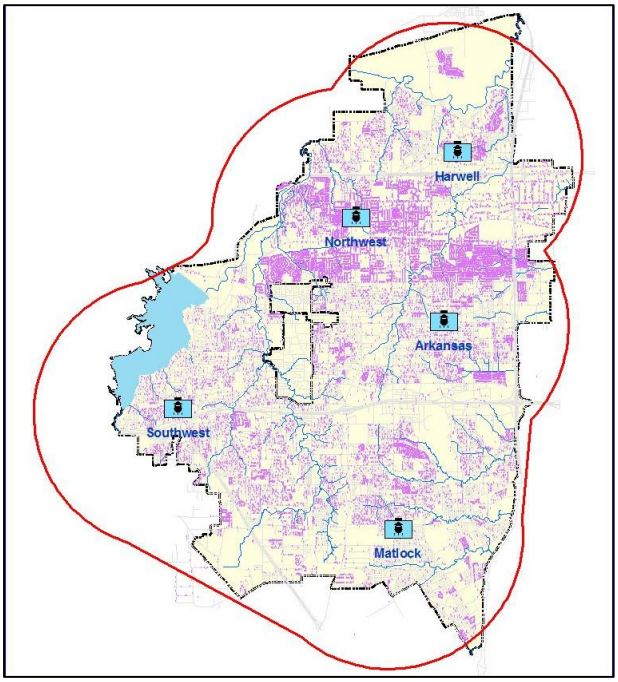


FIGURE 4 – NETWORK COVERAGE WITH 5 COLLECTORS IN CITY OF ARLINGTON

Public awareness campaign (Customer Conservation Education):

The WaterSMART program includes an upgrade to Arlington's meter data management system (MDMS) and customer portal. Customers will have access to an online web portal that will include drill down functionality from the water usage graph. A customer will be able to click on the month bar to show daily usage and then click on the daily usage bar to show hourly usage. Arlington's current web portal does not include any drill down features. The upgrade will also include cost projections for the monthly billing based on the current usage pattern for the month and current rates. Engaging customers in this way with tangible results helps them understand and change their consumption habits, which in turn assists the City with Customer-side Leak Identification and Improved Customer Water Management.

The City of Arlington will build a robust public outreach and education campaign as part of the WaterSMART grant project. The plan will drive messaging in several forms (For example: brochures, website announcements, bill notices, advertising, press releases, social media, etc.), and will occur at strategic points during the smart meter deployment timeline. Arlington will seek to use multiple communications channels to maximize the audience's reception of the information. New tool kits, including the web portal and notifications mentioned previously will be used to empower customers to become more efficient water users.

Evaluation Criteria

The proposed project will improve performance of water distribution infrastructure, increase meter accuracy, engage customers in water conservation efforts and improve leak detection for the City of Arlington. The WaterSMART project will also reduce the energy requirements for water treatment and fuel required for meter reading.

Evaluation Criterion A: Water Conservation

The City of Arlington's WaterSMART Project will result in large quantities of water conservation and energy and cost efficiencies for the utility through enhanced leak detection, improved water management and accuracy, reductions in energy use through reduced water pumping and treatment, and overall decrease in greenhouse gas emissions from reduced vehicle miles for metering activities. See the sections below for more detail.

Subcriterion No A.1: Quantifiable Water Savings

Describe the amount of water saved. 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 provide sufficient detail supporting how the estimate was determined, including all supporting calculations.

The City has calculated water savings through the proposed WaterSMART project to total 6,267.71 AFY. Arlington expects it could increase these savings to 15,756.00 AFY (inclusive of the WaterSMART project) by incorporating savings from its current water conservation program which began in 2011 and has included installation of additional smart meters and leak location technologies. Please see the individual sections for calculations to support the water savings represented.

TABLE 5: SUMMARY OF WATER SAVINGS FOR 2 YEAR WATERSMART GRANT AND 7 YEAR CONSERVATION PROGRAM

Conservation Criteria	Water Saved (AFY) for 2 Year WaterSMART Grant Project	Water Saved (AFY) for 7 Year Arlington Conservation Program
Customer-side Leak Identification	723.38	3,666.19
Improved Customer Water Management	1,756.78	2,287.26
Replace Aging Meters	1,136.74	5,554.78
Distribution-side Leak Identification	2,444.12	3,594.27
Customer Theft Identification	206.68	653.50
Total	**6,267.71**	**15,756.00**

The City of Arlington estimates that at the end of the grant period, the City will add a total of 21,000 smart meters from the WaterSMART project to its portfolio, bringing the total smart meter population to 66,400. The smart meter specific savings metrics calculated in subsequent

sections are based on the percent of the entire meter population that have been converted to AMI (smart meters).

TABLE 6: SMART METER POPULATION PERCENTAGES

Conservation Program Metrics (at end of year 7)		2 Year WaterSMART Project Metrics
66,400	**Total Project Smart Meter Installs**	21,000
108,339	**Total Population Meter Count**	108,339
61.29%	**% Smart Meter Installs Complete**	19.38%
53,313.20	**Total Water Consumption (AFY)**	53,313.20
32,675.18	**Water Consumed as a % of Smart Meter Population (AFY)**	10,334.02

For the WaterSMART project, the City has targeted 21,000 meters of its 108,339 meters to be transitioned to smart meters, which is 19.38[5]% of the entire meter population. The City's TWBD 2014 Water Audit includes a total water consumption of 53,313.20 AFY. By applying 19.38% to the total water consumption, Arlington estimates that the water consumption for the WaterSMART project population is equal to 10,344.02. It is believed that the meter accounts upgraded would be representative of the entire population as a percentage of water consumed.

The City of Arlington anticipates that 66,400 meters or 61.23% of Arlington's meter population will be transitioned to AMI by the conclusion of the WaterSMART grant period in September 2018. The water consumption for the entire smart meter population at the end of the 7 year deployment life span in September 2018 is estimated at 32,675.18 AFY.

The WaterSMART Project will save water across the following 5 areas. The methodologies follow in the sections below.

1. Customer-side Leak Identification
2. Improved Customer Water Management
3. Improved Accuracy of Meters
4. Distribution-side Leak Identification
5. Theft Identification

As part of project completion, the City intends to revisit these methodologies and calculations to determine if the overall expected water savings have been met.

[5] Infinite decimal used in calculations.

Customer-Side Leak Identification

AMI meters will provide hourly usage data on a daily basis to the City of Arlington and its customers. Regular hourly usage data can assist in identifying potential leaks to the customer and the utility. If a particular account experiences high levels of usage continuously it is very likely the customer is experiencing a leak. The data provided by the AMI meters will illustrate the continuous usage to the utility and the system's supporting software. Customers will have the ability to configure alerts within the customer portal to improve notify them if a potential leak is present within the system. Additionally, the utility will receive notifications of potential leaks and will work with its customer base to inform them of potential unintended water losses.

Customer-side leaks are the cause of a large quantity of water loss within the City of Arlington. The Environmental Protection Agency (EPA) states that the average household's leaks account for more than 10,000 gallons of water wasted a day. Based on information from the EPA[6], the City anticipates that it will reduce 7% of total usage due to corrective measures that will come from proactive customers. The City utilized a savings of 7% versus the 10% figure from the EPA as a means to be conservative, with the assumption that not all leaks on the customer side would be repaired.

TABLE 7: CUSTOMER LEAK IDENTIFICATION SAVINGS CALCULATION

	Water Consumption (AFY)	% Savings	Water Conserved (AFY)
2 Year WaterSMART Grant Project	10,344.02	7%	723.38
7 Year Arlington Conservation Program	32,675.18	7%	2,287.26

Inclusive of all smart meter deployments over the past several years, the City of Arlington expects it could realize a cumulative savings of 2,287.26 AFY via customer side leak reduction by the end of the WaterSMART project period. That calculation is based off of 66,400 meters or 61.23% of Arlington's meter population being transitioned to AMI per the deployment schedule. Please see table 6 for the Water Consumption calculations for the 2 year WaterSMART project versus the 7 Year Arlington Conservation Program.

Improved Customer Water Management

The data provided by AMI meters will equip water customers with the ability to better manage their usage via a customer portal and proactive notifications via text or email. The City of Arlington provides AMI customers with a web-portal that illustrates interval consumption information to customers, allowing them to better understand their water usage and take

[6] http://www3.epa.gov/watersense/pubs/fixleak.html

corrective steps to reduce consumption. Additionally, the upgrade to the web-portal provides customers with daily updates and alerts that can notify them via email if their water consumption has reached a particular threshold[7]. System generated notifications will assist customers in better managing their water usage and improve water conservation at the City of Arlington.

As part of a recent study with Texas A&M University, citizens of Arlington were given the option of enrolling in a web portal to view their metered usage. Web portal users' water data was collected and analyzed compared to a control group of similar customers who did not use the web portal. The before and after usage of both the control and treatment groups were tested to determine whether access to the portal had a significant impact on consumer habits. Results showed that there were statistically significant differences between the groups, and that portal users used on average 8% less water in the winter and 17% less water in the summer than non-users.[8] Based on this recent study, the City of Arlington believes it can achieve 17% savings by providing a web portal and active customer education and engagement options.

TABL 8: IMPROVED CUSTOMER WATER MANAGEMENT SAVINGS CALCULATION

	Water Consumption (AFY)	% Savings	Water Conserved (AFY)
2 Year WaterSMART Grant Project	10,344.02	17%	1756.78
7 Year Arlington Conservation Program	32,675.18	17%	5,554.78

By accounting for the estimated 61.23% of customers who would have access to the web portal and granular smart meter data, as well as participation in customer education initiatives, Arlington expects to increase these savings to 5,554.78 AFY as part of its conservation program.

Improved Meter Accuracy

The new AMI meters will replace aging, less accurate meters. As meters age they deteriorate and slow down, making meter readings less accurate. Water users with older meters will use more water because they are charged less for consumption. As meter accuracy improves it will deter increased consumption. The current City average age of non-AMI meters is 20 years. The City's replacement efforts will target older meters first, so the average age of the 21,000 to be replaced is greater than 20 years. A conservative figure of 11% was used to estimate the reduced

[7] http://twri.tamu.edu/publications/conservation-matters/2014/june/automated-meter-infrastructure-project-how-technology-can-reduce-water-usage/

[8] Understanding the Influence of Sociodemographics, Psychosocial and Behavioral Factors on Water Conservation in Texas II: Post-Intervention Analysis. Authors: Anna Faloon; Allen Berthold; Kelly Brumbelow; Kevin Wagner. For Submission to: ASCE WRPM. Not yet published as of 12/22/15.

consumption due to increased accuracy and associated consumption reductions.[9] This assumes approximately half of the meters replaced will be in the 20-25 year range and an accuracy of 96%, while the remaining are 25-30 years old and in the 82% accuracy range. An estimated summary of the type and quantity of meters and sensors that will be installed is provided in the "Sensus Smart Meter Replacements/Upgrades for Project by Size" table.

TABLE 9: UNACCOUNTED FOR WATER SAVINGS CALCULATION VIA METER ACCURACY

	Water Consumption (AFY)	% Savings	Water Conserved (AFY)
2 Year WaterSMART Grant Project	10,344.02	11%	1,136.74
7 Year Arlington Conservation Program	32,675.18	11%	3,594.27

By applying this calculation to the total of all smart meters deployed by the end of the WaterSMART grant period, Arlington could realize 3,594.27 AFY of unaccounted for water recovered due to metering inaccuracies.

Distribution-side Leak Identification

Over 40% of the City's existing pipelines are made of transite material and are 25 years old or older. Another 40% are made of PVC, which are expected to have many years of service available. However, the City of Arlington anticipates seeing a significant number of leaks and pipeline failures as these pipelines approach the end of their useful life. Currently, the City of Arlington calculates that its water distribution system experiences 12.75% of unaccounted for water from its total system production. That 12.75% does include estimates of unmetered usage for system flushing, hydrant use and other activities. Arlington believes much of the losses are due to leaks within the distribution system. Leaks not only result in continuous water loss, but can produce main line breaks that typically lead to extraordinary water losses.

TABLE 10: SYSTEM LOSS CALCULATION

2014 Water Produced (Gallons)	2014 Water Consumed (Gallons)	Net (Gallons)	% System Loss
19,910,430,301	17,372,088,000	2,538,342,301	12.75%
2014 Water Produced (Acre Feet)	**2014 Water Consumed (Acre Feet)**	**Net (Acre Feet)**	**% System Loss**
61,103.12	53,313.201	7,789.92	12.75%

[9] http://www.wwdmag.com/meters/determining-economical-optimum-life-residential-water-meters

The installation of leak detection devices within the water system will assist the utility in identifying pipelines experiencing leaks for repair and assist in realigning the City's asset management program related to pipeline replacement. The improved prioritization of those replacements will significantly reduce water losses. Based on research from the Institute of Research Construction, typical leaks in water distribution systems are between 20-30%.[10] The City of Arlington anticipates that it will reduce utility-side losses by 4% of total system usage, or approximately 30% of their current 12.75% system loss for the WaterSMART Project. In year 2014, Arlington identified 10 leaks alone that resulted in an estimated 0.7 MG per month of water loss.

TABLE 11: WATERSMART PROJECT DISTRIBUTION SIDE SAVINGS CALCULATION

Water Produced (AFY)	% Savings	Water Conserved (AFY)
61,103	4%	2,444.12

The City of Arlington expects that by coupling leak detection technologies from this project with current leak location initiatives, it could increase distribution side savings by an additional 2%, which would equate to 3,666.19AFY.

Theft Identification

The AMI meters will assist in identifying instances of theft quickly to avoid unnecessary water losses. If water is used at locations which are considered "OFF" accounts, the software system will receive a notification, thus triggering an investigation in the field and eliminating theft. Due to uncertainty of the level of theft currently at the City of Arlington, the City assumes that AMI meters will lead to water conservation of approximately 2% of total consumption due to Theft Identification. This amount to 206.68 AFY for the WaterSMART 2 year grant period. It is difficult to quantify the true level of theft, since this is only discovered during re-read or other meter servicing activities. With an improved level of data available to the City from use of AMI, they will be better equipped to identify and deter water theft.

TABLE 12: THEFT RECOVERY SAVINGS CALCULATION

	Water Consumption (AFY)	% Savings	Water Conserved (AFY)
2 Year WaterSMART Grant Project	10,344.02	2%	206.68
7 Year Arlington Conservation Program	32,675.18	3%	653.50

[10] https://www.nrc-cnrc.gc.ca/ctu-sc/files/doc/ctu-sc/ctu-n40_eng.pdf

By applying the 2% reduction from unauthorized use to the entire smart meter population at the end of the grant period, Arlington could realize a water use reduction of 653.50 AFY.

What is the applicant's average annual acre-feet of water supply?

As described in the Performance Measures, Arlington's average annual water supply as reported to TWDB is 17,372.09 MG or 61,103.12 acre-feet.

Where is the water that will be conserved currently going (e.g., back to the stream, spilled at the end of the ditch, seeping into the ground, etc.)?

Water that will be conserved is currently seeping into the ground due to leaks in the distribution system, going to use as unaccounted for in cases of theft or inaccurate meters, or to consumers that are not closely monitoring their use. Through this project the hope is there will be less demand on the reservoirs that supply the City of Arlington's water and/or more water will become available to other water suppliers in the region through water marketing.

Where will the conserved water go?

Through this project the City anticipates there will be less demand on the reservoirs that supply the City of Arlington's water and/or more water will become available to other water suppliers in the region through water marketing.

For Municipal Metering:

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.

Arlington expects to save 6,267.71 AFY. Please see the section under Subcriterion No. A. 1: Quantifiable Water Savings for all calculations and references.

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

Reductions have been determined from testing, case studies and other assumptions as outlined previously. Please refer to the section under Subcriterion No. A. 1: Quantifiable Water Savings for all calculations and references.

c. For installing individual water user meters, 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.

Reductions have been determined from testing, case studies and other assumptions as outlined previously. Please refer to the section under Subcriterion No. A. 1: Quantifiable Water Savings for all calculations and references.

d. If installing distribution main meters will result in conserved water, please provide support for this determination (including, but not limited to leakage studies, previous leakage reduction projects, etc.). Please provide details underlying any assumptions being made in support of water savings estimates (e.g., how leakage will be reduced once identified with improved meter data).

Please refer to the section under Subcriterion No. A. 1: Quantifiable Water Savings for all calculations and references.

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

Please see below for the expected quantity of meters to be upgraded to smart meters by size. Arlington has selected Sensus as the AMI vendor, who provides the Sensus SRII meters and the meter interface units (MIU) to be installed. Arlington may adjust the individual quantities represented at its discretion to maximize the value and the scheduling of the WaterSMART grant period. However, 21,000 meters is the anticipated total meter count for the WaterSMART grant.

TABLE 13: SENSUS SMART METER REPLACEMENTS/UPGRADES FOR PROJECT BY SIZE

Smart Meter By Size	**Quantity**
3/4 inch Smart Meter	13072
5/8 x 3/4 inch Smart Meter	6293
1 inch Smart Meter	680
1 1/2 inch Smart Meter	309
2 inch Smart Meter	553
3 inch Smart Meter	34
4 inch Smart Meter	25
6 inch Smart Meter	30
8 inch Smart Meter	3
10 inch Smart Meter	1
Total	**21,000**

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

As part of project completion, the City intends to revisit these methodologies to determine if the overall expected water savings have been met. Please refer to the section under Subcriterion No. A. 1: Quantifiable Water Savings for all calculations and references.

Subcriterion No A.2: Percentage of Total Supply

Provide the percentage of total water supply conserved. State the applicant's total average annual water supply in acre-feet.

$$\%\, Total\ Water\ Conserved = \frac{6{,}267.71}{61{,}103.12} = 10.26\%$$

Evaluation Criterion B: Energy-Water Nexus

The proposed project will reduce the electrical energy required to pump 6,267.71 AFY of water supplied to the system. It will also significantly reduce the city's fuel consumption associated with meter reading:

- The city's approximately 108,000 meters are read monthly by a staff of eight full-time meter readers that incur a total of about 110,000 miles annually to obtain meter readings for billing purposes. However, that is the full population. For purposes of obtaining an estimate for the WaterSMART project, Arlington assumed a reduction of 19.38% vehicle miles driven to correlate to the percent of smart meters deployed from the WaterSMART project. Please see the calculation table below.
- A conservative figure from the Environmental Protection Agency (EPA) assumes a reduction of 8.8 kilogram of carbon emission per gallon. Arlington estimates its vehicles average 15 miles/ gallon. Therefore, the City of Arlington will be reducing its carbon footprint impact by 12.63 metric tons for the WaterSMART project.

TABLE 14: VEHICULAR GREENHOUSE GAS REDUCTION FROM WATERSMART PROJECT

Annual Miles	CO2 Emissions (grams) per Mile	Total CO2 Produced (Metric Tons)	Vehicle Mile Percentage Reduced from WaterSMART Grant Project	Total CO2 Emissions Reduced (Metric Tons)
110,000.00	592.47	65.17	19.38%	12.63

By applying the % of smart meter population at 61.23%, the metrics tons of CO2 savings would increase to ***39.94.*** This represents the total reduction in vehicle miles and greenhouse gas reduction to be realized from the City of Arlington, combining the WaterSMART project with current smart meter upgrades.

Additionally, fuel needs for the Arlington field staff will be reduced as Arlington's field crew will now be able to pinpoint leakages in the distribution system more efficiently with the installed leak detection technology. This will eliminate the number of miles driven and the amount of time City staff will need for leak inspections.

Subcriterion No B1: Implementing Renewable Energy Projects Related to Water Management and Delivery

The City of Arlington will not pursue a renewable energy project within the WaterSMART Project.

Subcriterion No B.2: Increasing Energy Efficiency in Water Management

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

The proposed project will reduce the electrical energy required to pump 6,267.71 AFY of water supplied to the system. The City additionally will capture the following energy efficiencies:

- A reduction in meter reading which in turn reduce the City's carbon imprint from vehicle miles driven by 12.63 metric tons for the WaterSMART project and 39.94 metrics tons overall. Please see above for the calculation.
- The primary energy efficiencies realized with AMI will be in a reduced volume of water being pumped and treated (inclusive of water and wastewater). Pumping requirements are expected to be reduced by 10.26%, which equates to 2,583,459.44 kWh for the WaterSMART project. By correlating 25.79% water conservation for the City of Arlington's larger water conservation program, the City could save 6,494,395.59 kWh.

TABLE 15: WATERSMART PROJECT ENERGY SAVINGS FROM REDUCED WATER AND WASTEWATER ENERGY TREATMENT AND PUMPING

Water and Wastewater Energy Treatment and Pumping		
Annual kWh for Pumping and Treatment	**% Reduction**	**Total Energy Savings (kWh)**
25,185,816.00	10.26%	2,583,459.44

Please provide sufficient detail supporting the calculation of any energy savings expected to result from water conservation improvements. If quantifiable energy savings are expected to result from water conservation improvements, please provide sufficient details and supporting calculations. If quantifying energy savings, please state the estimated amount in kilowatt hours per year.

Please see the section above for calculations and additional information.

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?

The City of Arlington owns and operates two water treatment facilities, the Pierce-Burch (PB) Water Treatment Plant (WTP) and the John F. Kubala (JK) WTP. The PB facility includes two treatment plants: the North and the South. The North WTP is rated at 34.1 million gallons per day (MGD) and the South at 75 MGD. The PB North WTP has not been in active production for several years and since the conversion of the South WTP to ozone treatment. The PB WTP is supplied with raw water from Lake Arlington through the Raw Water Pump Station. The JK WTP was built in the late 1980s with a rated capacity of 25 MGD in response to the rapid growth in the southern part of the city. The JK WTP was granted a state regulatory approval for up rating to 32.5 MGD in 1989. In 1999 the city completed the WTP Modification project where

ozone treatment and Biologically Active Carbon (BAC) filtration were implemented as the modified treatment processes for both PB South WTP and JK WTP. The JK WTP had two subsequent expansions bringing the total capacity to its current rating of 97.5 MGD. The JK WTP is supplied with raw water from Tarrant Regional Water District (TRWD). The JK WTP serves primarily the upper pressure plane (UPP), and the west pressure plane (WPP); it is capable of supplying the entire city. The PB WTP is dedicated to serve the lower pressure plane; it can supply the UPP through the utilization of Charles F. Anderson, Jr. (CFA) pump station and Arkansas pump station.

TABLE 16: ARLINGTON NUMBER OF PUMPS BY TYPE

Type of Pump	Number of Pumps
Raw Water Pumps	5
Pierce-Birch WTP HSPS Pumps	8
Kubala WTP HSPS Pumps	7
Kubala WTP Recycle Pumps	4
Booster Pump Station	15

The City of Arlington treats the raw water received from TRWD and delivers throughout the city through the city's pressurized distribution system. The city has established a power cost for its pumping through delivery of $123.09/million gallons (MG).

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

The energy savings estimates originate from the point of diversion from TRWD reservoirs.

Does the calculation include the energy required to treat the water?

Yes, the calculation involved all energy required for treatment and distribution of water.

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

In 2012, the US Environmental Protection Agency (EPA) designated ten counties in North Texas, including Tarrant, as nonattainment for the pollutant ozone in accordance with the 1997 8-hour ozone National Ambient Air Quality Standards (NAAQS). These standards are designed to protect human and environmental health, and ground-level ozone is monitored and targeted for reductions due to its potentially harmful effects. On-road mobile sources, like cars and trucks,

are one of the main sources of ozone-causing emissions. Development of an air quality plan, known as the State Implementation Plan (SIP), is required for all nonattainment areas in order to demonstrate how ozone will be reduced to levels compliant with the NAAQS. The SIP for the Dallas-Fort Worth nonattainment area includes programs to reduce vehicle miles driven, including city-owned vehicles.

The proposed project will also significantly reduce the city's fuel consumption associated with meter reading and equate to 12.63 metric tons of greenhouse gas reduction for the WaterSMART project and 39.94 metrics tons overall.

Evaluation Criterion C: Benefi*t*s to Endangered Species

The City of Arlington receives treated water from Tarrant Regional Water District (TRWD). TRWD develops and maintains reservoirs throughout the Trinity River basin. As the population and demand for water in the Dallas-Fort Worth area increase, greater demands are placed on these reservoirs.

The Texas Water Development Board's 2016 Region C Water Plan included the following table which presents the federally listed threatened and endangered species identified by UWFWS in Region C counties. Indigenous and migratory species may rely on waters in Region C. In Tarrant County, the list includes the Bald Eagle, Least Tern, Piping Plover, and Whooping Crane. Additionally, the USFWS website lists Ren Knot as a threatened species in Tarrant County[11].

TABLE 17. FEDERAL ENDANGERED OR THREATENED SPECIES IDENTIFIED BY USFWS IN REGION C COUNTIES

Species	Federal Status [b]	County														
		Collin	Cooke	Dallas	Denton	Ellis	Fannin	Freestone	Grayson	Henderson	Jack	Kaufman	Navarro	Parker	Rockwall	Tarrant	Wise
Bald Eagle	DM	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Louisiana Black Bear	T						X										
Black Capped Vireo	E		X	X							X			X			X
Golden Cheeked Warbler	E			X							X						
Least Tern	E		X	X	X		X	X	X			X				X	
Large Fruited Sand Verbena	E							X									
Navasota Ladies' Tresses	E							X									
Piping Plover	T	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X
Smalleye Shiner[c]	E													X			
Sharpnose Shiner[c]	E													X			
Whooping Crane	E	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X

Source: *2016 Region C Water Plan, Table 1.13.*

[11] http://ecos.fws.gov/tess_public/reports/species-by-current-range-county?fips=48439

What is the relationship of the species to water supply?

The above species are native inhabitants of the region's reservoirs. As such, they rely on the water supply and environmental conditions in the area. Allowing water to remain in the region's rivers and lakes will benefit those species that rely on those bodies as habitat. The largest direct impact for the City of Arlington's water savings will be to Lake Bridgeport, Eagle Mountain Lake and the Cedar Creek and Richland-Chambers Reservoirs, as these are the source of most raw water purchases from TRWD.

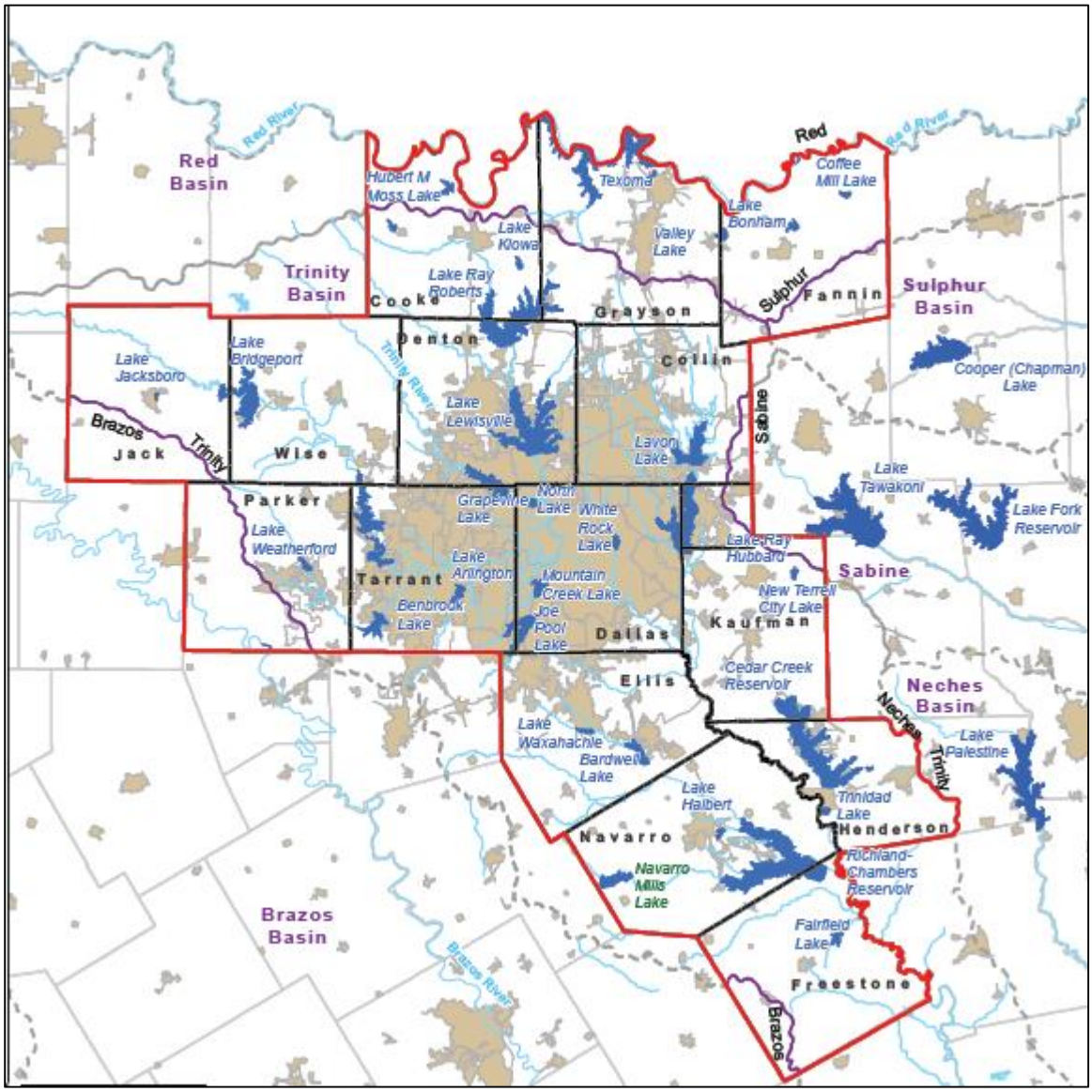


FIGURE 5 - REGION C RESERVOIRS

What is the extent to which the proposed project would reduce the likelihood of listing or would otherwise improve the status of the species?

The water conservation from the implementation of the proposed project will reduce the amount water required by Arlington to serve its customers. Consequently, the 6,267.71 AFY reduction will apply less pressure on the City's water supplier (TRWD) and increase the likelihood that they can improve water levels needed for a healthy ecosystem in the region.

For projects that will directly accelerate the recovery of threatened or endangered species or address designated critical habitats, please include the following elements:

How is the species adversely affected by a Reclamation project?

This Reclamation project will not adversely impact the species.

Is the species subject to a recovery plan or conservation plan under the ESA?

Yes – all of these endangered species in the "Endangered or Threatened Species identified by USFWS in Region C Counties" table represented previously are subject to a recovery or conservation plan under the ESA.

What is the extent to which the proposed project would reduce the likelihood of listing or would otherwise improve the status of the species?

The proposed project will result in over 6,267.71 AFY of water conservation which will reduce the amount of water the City of Arlington will demand from its water supplier, TRWD. Such a large quantity of water on an annual basis will likely supplement stream flows to the degree it will improve their habitat and status of the species.

Evaluation Criterion D: Water Marketing

The City of Arlington currently has a wholesale contract with the nearby city of Dalworthington Gardens, TX. It is also exploring contracts with nearby Bethesda Water Supply Corporation and the city of Kennedale, TX.

Briefly describe any water marketing elements included in the proposed project.

The water conserved in the project will result in more water available to the City of Dalworthington Gardens, Kennedale, and Bethesda Water Supply Corporation, all of which are in Northeast Texas. Additionally, there will be lessened demand on the City's water supplier, TRWD, who may market water that goes unused by the City of Arlington and these other suppliers.

Evaluation Criterion E: Other Contributions to Water Supply Sustainability

Subcriterion E.1: Addressing Adaptation Strategies in a WaterSMART Basin Study

Identify the specific WaterSMART Basin Study where this adaptation strategy was developed. Describe in detail the adaptation strategy that will be implemented through this WaterSMART Grant project, and how the proposed WaterSMART Grant project would help implement the adaptation strategy.

This Subcriterion does not apply to the proposed project.

Subcriterion E.2: Expediting Future On-Farm Irrigation Improvements
This Subcriterion does not apply to the proposed project.

Subcriterion E.3: Other Water Supply Sustainability Benefits
Will the project make water available to alleviate water supply shortages from drought?

The City of Arlington's water conservation program and water savings that will result from AMI implementation will have a direct effect on the reservoirs where raw water is purchased from TRWD. These sources include Lake Bridgeport, Eagle Mountain Lake and the Cedar Creek and Richland-Chambers Reservoirs. By reducing demand on those water resources, the City will alleviate the strain on critical supplies, especially during any future drought conditions.

Will the project directly address a heightened competition for finite water supplies and over-allocation (e.g., population growth)?

The reduced demand on those sources will help to keep the reservoirs, lakes, rivers and creeks at sustainable levels. The WaterSMART Project will position the City to address the future needs of a growing population more directly, since data from AMI infrastructure and smart meters are the foundation for proactive water management programs. This technology is becoming the standard for water suppliers to achieve better Customer-side Leak Identification, Improved Customer Water Management, Improved Accuracy of Meters, Theft Identification, and Utility-side Leak Identification. With an improved dataset showing near real-time status of the water distribution system and customer demand, superior water conservation and incentive programs can be put in place, which will achieve even greater returns of water savings in the future.

Describe how the water source that is the focus of this project (river, aquifer, or other source of supply) is impacted by climate variation.

As described in the Background Data, the state of Texas, while not currently experiencing drought conditions, has been susceptible to dramatic climate shifts in recent years. A comparison of drought area as a percent of the state over time illustrates how quickly, and extensively parts of the state can shift to extreme or exceptional drought conditions. Stage 1 of the Drought Contingency and Emergency Water Management Plan was enacted in June 2013 when water supplies dropped to 75% capacity. In January 2015, the water supplies dropped to an unprecedented 60.5%, dangerously advancing towards Stage 2 for the first time ever. The

TRWD service area was placed under Stage 1 watering restrictions in 2014-2015. Recently, more normal precipitation has helped ease drought conditions across the region.

Will the project help to address an issue that could potentially result in an interruption to the water supply if unresolved?

As evidenced by past water restrictions and mandates, there is legitimate fear over an interruption in water supply in Texas. The water conservation gained from the project's AMI meters and enhanced system monitoring will reduce water demand at the TRWD.

Will the project make additional water available for Indian tribes?

Although there currently are not Indian reservations within the City, Arlington has been of significance to many Indian tribes. In fact, the Republic of Texas signed its first ever Indian peace treaty here in 1843 at Bird's Fort with nine tribes including Cherokee, Delaware, Biloxi, Caddo, Keechie and Waco representatives.[12]

Will the project make water available for rural or economically disadvantaged communities?

Yes, the reduced water demand, improved information sharing, and water conservation programs will help make more water available for all customers, including those in rural and economically disadvantaged communities. Through this project, the City will be equipping customers with interval usage data and exhibiting that data in a web-based format. The project will have a positive impact on rural and disadvantaged populations as they will have access to interval water usage data and alerts to better manage their water bill.

Does the project promote and encourage collaboration among parties?

Yes, in fact, the City of Arlington is part of a joint research project with the Texas A&M University regarding household water-use efficiency using AMI. This partnership is further dependent upon engagement with 1,000+ residential customers, who are the early adopters for viewing web-based interval usage data and receive daily alerts and usage updates. As part of the study, web portal users' water data was collected and analyzed compared to a control group of similar customers who did not use the web portal. The before and after usage of both the control and treatment groups were tested to determine whether access to the portal had a significant impact on consumer habits. Preliminary results showed that there were statistically significant differences between the groups, and that portal users used on average 8% less water in the winter and 17% less water in the summer than non-users. [13]

[12] http://www.arlington-tx.gov/history/arlington-history/

[13] Understanding the Influence of Sociodemographics, Psychosocial and Behavioral Factors on Water Conservation in Texas II: Post-Intervention Analysis. Authors: Anna Faloon; Allen Berthold; Kelly Brumbelow; Kevin Wagner. For Submission to: ASCE WRPM. Not yet published as of 12/22/15.

In the future, the City will collaborate with all of its 366,000 customers and it moves through the full implementation of AMI. The technology will enable them to identify leaks and provide a greater understanding of personal water usage and how to reduce it. Research from this project will improve the understanding of the nexus between AMI technology and water efficiency from the perspectives of conservation, rate structures, leak detection, and infrastructure optimization. The results of the study will be used to determine the best communication methods to increase water use efficiency by using real world data. The findings will be published and act as a guide for numerous other water utilities across the region to use when implementing similar technologies.

Is there widespread support for the project?

Yes, the City has partnered with Texas A&M and the Texas Water Research Institute as mentioned above. The project is rooted in Texas Legislature, which charged A&M agencies to address growing water needs after the release of a 2012 state water plan. Researchers at Texas A&M identified the data available through AMI as a pivotal technology in increasing awareness of water consumption. The City of Arlington is the first City to be involved in the research project, but there are plans to expand to Round Rock and other cities in the state.

In 2014, the City obtained signed letters demonstrating the widespread collaboration with and support from surrounding utilities and government entities. Supporting entities include the TRWD, Region C of TWDB, the neighboring city of Fort Worth, and other utility service providers, such as Atmos Energy, Trinity River Water Authority. Many of these individuals are closely monitoring the progress of the AMI Project as it heads into its halfway point. All letters of support can be found in the attachments.

What is the significance of the collaboration/support?

The City of Arlington is a proud partner in a joint research project with the Texas A&M University, the state's research-intensive flagship university founding in 1876, and Texas Water Resources Institute, which was designated as the water resources institute for the state in 1964. Both institutions are highly regarded in water and natural resources science and management. The success of this project in the City of Arlington will lead to other cities in Texas following suit. All lessons learned from the project and conservation program interviews will be published in several extension guidebooks that are available to water suppliers.

Will the project help to prevent a water-related crisis or conflict?

This project will conserve water to reduce demand on current supplies and will help to prevent crisis or conflict over water.

Is there frequently tension or litigation over water in the basin?

There is not frequent tension over water in the basin.

Is the possibility of future water conservation improvements by other water users enhanced by completion of this project?

The City's customers will have increased awareness of their own water usage as a direct result of the WaterSMART Project. Additionally, the successful completion of this project would likely influence other utilities in the area to pursue this type of AMI technology. The findings from the collaboration between the City of Arlington, Texas A&M and the Texas Water Resources Institute will contain customer engagement strategies that will promote water conservation throughout the state and beyond.

Will the project increase awareness of water and/or energy conservation and efficiency efforts?

Yes, see response above.

Will the project serve as an example of water and/or energy conservation and efficiency within a community?

Yes, see response above.

Will the project increase the capability of future water conservation or energy efficiency efforts for use by others?

Yes, see response above.

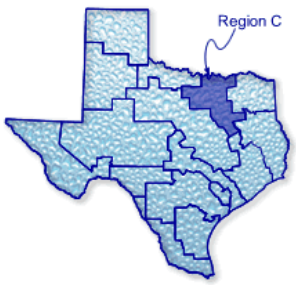
Does the project integrate water and energy components?

Yes, significant water and energy savings will be realized as a direct result of this project.

Evaluation Criterion F: Implementation and Results

Subcriterion No F.1: 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, Basin Study, drought contingency plan, or other planning efforts done to determine the priority of this project in relation to other potential projects.**
   Like the rest of the Dallas-Fort Worth region, the City of Arlington is part of the Region C Regional Water Planning Group (Region C). The Region C Water Planning Group (RCWPG) is one of 16 regional water planning groups established by the Texas Water Development Board to help develop and revise a comprehensive water plan for Texas through 2060. The Region C Water Plan includes conservation and reuse strategies to reduce



the average per capita municipal water demand in the region by nearly 30% over the next 20 years. The proposed project is one element of the City of Arlington's efforts to achieve that regional goal.

Please see here for the City of Arlington Drought Contingency & Emergency Water Management Plan published in May, 2014: http://www.arlington-tx.gov/water/wp-content/uploads/sites/3/2014/05/City-of-Arlington-2014-Drought-Contingency-and-Emergency-Water-Management-Plan-May2014.pdf

The City's Water Conservation Plan, also published in May 2014 can be found here: http://arlingtontx.granicus.com/MetaViewer.php?view_id=2&clip_id=1555&meta_id=183283

There are ongoing basin studies for major reservoirs including Lake Bridgeport, Eagle Mountain Lake and the Cedar Creek and Richland-Chambers Reservoirs. Please see below for several studies:

- Trinity River Basin (Lake Bridgeport and Richland-Chambers association):
  - https://tx.usgs.gov/projects/trin/pubs/pdf/awra.pdf
  - http://tx.usgs.gov/projects/trin/
  - http://www.twdb.texas.gov/publications/reports/numbered_reports/doc/R370_ReservoirSite.pdf
- Eagle Mountain Lake:
  - http://nctx-water.tamu.edu/media/5314/eagle%20mountain%20background.pdf
  - http://www.twdb.texas.gov/publications/reports/numbered_reports/doc/R370_ReservoirSite.pdf

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 Region C Water Plan includes conservation and reuse strategies to reduce the average per capita municipal water demand in the region by nearly 30% over the next 20 years. Please see above for other plans and goals related to the City of Arlington's water conservation initiatives. The proposed project is a critical element of the City of Arlington's efforts to achieve its water conservation goals.

Subcriterion No F.2: Readiness to Proceed

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

The City's WaterSMART project is expected to take 2 years from October 2016- September 2018, not including procurement timelines.

The City will issue bid documents to solicit support for:

1. A meter installation contractor for 3,000 meters & MIUs
2. Leak detection technology
3. Public awareness and outreach (water conservation education) support

The public awareness outreach will conducted in parallel with the smart meter installations. The city currently has its selected AMI vendor, Sensus, under contract for procurement of smart metes, therefore no additional solicitations are required.

TABLE 18. PROJECT SCHEDULE

Project Task	Duration	Start	End
Advertise and Bid for contract installation of 3,000 meters & MIUs	2 months	06/01/2016	08/01/2016
Contract for installation of 3,000 meters & MIUs	8 months	10/01/2016	07/01/2017
In-house installation of 18,000 meters and MIUs using in house labor	24 months	10/01/2016	09/30/2018
Advertise for public awareness and education support services	2 months	06/01/2016	08/01/2016
Implement public awareness and education campaign	24 months	10/01/2016	09/30/2018
Advertise and Bid for leak detection technologies	2 months	06/01/2016	08/01/2016
Install leak detection devices	8 months	10/01/2016	07/01/2017

Subcriterion No F.3: Performance Measures

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, marketed, or better managed, or energy saved).

Prior to the deployment phase, The City of Arlington will refine and institute a number of Key performance Indicators (KPI's) designed to measure the success of the program. It is anticipated that these KPI's will include but are not limited to:

- Water Loss in gallons, monthly
- Number of Line Breaks/month
- Average Gallons lost/line break
- Number of Leaks detected/month
- Number of Leaks repaired/month

- kWh used monthly for pumping
- Reduced vehicle miles for meter reading

The City of Arlington currently tracks the amount of water pumped and distributed as well as the amount billed on an annual basis. Prior to the project, the City will create a baseline of historical water distribution and billed data to compare against conservation gains from the project. The City will monitor the same metrics on a regular basis as well as meter population changes, main line breaks, gallons pumped and other indicators to measure the performance of the project.

The City of Arlington will also provide a historical baseline for electricity consumption for water treatment and pumping to compare future consumption numbers to verify energy efficiency from the project. Additionally, energy efficiency for fuel reductions will also experience the same comparison of baseline and future data.

Subcriterion No F.4: Reasonableness of Costs

Please include information related to the total project cost, annual acre-feet conserved, energy capacity, or other project benefits and the expected life of the improvement(s).

In using $300,000 in Bureau of Reclamation WaterSMART funding with $3,812,500 in City funds, the City of Arlington anticipates that it will conserve **10.26%** of its water supply, or **6,267.71 acre feet a year** and will reduce electricity consumption by **6,494,395.59 kWh** through reduced water pumping and treatment. The City will also **reduce greenhouse gas emissions by 12.63 metric tons annually** due to decreased vehicle miles required for metering activities.

For all projects involving physical improvements, specify the expected life of the improvement in number of years and provide support for the expectation (e.g., manufacturer's guarantee, industry accepted life-expectancy, description of corrosion mitigation for ferrous pipe and fittings, etc.).

The total life expectancy of the AMI meters is 20 years based on industry accepted data. Leak detection sensors have a battery life of approximately 5 years, but the batteries can be replaced in most cases. All AMI and MDM systems are expected to be hosted by the vendor and supported for 5 years, with an option to renew.

Evaluation Criterion G: Additional Non-Federal Funding

The cost of the WaterSMART Project is $4,112,500. The City of Arlington will spend $3,812,500 in non-federal funding for the project. The City of Arlington is requesting $300,000 of federal funding support towards the project cost. The percentage of non-federal funding will be:

$$\frac{\$300,000}{\$4,112,500} = 7.29\%$$

Evaluation Criterion H: Connection to Reclamation Project Activities

1) How is the proposed project connected to Reclamation project activities?

The proposed project is not connected to an existing Reclamation project.

Performance Measures

While the City of Arlington anticipates many benefits as a result of the WaterSMART Project, it is important to identify measures that will quantify the true results. Determining this at the start will create historical context to assess the City's efforts as a trend over time. The first metric that the City will closely monitor to assess the project is the annual system loss %, which is submitted to TWDB each year. The three year average from 2012-2014 for System Loss % is 11%, while the 2014 figure was slightly higher at 12.75%. Any improvements in customer- or distribution-side leak detection, meter accuracy and theft identification will result in a decreased loss percentage.

$$System\ Loss\ \% = \frac{(water\ produced)\ -\ (water\ consumed)}{(water\ produced)}$$

$$\mathbf{2014\ System\ Loss}\ \% = \frac{(19.910\ MG)\ -\ (17.372\ MG)}{(19.910\ MG)} \cdot 100 = \mathbf{12.75}\%$$

Gallons per capita day (GPCD), represented in the formula below and provided in the Region C 2016 Plan, is the basis for the City in tracking efficiency of water use. This metric provides an estimate of municipal per capita water use that includes commercial, residential, some light industrial, and institutional water users and in some cases, municipal golf course irrigation. The City intends to utilize this calculation in assessing water conservation trends with improved Customer-side management.

$$GPCD = \frac{(water\ diverted\ and/or\ purchased)\ -\ (wholesale\ sales\ +\ industrial\ sales\ +\ power\ sales)}{(Population\ of\ service\ area)\ \cdot\ (365\ days)}$$

Additional detailed performance measures can be found in section Subcriterion No. F.3: Performance Measures.

Environmental and Cultural Resources Compliance

Will the 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 impact the surrounding environment as the work will exclusively focus on current utility property. The utility property will consist of meters and other utility assets in the field which are not part of the surrounding open spaces or animal habitats.

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?

There are four federally listed species that may be found in the project area. These are the piping plover, interior least tern, golden-cheeked Warbler, and Black-capped Vireo. Since work will be limited to existing utility facilities and public rights-of-way, none of these species will be affected by the project.

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

This project will not have any impact on wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as "waters of the United States". The project is confined to work within existing meter boxes and utility facilities and will not involve new construction in areas of jurisdictional waters or wetlands.

When was the water delivery system constructed?

The Arlington water system began operations in 1894.

Will the 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 project will not result in any modifications to 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 six buildings, structures, or features in the City of Arlington that area listed in the National Register of Historic Places. The work involved in replacing the existing manually-read water meter will not affect any historic structures.

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

There is one archeological site in the City of Arlington that area listed in the National Register of Historic Places. Work on the project will be confined to existing utility infrastructure will involve replacing the existing manually-read water meters. The proposed project will not affect any archeological sites.

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

No, the project will not have adverse effects on low income or minority populations. It is expected that the availability of AMI data will have a positive effect on low income and minority populations by reducing costs associated with water losses. They will also have access to interval water usage data and alerts to better manage their water bill.

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

This project will not limit access to and ceremonial use of Indian sacred sites or impact tribal lands.

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

This project will not contribute to the introduction, continued existence, or spread of noxious weeks or non-native invasive species known to occur in the area.

Required Permits or Approvals

There are no requirements for permits or approvals by any federal, state, regional, or local government body associated with the project. To the extent that any activities involved in the Arlington project require some perfunctory local approvals, the city is confident that those can be obtained expeditiously.

Official Resolution

Please see attachments for the City of Arlington's Official Resolution.

Trinity River Authority of Texas

Northern Region Office

0202/0715.017

December 26, 2014

The Honorable Estevan López, Commissioner
U.S. Bureau of Reclamation
1849 C Street NW
Washington DC 20240-0001

Re: Support for the City of Arlington, Texas: Installation of "Smart Meters" Program

Dear Commissioner López:

The Trinity River Authority of Texas (the Authority) is a regional wholesale wastewater provider in the Dallas-Fort Worth Metroplex. Our Central Regional Wastewater System serves twenty customer cities and the Dallas-Fort Worth International Airport with a treatment capacity at our plant of 162 million gallons per day. This service area represents approximately 1.4 million residents. The City of Arlington is our largest customer in this system, contributing approximately 32% of the annual flow. The Authority is aware that the City of Arlington is submitting a grant application to the WaterSMART program, and the Authority strongly supports this application.

The City of Arlington intends to replace its old and outdated water meters throughout the community with Smart Water Meters that will help the city detect leaks, conserve water, reduce energy use and help save customers money.

Dallas-Fort Worth has been one of the fastest growing major metropolitan areas in the nation for decades. As such, concerns about the availability of a safe water supply, enhanced by the current drought, have grown with the region. Concerted efforts have been underway since the early 1980s at the local, regional, and state levels to conserve limited water supplies. The City of Arlington's proposed Smart Water Meter initiative complements these efforts using technology that has been demonstrated to improve water and energy efficiency. Additionally, any effective water conservation program by the City of Arlington has proven to reduce effluent flows which consequently will, in turn, reduce the Authority's operation and maintenance costs for wastewater treatment, as well yield cost avoidance or delay for capital expenditures related to increased capacity needs.

Please note that our organization is in full support of the City of Arlington Smart Water Meter Project since the project, upon implementation, will effectively conserve water. This is an ideal opportunity for the Bureau of Reclamation to partner with Arlington and other public, private and non-profit organizations to conserve water and avert a drought crisis in the Dallas metropolitan region, reduce energy use and greenhouse gas emissions, and provide water customers with

P.O. Box 240
Arlington, Texas 76004-0240
(817) 493-5100

easy-to-use, accessible information that can help them make intelligent choices that save resources and money.

Your favorable consideration for Bureau of Reclamation grant assistance is appreciated.

Sincerely,

Fiona M Allen

FIONA M ALLEN, P.E.
Regional Manager
Northern Region

c: Darryl Westbrook, WaterSMART Program Coordinator, City of Arlington, Texas

December 29, 2014

The Honorable Estevan López, Commissioner
U.S. Bureau of Reclamation
1849 C Street NW
Washington DC 20240-0001

Re: Support for the City of Arlington, Texas: Installation of "Smart Meters" Program

Dear Commissioner López:

As a current WaterSMART grant recipient, Tarrant Regional Water District (TRWD) supports the Bureau of Reclamation's WaterSMART Initiatives and strongly supports the City of Arlington, Texas WaterSMART grant application. TRWD is the sole wholesale provider of raw water to the City of Arlington, Texas and strongly encourages the Bureau of Reclamation to consider awarding a grant to Arlington.

Arlington intends to use the WaterSMART grant funding to replace old and outdated water meters with smart water meters for a portion of its system. These smart meters will help Arlington to detect water leaks sooner and hence conserve water, reduce energy use and help their customers save money.

Dallas-Fort Worth has been one of the fastest growing major metropolitan areas in the nation for decades. As such, concerns about water supply have grown with the region. Concerted efforts have been underway since the early 1980s at the local, regional and state levels to conserve limited water supplies. In addition, due to drought conditions which have persisted in the Dallas/Fort Worth region since 2011, TRWD implemented Stage 1 of its Drought Contingency Plan most recently on June 3, 2013. TRWD's and Arlington's goal for implementation of Stage 1 is a five percent (5%) reduction in water usage. The City of Arlington's proposed smart water meter initiative complements these efforts by using an innovative technology that has been demonstrated to improve water and energy efficiency.

Once again, TRWD encourages the Bureau of Reclamation's favorable consideration of Arlington's application for a WaterSMART grant since the project, upon implementation, will effectively conserve water. This is a wonderful opportunity for the Bureau of Reclamation to partner with Arlington and other public, private and non-profit organizations to conserve water and avert a drought crisis in the Dallas/Fort Worth region, reduce energy use and greenhouse gas emissions, and provide water customers with easy-to-use, accessible information that supports intelligent decisions that save resources and money. Thank you for your consideration of Arlington's grant application.

Sincerely,

Jim Oliver
General Manager

P.O. Box 4508, Fort Worth, Texas 76164-0508 800 E. Northside Drive Fort Worth, Texas 76102-1016
Office: 817-335-2491 Fax: 817-877-5137 *www.trwd.com*

ARLINGTON TEXAS
ARLINGTON CHAMBER of COMMERCE®

January 5, 2015

The Honorable Estevan López, Commissioner
U.S. Bureau of Reclamation
1849 C Street NW
Washington DC 20240-0001

Re: Support for the City of Arlington, Texas: Installation of "Smart Meters" Program

Dear Commissioner López:

I write on behalf of the Arlington Chamber of Commerce to convey our support for the WaterSMART grant application of the City of Arlington, Texas. Arlington intends to replace old, outdated meters throughout the community with smart water meters that will help the city detect leaks, conserve water, and reduce energy use and help save customers money.

Dallas-Fort Worth has been one of the fastest growing major metropolitan areas in the nation for decades. As such, concerns about the availability of a safe water supply have grown with the region. Concerted efforts have been underway since the early 1980s at the local, regional and state levels to conserve limited water supplies. Arlington's proposed smart water meter initiative complements these efforts using an innovative technology that has been demonstrated to improve water and energy efficiency.

The Arlington Chamber supports the city in applying for this smart water meter project and cares about this WaterSMART funding because it will significantly enhance the small businesses and residents to manage their water usage and assist the City to conserve water as needed. We are strongly committed to supporting Arlington in its various green initiatives, which this project is a part of.

This is a wonderful opportunity for the Bureau of Reclamation to partner with Arlington and other public, private and non-profit organizations to conserve water and avert a drought crisis in the Dallas metropolitan region, reduce energy use and greenhouse gas emissions, and provide water customers with easy-to-use, accessible information that can help them make intelligent choices that save resources and money. Thank you for doing all that you can do to ensure that this project obtains Bureau of Reclamation grant assistance.

Sincerely,

Wes Jurey, President/CEO
Arlington Chamber of Commerce

505 East Border ★ Arlington, Texas ★ 76010
817.275.2613 ★ 817.265.1911 (metro) ★ 817.261.7389 (fax)
www.arlingtontx.com

North Central Texas Council Of Governments

December 30, 2014

The Honorable Estevan López, Commissioner
U.S. Bureau of Reclamation
1849 C Street NW
Washington DC 20240-0001

Re: Support for the City of Arlington, Texas: Installation of "Smart Meters" Program

Dear Commissioner López:

The North Central Texas Council of Governments (NCTCOG) would like to convey our strong support for the WaterSMART grant application of Arlington, Texas. Arlington intends to replace old, outdated meters throughout the community with smart water meters that will help the city detect leaks, conserve water, reduce energy use, and help save customers money.

Dallas-Fort Worth has been one of the fastest growing major metropolitan areas in the nation for decades. As such, concerns about the availability of a safe water supply have grown with the region. Concerted efforts have been underway since the early 1980s at the local, regional, and state levels to conserve limited water supplies. Arlington's proposed smart water meter initiative complements these efforts using an innovative technology that has been demonstrated to improve water and energy efficiency.

NCTCOG is the designated water quality management planning agency for North Central Texas, and we have a long history of cooperative planning for water resources. A primary goal for our agency is the assistance to our member governments and special districts in planning for adequate water-related services into the future. NCTCOG views the WaterSMART funding as an important catalyst for water conservation/energy reduction efforts that local governments can use to effect meaningful and beneficial infrastructure improvements. We strongly support all approaches that cities and water entities can take advantage of to enhance water resource use.

The WaterSMART grant funds provide a unique opportunity for the Bureau of Reclamation to partner with Arlington and other public, private, and non-profit organizations to conserve water and avert a drought crisis in the Dallas metropolitan area. This project would provide water customers with easy-to-use, accessible information that can help them make intelligent choices that save resources and money. We appreciate your earnest consideration of this Arlington project, which would provide Bureau of Reclamation grant assistance that will enable the city to implement a valuable water and energy conservation program.

Sincerely,

Edith Marvin, P.E.
Director
Department of Environment and Development

616 Six Flags Drive, Centerpoint Two
P. O. Box 5888, Arlington, Texas 76005-5888
(817) 640-3300 FAX: 817-640-7806 ♻ recycled paper
www.nctcog.org

FORT WORTH

Date 01/02/2015

The Honorable Estevan López, Commissioner
U.S. Bureau of Reclamation
1849 C Street NW
Washington, DC 20240-0001

Re: Support for the City of Arlington, Texas: Installation of "Smart Meters" Program

Dear Commissioner López:

The City of Fort Worth is aware of the Bureau of Reclamation's WaterSMART Grant Initiative and strongly supports the City of Arlington, Texas WaterSMART grant application.

Arlington intends to use the WaterSMART grant funding to replace old and outdated water meters with smart water meters for a portion of its system. These smart meters will help Arlington to detect water leaks sooner and hence conserve water, reduce energy use and help their customers save money.

Dallas-Fort Worth has been one of the fastest growing major metropolitan areas in the nation for decades. As such, concerns about the availability of an adequate and safe water supply have grown with the region. Concerted efforts have been underway since the early 1980s at the local, regional and state levels to conserve limited water supplies.

Once again, the City of Fort Worth encourages the Bureau of Reclamation's approval of Arlington's application for a WaterSMART grant since the project, upon implementation, will effectively conserve water. This is a wonderful opportunity for the Bureau of Reclamation to partner with Arlington and other public, private and non-profit organizations to conserve water and avert a drought crisis in the Dallas metropolitan region, reduce energy use and greenhouse gas emissions, and provide water customers with easy-to-use, accessible information that can help them make intelligent choices that save resources and money. Thanks for your consideration of Arlington's grant application.

Sincerely,

Andrew T. Cronberg, P.E.
Interim Director, Water Department

Chris Felan
Vice President
Rates & Regulatory Affairs

December 29, 2014

The Honorable Estevan López, Commissioner
U.S. Bureau of Reclamation
1849 C Street NW
Washington DC 20240-0001

Re: Support for the City of Arlington, Texas: Installation of "Smart Meters" Program

Dear Commissioner López:

On behalf of Atmos Energy, we want to convey our strong support for the WaterSMART grant application of Arlington, Texas. Arlington intends to replace old, outdated meters throughout the community with smart water meters that will help the city detect leaks, conserve water, and reduce energy use and help save customers money.

Dallas-Fort Worth has been one of the fastest growing major metropolitan areas in the nation for decades. As such, concerns about the availability of a safe water supply have grown with the region. Concerted efforts have been underway since the early 1980s at the local, regional and state levels to conserve limited water supplies. Arlington's proposed smart water meter initiative complements these efforts using an innovative technology that has been demonstrated to improve water and energy efficiency.

My organization is involved in Arlington as the sole gas utility provider for the City, and we support the City's green initiatives. The City has made a conscious effort to initiate green practices and this project further advances those efforts.

This is a wonderful opportunity for the Bureau of Reclamation to partner with Arlington and other public, private and non-profit organizations to conserve water and avert a drought crisis in the Dallas metropolitan region. Thank you for doing all that you can do to ensure that this project obtains Bureau of Reclamation grant assistance.

Sincerely,

Chris Felan
Vice President, Rates and Regulatory Affairs

Atmos Energy Corporation
5420 LBJ Freeway, Suite 1800, Dallas, TX 75240
P 214-206-2568 **F** 214-206-2126 christopher.felan@atmosenergy.com

Mark Bringhurst
Director

Fort Worth Region
Customer Operations
P.O. Box 970
115 W. 7th Street, Suite 405
Fort Worth, Texas 76101-0970

817-215-6464 Office
817-215-6360 Fax

December 26, 2014

The Honorable Estevan López, Commissioner
U.S. Bureau of Reclamation
1849 C Street NW
Washington DC 20240-0001

Re: Support for the City of Arlington, Texas: Installation of "Smart Meters" Program

Dear Commissioner López:

Please accept this communication on behalf of the City of Arlington to convey our strong support for the WaterSMART grant application of the City of Arlington. Arlington intends to replace old, outdated meters throughout the community with smart water meters that will help the city detect leaks, conserve water, and reduce energy use and help save customers money.

Dallas-Fort Worth has been one of the fastest growing major metropolitan areas in the nation for decades. As such, concerns about the availability of a safe water supply have grown with the region. Concerted efforts have been underway since the early 1980s at the local, regional and state levels to conserve limited water supplies. Arlington's proposed smart water meter initiative complements these efforts using an innovative technology that has been demonstrated to improve water and energy efficiency.

Oncor is an Arlington community partner who is interested in this WaterSMART funding because we are strongly committed to energy efficiency and green initiatives that are effective benefits to the community.

This is a wonderful opportunity for the Bureau of Reclamation to partner with Arlington and other public, private and non-profit organizations to conserve water and avert a drought crisis in the Dallas metropolitan region, reduce energy use and greenhouse gas emissions, and provide water customers with easy-to-use, accessible information that can help them make intelligent choices that save resources and money. Thank you for doing all that you can do to ensure that this project obtains Bureau of Reclamation grant assistance.

Sincerely,

c: Darryl Westbrook, WaterSMART Program Coordinator

Resolution No. 16-003

A resolution authorizing the submission of a grant application to the U.S. Department of the Interior, Bureau of Reclamation, for a WaterSMART grant in the amount of $300,000, and authorizing the execution of documents relative to the submission and later acceptance of such grant

WHEREAS, the U.S. Department of the Interior, Bureau of Reclamation, is accepting grant applications from organizations with water authority to leverage their money and resources by cost sharing on projects that seek to conserve and use water more efficiently, increase the use of renewable energy, and improve energy and water efficiency; and

WHEREAS, the City Council of the City of Arlington, Texas finds it in the best interest of the citizens of Arlington to apply for funding on a cost-share basis; and

WHEREAS, upon the City receiving award of the grant, the City intends to allocate funds necessary to meet any and all funding requirements for grant; and

WHEREAS, the City Council of the City of Arlington, Texas, designates the City Manager as the grantee's authorized official; NOW THEREFORE

BE IT RESOLVED THAT THE CITY COUNCIL OF THE CITY OF ARLINGTON, TEXAS:

I.

That all of the recitals contained in the preamble of this resolution are found to be true and are adopted as findings of fact by this governing body and as part of its official record.

II.

That the City Manager or his designee is hereby authorized to submit a grant application to the Department of the Interior, Bureau of Reclamation, for funding assistance in the amount of $300,000, for a WaterSMART grant. The WaterSMART grant funding opportunity requires a 50% match. The matching funds for this project are included in the approved Capital Plan for FY 2016.

III.

Further, the City Manager or his designee is hereby authorized to administer to all matters relating to such grant and to execute all necessary applications, assurances, certifications and other documents relative to the acceptance of such grant.

PRESENTED AND PASSED on this the 12th day of January, 2016, by a vote of 8 ayes and 0 nays at a regular meeting of the City Council of the City of Arlington, Texas.

W. JEFF WILLIAMS, Mayor

ATTEST:

MARY W. SUPINO, City Secretary

APPROVED AS TO FORM:
TERIS SOLIS, City Attorney

BY Eldia Martin