City of
SANTA BARBARA

CITY OF SANTA BARBARA PUBLIC WORKS DEPARTMENT
ADVANCED METERING INFRASTRUCTURE (AMI) PROJECT – PHASE 2

Prepared for:
U.S. Department of the Interior - Bureau of Reclamation
GRANT APPLICATION for FOA NO. BOR-DO-20-F001

WaterSMART: Water and Energy Efficiency Grants for FY 2020
Submittal Deadline: October 3, 2019

Submitted To:
Bureau of Reclamation
Financial Assistance Support
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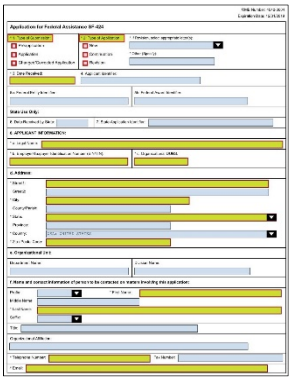
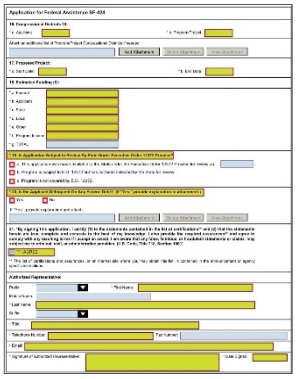
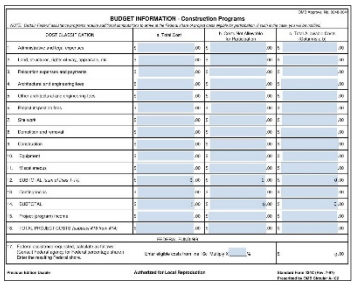
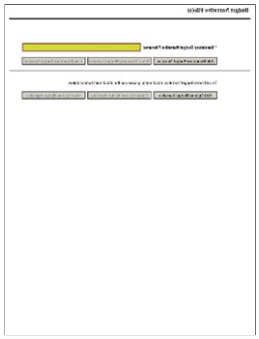
I. Submission of Federal Forms online at Grants.com (D.2.2.1)

A. Application for Federal Assistance (SF-424)

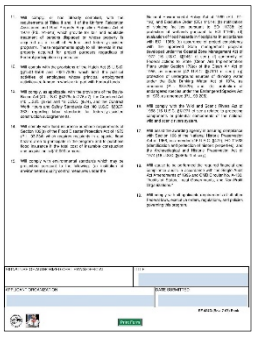




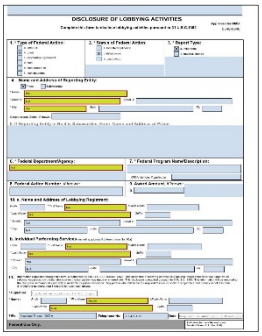
B. Budget Information for Construction Programs (SF-424C)

C. Assurances for Construction Programs (SF-424D)

D. Disclosure of Lobbying Activities (SF-LLL)



II. Title Page (D.2.2.2)

Application Filing Name:
CITY OF SANTA BARBARA PUBLIC WORKS DEPARTMENT
ADVANCED METERING INFRASTRUCTURE (AMI) PROJECT – PHASE 2

Applicant: CITY OF SANTA BARBARA, CALIFORNIA
Project Type: ADVANCED METERING INFRASTRUCTURE (AMI) PROJECT
Project Scope: CITY-WIDE AMI IMPLEMENTATION PROGRAM
Grant: FOA NO. BOR-DO-20-F001

WaterSMART: Water and Energy Efficiency Grants for FY 2020
Submission Due Date: October 3, 2019

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III. Table of Contents (D.2.2.3)

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IV. Technical Proposal and Evaluation Criteria - 50 Page Max (D.2.2.4)

1. Executive Summary

a) Submittal Due Date: October 3, 2019

b) Applicant: City of Santa Barbara
Department of Public Works
Rebecca Bjork, Director of Public Works
630 Garden Street
Santa Barbara, CA 93101
Email: RBjork@SantaBarbaraCA.gov
Tel 805.564.5387

c) Funding Group II

d) Grant Requested: $1,500,000

e) Project Duration: 26 months (preliminary estimate)

f) Est. Completion: December 2022 (preliminary estimate)

g) Project Location: City of Santa Barbara
County of Santa Barbara
State of California

h) Federal Facilities: Project is not located on a Federal facility

i) Project Summary:

The City of Santa Barbara is currently in the process of converting all City water meters to be compatible with Advanced Metering Infrastructure (AMI) technology. This modernization project will provide multiple benefits to the City and its water customers, while also contributing to the attainment of Department of Interior goals related to FOA BOR-DO-20-F001, including:

- Allow customers to accurately monitor water use via City website portal
- Reduce water loss through enhanced leak detection capabilities
- Reduce water demand by enhanced conservation and leak notification
- Reduce energy use / operating costs by reduction of water treatment and wastewater treatment
- Provide near real-time accurate water use information
- Reduce carbon emissions by the use of remote/automated meter reads
- Curb overall water demand by increased trending data management
- Improve ability to conduct water distribution system preventative maintenance
- Improve disadvantaged customer's access to data that may reduce their water costs

The City has already replaced nearly 27,000 meters with AMI compatible meters as part of the conversion project, which represents nearly the entire City. The City is seeking a grant from the U.S. Department of the Interior, Bureau of Reclamation, to complete Phase 2 of the AMI implementation, including:

- Procurement and installation of communication equipment
- Development and deployment of the data management system
- Development and deployment of the customer website portal

2. Background Data

a) Santa Barbara Water System History: On April 9, 1850, Santa Barbara incorporated as a city, and formed an official town council. This occurred six months prior to California becoming the 31st State in the Union. Prior to the City forming, and ever since that time, providing reliable drinking water for the citizens of Santa Barbara has been a complex and expensive engineering endeavor of paramount importance for City leaders. The City has been severely affected by multiple droughts throughout its history, including the current historic 7-year drought in Central and Southern California. The following are the major recorded Santa Barbara area drought events:

i. 1947 to 1951
ii. 1987 to 1991
iii. 2012 to 2019

In response to the current drought, the City invested approximately $70M between 2014 and 2018 on a fast-track design-build-operate project to reactivate the City's Charles E. Meyer Desalination Plant. The plant was originally fast-track constructed in 1991, in response to the City's previous drought.

b) Current City Raw Water Sources: The City of Santa Barbara provides water service to most properties within the City limits, as well as several unincorporated areas. The service area is approximately 20 square miles. The City's water supply sources for the potable water system include surface water from Gibraltar Reservoir, Devils Canyon Creek, and the Santa Ynez River via Lake Cachuma (a Bureau of Reclamation facility); groundwater from City production wells and Mission Tunnel infiltration; State Water Project water; and the Desalination Plant. A separate recycled water system supplies treated wastewater, primarily for irrigation, to offset the need to use potable water. In addition, water conservation is a key component of water supply management. Conservation has a key role in offsetting the need to develop new water supplies and reducing the demand on existing water supplies.

c) Long-Term Water Supply: The City's current Long-Term Water Supply Plan (LTWSP) was adopted by City Council on June 14, 2011 (See Attachment 1).

d) Current Water Production by Source: The following are the City's current raw water sources and the water production in acre-feet (AF) from each source for the period July 1, 2018 to June 30, 2019:

i.	Cachuma Lake	578 AF
ii.	Gibraltar Reservoir	2,125 AF
iii.	Devils Canyon	193 AF
iv.	Mission Tunnel	970 AF
v.	Groundwater	405 AF
vi.	Desalination Plant	2,735 AF
vii.	State Water	2,511 AF
viii.	Net Other Production*	(324) AF
ix.	*Total Potable Production*	*9,193 AF*
x.	Recycled Water	737 AF
xi.	Total System Production	9,930 AF

*Note: Net Other Production includes water passed through the City's distribution system to neighboring water agencies; therefore, it must be deducted from the City's total production.

e) Description of Distribution System:

i. The function of the City's water distribution system is to store and distribute treated water to water customers. Due to the Santa Barbara geography, the City's distribution system is separated into 17 distinct pressure zones. These pressure zones are delineated by ground elevations within the area. Each zone contains a pipe network that supplies a minimum and maximum pressure to the service area. Major components of the system include reservoirs, pumping stations, pressure-reducing stations, pipelines, valves, fire hydrants and meters.

ii. See Attachment 2, City of Santa Barbara Water Distribution Map dated June 2018 for a complete system overview.

iii. The Water Distribution System is comprised of the following piping:

Table 1 – City Water Mains

PIPE MATERIAL	SIZE (IN)	LENGTH (MILES)	INSTALLATION TIMEFRAME	% OF TOTAL
Cast Iron	4" - 20 "	168.63	1886 - 1967	57%
Steel	1" - 36"	26.22	1908 - 1983	9%
Copper	1" - 2"	2.7	1945 - 1995	1%
AC	4" - 12"	8.47	1960 - 1987	3%
Ductile Iron	4" - 36"	41.5	1963 - 1997	14%
PVC	4" - 16"	50.49	1972 - 1997	17%
TOTALS		298.01		100%

iv. As of the date of this Grant application, the City has 27,246 domestic water service connections with meters, including irrigation services. The following table indicates the current number of City metered accounts:

Table 2 – City Water Meters

METER TYPE	# OF ACCTS
Single Family Residential - City	15,829
Single Family Residential - County	1,174
SUBTOTAL:	**17,003**
Multi-Family Residential – City (1-4)	5,376
Multi-Family Residential – County (1-4)	66
Multi-Family Residential – City (5+)	1,093
Multi-Family Residential – County (5+)	106
SUBTOTAL:	**6,641**
Commercial - City	2,647
Commercial - County	47
SUBTOTAL:	**2,694**
Industrial - City	54
SUBTOTAL:	**54**
Irrigation-Potable Residential - City	491
Irrigation-Potable Residential - County	12
Irrigation-Potable Agriculture - City	53
Irrigation-Potable Agriculture - County	10
Irrigation-Potable Commercial - City	130
Irrigation-Potable Commercial - County	4
Irrigation-Potable Recreation - City	149
Irrigation-Potable Recreation - County	4
Irrigation-Potable Recreation - Bird Refuge	1
SUBTOTAL:	**854**
POTABLE TOTAL:	**27,246**

v. The average annual water demand for the last five years (January 2014 – December 2018) was 10,310 AF (51,549 AF / 5 years), which included an average of 9,556 AFY of water potable production and 753 AFY of

recycled water. Note that City water customers continue to conserve water at an average rate of 30% less than 2013 pre-drought demands in response to the most recent multi-year drought. The City does expect water demand to rebound over time, although demands are not expected to rebound fully to pre-drought levels. Current projections indicate the rebound may take 7 years and increase demands to a level of 10% less than pre-drought demands.

While the City does not expect any specific shortfalls in demand, it has worked hard to develop a very diverse water supply portfolio in order to enhance its ability to respond to water supply shortages, such as those that occur during drought. Droughts are expected to occur more frequently and last longer in the region as a result of climate change. In addition, some of the City's surface water supplies may be reduced as efforts continue in relation to the water supply agreement and biological opinion for Lake Cachuma.

Table 3 – Water Production (Past 5 Years)

DESCRIPTION	2014	2015	2016	2017	2018	*2019*
Total Potable Production (AF):	11,658	9,512	8,863	8,308	9,443	*9,666*
Estimated Service Area Population:	92,756	93,532	93,881	94,231	94,580	*93,532*
Gross Per Capita Consumption (gpd)	112	91	84	79	89	*92*
Net Recycled Water Production (AF):	714	675	708	855	813	*737*
System Production Pot. + Recycled (AF):	12,372	10,187	9,571	9,163	10,256	*10,400*

f) Past working relationship between the City of Santa Barbara and Department of the Interior, Bureau of Reclamation:

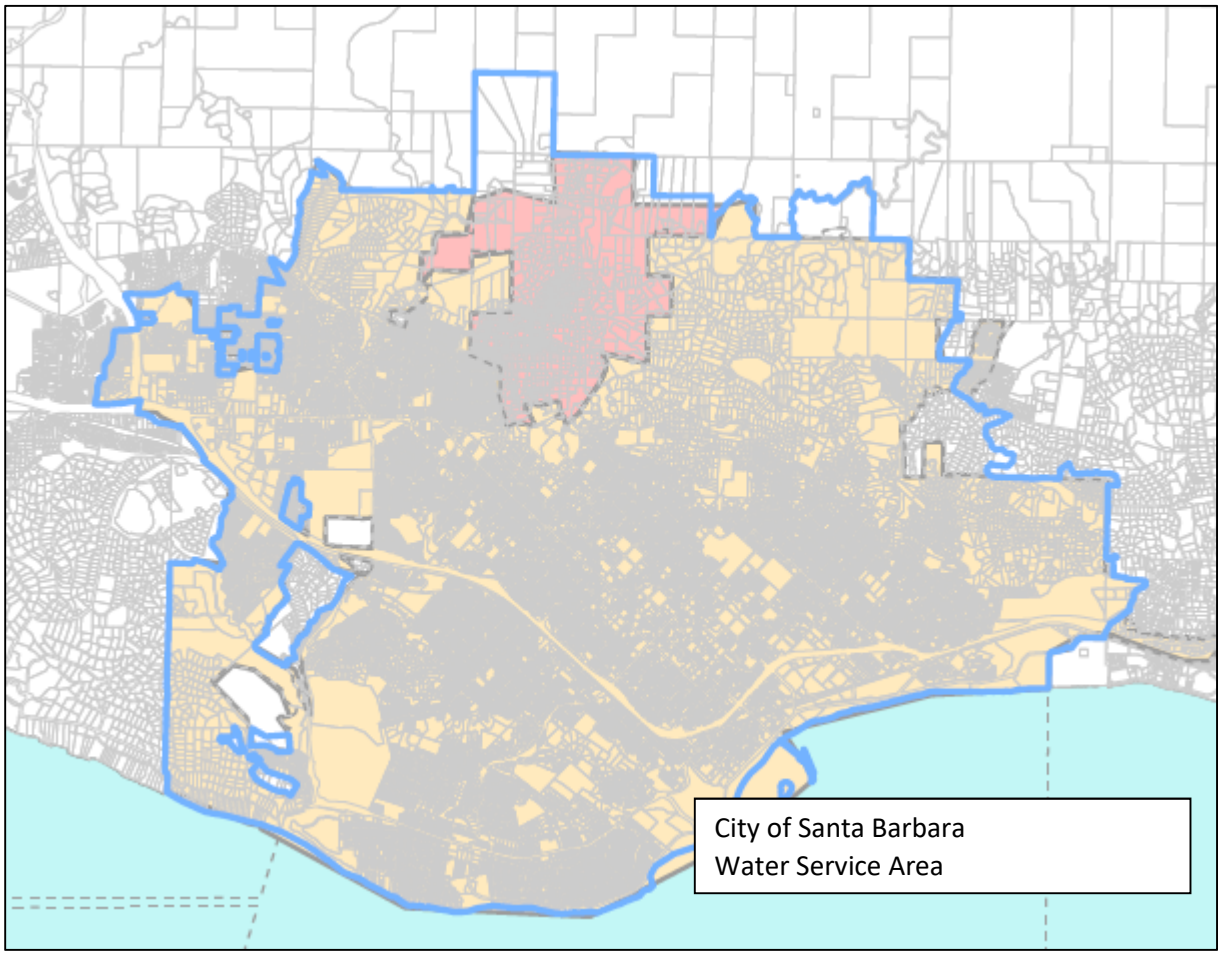
The City of Santa Barbara is a member agency of the Cachuma Operation and Maintenance Board (COMB). COMB is a California Joint Powers Agency (JPA) formed pursuant to an agreement with the Bureau of Reclamation.

COMB's main regional water storage facility is Cachuma Reservoir, formed by Bradbury Dam, which is owned and operated by the U.S. Bureau of Reclamation. Similarly, Lauro Dam and Reservoir, located adjacent to the City's William B. Cater Water Treatment Plant, are also owned by the Bureau of Reclamation, and operated by COMB. Among other duties, COMB is responsible for diversion of water from Cachuma Reservoir for the City of Santa Barbara and the other regional member agencies.

This on going working relationship between the City of Santa Barbara and the Bureau of Reclamation started as part of COMB's creation in 1956.

3. Project Location
   a) The proposed project area is located within the City of Santa Barbara, County of Santa Barbara, State of California, located approximately 100 miles west and north of Downtown Los Angeles.
   b) See Figure 1 below showing the City's water service area

Figure 1 – City Water Service Area



4. Technical Project Description
   a) Project Overview: Implementation of top to bottom AMI system conversion for all City of Santa Barbara potable water users including AMI compatible water meters, AMI end points, communication equipment, software, data management system, and customer website portal for data sharing. Water meters have already been converted to AMI compatible meters (under a separate scope from this Grant application).

b) Current Status Overview:

1. Water Meter Replacements (Phase 1 using City funds):
    a. Phase 1 (complete) – Replaced just under 27,000 meters
    b. Phase 1 (pending) – Replace 1,200 remaining meters (approx)
    c. Material costs-to-date incurred by City
    d. Material costs remaining to also be incurred entirely by City
    e. All past and future meter replacement labor provided by City
    f. This Grant application does not cover any of the above costs
2. Contract Procurements (Phase 2 using partial Grant funding):
    a. AMI end point transmitters and meter vault lids
    b. Fixed network data collectors, repeaters, LAN/WAN equipment
    c. AMI Headend Control System, Software, and Data Management System
3. Contract Field Work (Phase 2 using partial Grant funding):
    a. Install AMI end point transmitters and meter lids
    b. Install AMI fixed network communication equipment
    c. Meter Data Management System implementation and commissioning
    d. Customer portal development, implementation, and commissioning
    e. Public outreach, AMI implementation consultant, IT support, design, start-up, testing, and training
4. Other Items (using City funds):
    a. Project management and City staff time through project start-up
5. Project Cost Summary (to complete work): $7,149,346.

Table 4 - Total Project Cost Overview

SOURCE	AMOUNT	PERCENT
Costs requested for Federal funding	$ 1,500,000	21%
Costs to be paid by the applicant (City)	$ 5,649,346	79%
Value from other Federal entities	$ 0	0%
Value from others, third parties, etc.	$ 0	0%
TOTAL PROJECT COST	$ 7,149,346	100%

c) Purpose and Anticipated Project Benefits:

1. Water Demand Reduction: AMI systems collect and present detailed usage data-to-water utility customers, empowering them with the

knowledge they need to make informed usage decisions. AMI's two-way communication gives the City near real-time data to share with its customers to enhance their ability to conserve water, thereby lowering their water use. In general, a 5% reduction in water demand can be expected due to this "change of behavior" type of water conservation, thereby resulting in reduced water production and wastewater treatment. This estimate is aligned with the City's Water Conservation Program Decision Support System (DSS) Model using water savings data from water industry observations.

2. Apparent Water Loss Reduction: The City currently has a meter replacement project underway to replace the City's water meters with AMI compatible meters. The City's Phase 1 Meter Replacement Project has already helped reduce revenue losses associated with pipe leakage and/or inaccurate meters. Implementation of AMI will further reduce the loss in revenue from unauthorized use, and accounting & data discrepancies.

3. Enhanced Customer Service: With the current manual water meter practices, reading cycles range between 28 and 33 days. Meters being read at longer intervals can potentially push a portion the customer's monthly water consumption into a more expensive tiered water rate. AMI eliminates this problem, since AMI meters will be billed for consistent intervals.

4. Meter Reads and Rereads: Effective implementation and use of AMI also can significantly reduce the costs associated with reading the City's meters, meter re-reads, estimated bills, credits and adjustments, and initial and final reads.

d) Detailed Description of AMI Technology:

The two most common AMI systems are fixed-network and cellular-network systems. With the AMI fixed-network system, meter reading is accomplished by Meter Transmission Units (MTUs) installed on each meter which collect readings from the meter and transmit them via radio signals to Data Collection Units (DCUs). The DCUs are permanently located strategically across the service area. The DCUs relay the collected data to a single central location, where it is organized in a Meter Data Management system (MDM) database. Alternatively, the cellular-network systems use cellular endpoints installed on each meter to transmit the meter data via an existing cellular infrastructure to a central database system (hosted or on-premise) for analysis and reporting. As noted

above herein, the City has determined that a fixed network system is best suited for the City's current and future needs. An AMI system involves automatically transmitting readings from meters to Data Collection Units (DCUs) in the field and then to a utility's computer system. Readings are usually taken at hourly intervals and transmitted to the City's network from one to four times per day. Once received, readings can be extracted for billing and customer service purposes, as well as analyzed to find potential customer leaks, promote water conservation and determine detailed water usage patterns.

The following sections describe the various AMI System components:

1. Meter Register: Each meter must be equipped with an AMI compatible register that takes usage measured by the meter, displays it for manual reading as needed, and converts it into a digital format compatible with the Meter Transmission Unit (MTU) obtaining AMI readings. Each meter has an encoder register and in-line connector for use with an MTU. The digital reading obtained by the MTU is sensed directly from the position of the register's dials using internal LED light paths to determine the exact position of each number wheel.

2. Meter Transmission Unit (MTU): MTUs connect to meter registers either through in-line connectors or factory potted wiring. They take readings data from registers and transmit them via radio frequency to DCU or repeaters. A unique MTU ID number and any necessary notifications are transmitted with readings. Notifications include tampering, potential customer leaks, and reverse water flow. The MTU does not collect any personal information. MTUs can, in some cases, be mounted under composite meter box lids without significant degradation of signal strength. MTUs are also referred to as "End Points" in this application.

3. AMI Repeaters: Many MTUs in an AMI system transmit their signals directly to a nearby DCU. Terrain, population density and other factors can also require the use of Repeaters, which receive the MTU signals, then intensify and relay them to DCUs. Such functionality allows development of robust AMI systems at a reduced cost. Repeaters are usually mounted on utility poles and powered by AC or solar energy.

4. Data Collection Units (DCU): DCUs store signals received from MTUs or Repeaters and transmit them over the Fixed Network to the system's Head End Computer. One DCU can manage readings from thousands of MTUs. They are usually mounted on utility poles, rooftops, or water reservoirs and powered by utility power or solar energy.

5. Head End Computer: The Head End Computer controls the AMI system, receives readings and notifications from DCUs, and sends programming and other instructions to them. It also initiates on-demand readings upon request. Readings and notifications are provided to the Meter Data Management (MDM) system.

6. Fixed Network: The AMI fixed network allows two-way communications between DCUs and the Head End Computer, using options such as Ethernet, Wide-Area Network (WAN), Local-Area Network (LAN), Wi-Fi, or cellular technology. The Head End Computer is used by the utility to access the meter data.

7. Meter Data Management System: The Meter Data Management (MDM) system serves as a meter reading and notification repository for the AMI system. It provides meter readings for billing as scheduled. Analytical capabilities of an MDM system allows detailed usage, meter tamper, endpoint battery life, customer leak and notification review, water usage patterns, and report generation. The MDM can interface with web portals where customers can log in and securely view their water usage information which can be extremely helpful when responding to customer concerns.

8. AMI Customer Web Portal: The AMI customer web portal is a web-based interface that provides consumers with a view of their water usage online to better understand their usage, improve usage behavior, and communicate with their utility. Customers or their utility service provider can configure the web portal to display informational alerts such as leak alerts and budgetary threshold alerts. Easy-to-read charts and graphs help consumers to easily monitor their water usage and costs, review daily water use patterns, and manage their indoor & outdoor water usage.

9. AMI Register Device Battery Life: In general, the AMI meter registers device have battery configurations that provide enough long-term energy to support their higher frequency of data. The City can expect batteries in the AMI system to achieve a full life expectancy up to 20 years to match the MTU replacement intervals.

V. Evaluation Criteria (E.1)

The table below provides a general summary of the City's intended approach to compliance with each applicable Evaluation Criteria listed in FOA BOR-DO-20-F001, Section E.1:

Table 5 – Evaluation Criteria Summary Table

ITEM	DESCRIPTION	APPROACH STATEMENT	PTS
A	Quantifiable Water Savings	Mandated Application Content Included	30
B	Water Supply Reliability	Mandated Application Content Included	18
C	Implementing Hydropower	Mandated Application Content Included	11
D	On-Farm Irrigation Improvements	Not Applicable	10
E	Department of Interior Priorities	Mandated Application Content Included	10
F	Implementation and Results	Mandated Application Content Included	6
G	Nexus to Reclamation Activities	Mandated Application Content Included	4
H	Additional Non-Federal Funding	Mandated Application Content Included	4

CRITERIA A - QUANTIFIABLE WATER SAVINGS (E.1.1)
INFRASTRUCTURE TYPE: MUNICIPAL METERING

The 27,246 AMI compatible meters connected to the AMI system will enable the City and its customers to be quickly notified of major and minor leaks as well as any abnormal use patterns. This will culminate in a measurable reduction in water use. It is expected to take 26 months to implement and integrate the City's planned AMI program features, which include online water use software and leak detection customer notification. The AMI system's useful life is expected to be 20 years. Water conservation estimates are based on this time frame.

Numerous independent studies have been conducted to quantify water savings and reduced water use due to AMI implementation. These studies are used by the City to corroborate AMI Project assumptions with regard to water savings. After AMI implementation, savings estimates were reported to be as high as 50% on leakage (water mains + private lines), according to a case study conducted by the San Francisco Public Utility Commission (SFPUC) and presented by Julie Ortiz at the 2019 CalWEP Peer-to-Peer Conference *AMI: Everything You Need To Know To Run A Successful Program*. For the study, SFPUC conducted an AMI-based Leak Alert Pilot Program from March 2015 to August 2017. Afterwards, Single Family (SF) customer leak alerts occurred from September 2017 to February 2019, alerting approximately 6% of SF homes. This study found that AMI-based leak alerts reduced SF leak volumes by 46%. Customers who were notified through multiple methods were twice as likely to investigate leaks (and responded 3-6 days faster on average) versus those notified only by letter. In the SFPUC study, these end use savings percentages equate to approximately 7.3% total account water savings in SF, 6.8% on Multifamily (MF), 7.0% on Business (BUS), 5.3% on Industrial (IND), and 6.8% on Irrigation (IRR) accounts, or 5.9% overall system-wide.

The SFPUC system-wide savings estimate is also consistent with a study done for East Bay Municipal Utility District (EBMUD) that showed that AMI implementation, coupled with online water use software, provides an average account water savings of approximately 5% (individual account savings can be up to 50%). The results of this study imply that water savings can accrue because of the social norming that occurs when customers obtain knowledge and thus develop a better understanding of their own consumption patterns. This is often enabled through customer access to near real-time water use data using a cloud-based portal. In addition, end-users are more inclined to take steps to conserve additional water when they are able to compare their current water use to historic use, other similar users, and high efficiency users. See Attachment 5, EBMUD Advanced Metering Infrastructure Pilot Study Update.

Further supporting the grant measure's savings assumptions are the results from the City's ongoing pilot study to determine how leaks can be detected faster with AMI. Pilot data from over 185 participating accounts representing all customer categories from March 1, 2018 through September 1, 2018, was reviewed and compared to the water use from those same accounts from March 1, 2019 through September 1, 2019. The before and after water use was averaged and it was found that the accounts with AMI averaged 14.4% less water demand overall. In addition, the AMI accounts with users who signed up for EyeOnWater (EOW), Badger Meter's customer portal, averaged 16.6% less water. Over 65 accounts in total signed up for the EOW portal. This allowed access to daily and hourly water use. Such access inspires reductions in account water use through behavioral action rather than just leak repair. In fact, the majority of pilot study participants have not had any leaks identified during the March 2018 through September 2019 time period. Looking at over 105 single family accounts (SF), those with AMI averaged 15.3% less water, while the 41 single family AMI accounts who signed up for EOW averaged 19.7% lower water use overall. The average reduction in water demand for the City's pilot project is 14.4%.

The City's analysis conservatively assumes 30% water savings on leakage per AMI meter. An additional 5% water use savings were assumed on all other relevant end uses due to AMI customer notification capabilities, which help enhance customer water conservation based on knowledge of their water use. The following table presents a summary of design input assumptions.

Table 6 - Determining AMI Project Annual Average Water Savings – Assumptions Used

PROJECT ELEMENT	ASSUMPTION
Total # of AMI meters (100% of City meters)	27,246
Total water supplied to City in FY 18	9,443
% water savings on leakage per AMI meter	30%
% water savings on non-leakage end uses per AMI meter	5%
Total Water Savings per Year (AFY)	631
Total Lifetime Water Savings (AF) over 20 years	12,620
Total Water Savings per Account or Meter (AFY)	0.023
% System-wide Savings (640 AF / 9,443 AF)	6.7%

To determine projected project water savings, this project uses the Demand Side Management Least Cost Planning Decision Support System (DSS Model) developed by Maddaus Water Management, Inc. The measure design is based on the City of Santa Barbara AMI Business Case from June 2015 (Attachment 4). The DSS Model prepares long-range water demand and conservation water savings projections. First developed in 1999 and continuously updated, the DSS Model is an end-use model that breaks down total water production (i.e., water demand in the service area) into specific water end uses (toilets, faucets, irrigation etc.). This "bottom-up" approach allows for detailed criteria to be considered when estimating future demands, such as the effects of natural fixture replacement, plumbing codes, and conservation efforts. The purpose of using end-use data is to enable a more accurate assessment of the impact of water efficiency programs on demand and to provide a rigorous and defensible modeling approach necessary for projects subject to regulatory or environmental review.

For the City of Santa Barbara, the demand was based on a forecasted increase in population and employment. The DSS Model evaluates conservation measures using benefit-cost analysis with the cost of water saved and benefit-to-cost ratio as economic indicators. The quantitative analysis is performed from the perspective of the utility as well as the perspective of the City's customers.

In the DSS Model, the City's demand is analyzed to approximate the split of indoor and outdoor water usage in each customer category. The indoor/outdoor water usage is further divided into typical end uses for each customer category. Published data on average per-capita indoor water use and average per-capita end use are combined with the number of water users to calibrate the volume of water allocated to specific end uses in each customer category. In other words, the DSS Model checks that social norms from end studies on water use behavior (e.g., for flushes per person per day) are not exceeded. The DSS Model evaluates conservation measures using benefit-cost analysis with the present value of the cost of water saved ($/million gallons). Benefits are based on savings in water and wastewater facility operations and maintenance (O&M). The DSS Model has been used for practical applications of conservation planning in over 230 service areas representing 20 million people, including extensive efforts nationally in California, Colorado, Hawaii, Idaho, Utah, Georgia, Florida, North Carolina, Oregon, Texas, Ohio, and internationally in Australia, New Zealand and Canada.

On the following page is a screenshot (Figure 2) of the DSS Model's design input worksheet for the City's AMI Project.

Figure 2 - DSS Model Screenshot

Conservation Measures

GRANT AMI Implementation - Online Water Use Software and Leak Detection Customer Notification

City of Santa Barbara

Previous Step | Conservation | A | RE | W | IR | CII | N | M | LD | PR | LE | U | U | T | H | R | R | SP | La | SC | GE | DI | US | US | B/C | Next Step

Edit Measure

GRANT AMI Implementation - Online Water Use Software and Leak Detection Customer Notification

Overview

Name	GRANT AMI Implementation - Online Water Use Software and Leak Detection Customer Notification
Abbr	USBR_AMI_30
Category	Default
Measure Type	Standard Measure

Time Period	
Measure Length	1

Measure Life	
Permanent	☐
Years	20
Repeat	☐

Description

Full AMI Implementation cost for the meter transmitting units, radio or cellular network, and meter data management software. Measure includes customer leak notification via online water consumption software, phone or e-mail. Measure will be as automated as possible.

Customer Classes

SF	MF	BUS	IND	IRR
☑	☑	☑	☑	☑

End Uses

	SF	MF	BUS	IND	IRR
Toilets	☐	☐	☐	☐	
Urinals			☐	☐	
Lavatory Faucets	☑	☑	☑	☑	
Showers	☑	☑	☑	☑	
Dishwashers	☑	☑	☑	☑	
Clothes Washers	☑	☑	☑	☑	
Process			☑	☑	
Kitchen Spray Rinse			☑	☑	
Internal Leakage	☑	☑	☑	☑	
Baths	☐	☐			
Other	☑	☑	☑	☑	
Irrigation	☑	☑	☑	☑	☑
Pools	☐	☐	☐		
Wash Down	☑	☑			
Car Washing	☑	☑			
External Leakage	☑	☑	☑	☑	☑
Outdoor					
tory/Kitchen Faucets	☑	☑	☑	☑	

Targets

Target Method: Detailed

Enter Annual Targets Below

End Use Savings Per Replacement

Method: Percent

	% Savings/Acct	Avg GPD/Acct
SF Lavatory Faucets	5.0%	7.7
MF Lavatory Faucets	5.0%	16.4
BUS Lavatory Faucets	5.0%	14.9
IND Lavatory Faucets	5.0%	165.2
SF Showers	5.0%	37.0
MF Showers	5.0%	70.5
BUS Showers	5.0%	40.8
IND Showers	5.0%	220.3
SF Dishwashers	5.0%	3.1
MF Dishwashers	5.0%	3.0
BUS Dishwashers	5.0%	27.2
IND Dishwashers	5.0%	137.7
SF Clothes Washers	5.0%	17.0
MF Clothes Washers	5.0%	45.3
BUS Clothes Washers	5.0%	67.9
IND Clothes Washers	5.0%	413.0
BUS Process	5.0%	63.4
IND Process	5.0%	357.9
BUS Kitchen Spray Rinse	5.0%	22.6
IND Kitchen Spray Rinse	5.0%	137.7
SF Internal Leakage	30.0%	23.1
MF Internal Leakage	30.0%	28.5
BUS Internal Leakage	30.0%	54.4
IND Internal Leakage	30.0%	192.7
SF Other	5.0%	18.5
MF Other	5.0%	2.5
BUS Other	5.0%	45.3
IND Other	5.0%	110.1
SF Irrigation	5.0%	70.9
MF Irrigation	5.0%	33.1
BUS Irrigation	5.0%	77.9
IND Irrigation	5.0%	192.7
IRR Irrigation	5.0%	543.1
SF Wash Down	5.0%	6.2
MF Wash Down	5.0%	1.6
SF Car Washing	5.0%	6.2
MF Car Washing	5.0%	1.6
SF External Leakage	30.0%	4.4
MF External Leakage	30.0%	2.8
BUS External Leakage	30.0%	6.3
IND External Leakage	30.0%	14.5
IRR External Leakage	30.0%	40.9
SF Non-Lavatory/Kitchen Faucets	5.0%	23.1
MF Non-Lavatory/Kitchen Faucets	5.0%	32.7
BUS Non-Lavatory/Kitchen Faucets	5.0%	39.4
IND Non-Lavatory/Kitchen Faucets	5.0%	179.0

Water Savings

Units: afy

	Total Savings (afy)		Total Savings (afy)
Year 1	631.1	Year 11	631.1
Year 2	631.1	Year 12	631.1
Year 3	631.1	Year 13	631.1
Year 4	631.1	Year 14	631.1
Year 5	631.1	Year 15	631.1
Year 6	631.1	Year 16	631.1
Year 7	631.1	Year 17	631.1
Year 8	631.1	Year 18	631.1
Year 9	631.1	Year 19	631.1
Year 10	631.1	Year 20	631.1

Targets

View: Accounts

	SF	MF	BUS	IND	IRR	Total
Year 1	16,676	6,882	2,754	63	872	27,246
Year 2	0	0	0	0	0	0
Year 3	0	0	0	0	0	0
Year 4	0	0	0	0	0	0
Year 5	0	0	0	0	0	0
Year 6	0	0	0	0	0	0
Year 7	0	0	0	0	0	0
Year 8	0	0	0	0	0	0
Year 9	0	0	0	0	0	0
Year 10	0	0	0	0	0	0

Mandated Application Content (Per Section E.1.1):

1. Describe the amount of estimated water savings.

In summary, this measure is expected to save the City approximately 631 AF per year; 12,620 AF in total over the 20-year measure savings life; or approximately 0.023 AFY/account (see Table 6).

2. Describe current water losses.

The City recently conducted an audit of the water system using the American Water Works Association (AWWA) methodology. The audit showed that potable real water loss accounts for approximately 9.9% percent of the total annual potable water supplied by the City.

Calculation of Adjusted Water Loss Percentage:

- % Water Loss = FY 2019 Water Loss / FY 2019 Water Supplied
  - % Water Loss = 9.9% = 955 AF / 9,666 AF
- See Attachment 3, City of Santa Barbara Revised FY 19 Water Loss Audit, for data points.

3. Describe the support/documentation of estimated water savings.

- City of Santa Barbara's ongoing AMI Implementation Pilot Study
- City of Santa Barbara AMI Business Case from June 2015 - see Attachment 4
- SFPUC Case Study presented by Julie Ortiz at the 2019 CalWEP Peer-to-Peer Conference *AMI: Everything You Need To Know To Run A Successful Program*
- EBMUD Study Presentation and Attachment C, WaterSmart Evaluation – see Attachment 5

4. Municipal Metering Questions:

a) How has the estimated average annual water savings that will result from the project been determined (inc. relevant calculations, assumptions, and supporting data)?

Determining AMI Project Annual Average Water Savings and Section V-Criteria A, for the City's methods and findings related to the AMI Project estimated average annual water savings, see Table 6.

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

City of Santa Barbara Revised FY19 Water Loss Audit, for how the City determines "current distribution system losses", see Attachment 3.

DSS Model Screenshot, for how the City's determines "the potential for reduction in water use by individual users", see Figure 2.

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.

The addition or installation of new "individual water use meters" is not part of the City's AMI Project. All City water services are already metered. See Section V-Criteria A for information on how the project is estimating water use reduction.

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).

The installation of water distribution main meters is not encompassed in the City's AMI Project.

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

The City's installation of AMI compatible water meters is not included in this Grant application. Specific network and communication device information, and related design elements, will be determined by the future AMI vendor as part of the City's ongoing AMI Project Request for Proposal process.

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

In general, water savings will be verified by ongoing comparison of historical data versus the new AMI system generated data.

CRITERIA B – WATER SUPPLY RELIABILITY (E.1.2)
INFRASTRUCTURE TYPE: MUNICIPAL METERING

Mandated Application Content (Per Section E.1.2):

1. Will the project address a specific water reliability concern?

The project will specifically help address the City's fundamental water reliability concern, extended droughts. The fundamental challenge for the City's water supply continues to be the ability to provide adequate water during an extended drought. By reducing demand on water

supply sources, the City will extend the viability of those sources, improve overall reliability of the system, and reduce reliance on especially vulnerable sources.

New AMI technologies and practices for conserving water will have an absolute and constructive impact on the City water supply outlook. As noted previously in this application, the 20-year water savings are estimated to be 12,620 AF. This saved/retained water supply equates to approximately 1.2 years of City's total water use (based on the 5-year average annual total water use, i.e.: 12,620 AF / 10,310 AFY = 1.2 years) and potentially extends the City's ability to supply water by that period of time.

- *Explain and provide detail of the specific issue(s) in the area that is impacting water reliability, such as shortages due to drought, increased demand, or reduced deliveries. Will the project directly address a heightened competition for finite water supplies and over-allocation (e.g., population growth)?*

The following is an itemized response to the requested information:
- Shortages Due to Drought: The City's long-term fundamental challenge is an extended drought This has been discussed elsewhere in this Grant application.
- Increased Demand: This not a concern. The City's annual water production has actually decreased over the last decades as the community has responded to droughts and the City's robust water conservation program. The City has been almost fully developed and built out for several decades, and a major increase in development is not anticipated.
- Reduced Deliveries: The City has a diverse water supply portfolio. However, during extended droughts, the system's vulnerabilities are exposed. It is always possible that reservoirs are negatively impacted by drought, fire, or other natural disaster.
- Population Growth: Since 1990, Santa Barbara's population growth has been limited to an average of 0.25% annually. The City has been almost fully developed and built out for several decades, and major increases in population are not anticipated.

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

New AMI technologies and its resulting practices for conserving water will create an estimated water savings of 12,620 AF over 20 years. This savings equates to approximately 1.2 years of the City's total water use based on the current average annual usage. This measurable water savings will reduce the City's dependence on its current water sources (reservoirs, groundwater, desalination, and State Water), and most critically during the next extended drought.

The following is to address the items listed:

- Offset groundwater pumping: The two groundwater basins from which the City pumps are categorized as very-low priority by the California Department of Water Resources; therefore, the Sustainable Groundwater Management Act does not mandate any management activities for the basins. However, groundwater is an important component of the City's water supply portfolio, especially in times of drought, when surface water supplies are diminished. The City conjunctively uses its groundwater resources by pumping them in times of drought, and resting and replenishing them during "normal" water years. Conservation measures, such as those that will be realized through implementation of the AMI Project will help the City better manage its groundwater basins.
- Address reduced deliveries: The measurable water savings derived from the Project will reduce the City's dependence on water imported through the State Water Project, which has seen decreasing reliability over the past several years, and improve the City's resilience to the impacts of a local or State-wide drought.
- Made available for transfer: Not applicable
- Left in a river system: Not applicable
- Other intended uses: Not applicable

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

The intended use of the water savings is to extend the life of the City's various water supply sources for use when needed, especially in times of drought. There is no engineering mechanism necessary to physically achieve the goal.

- *Indicate the quantity of conserved water that will be used for the intended purpose.*

The 20-year anticipated water savings of 12,620 AF would be retained in City, State, and Bureau controlled facilities including reservoirs, groundwater basins, and other raw water storage facilities, for use when needed.

2. Will the project make water available to achieve multiple benefits or to benefit multiple water users?

The following are anticipated beneficiaries of the increased available water as a result of the City's AMI Project:

- Sacramento-San Joaquin Delta: The Project will make more water available for in-stream flows for the sources of the Sacramento-San Joaquin Delta. By reducing demand on source supplies, the conserved water will remain in the river system which will help maintain in-stream flows and overall ecosystem health. The Project will provide more water to the natural environment and to species reliant on water from these sources.

- Santa Barbara and Foothill Groundwater Basins: The two groundwater basins from which the City pumps are categorized as very-low priority by the California Department of Water Resources; therefore, the Sustainable Groundwater Management Act does not mandate any management activities for the basins. However, groundwater is an important component of the City's water supply portfolio, especially in times of drought, when surface water supplies are diminished. The City conjunctively uses its groundwater resources by pumping them in times of drought, and resting and replenishing them during "normal" water years. Conservation measures, such as those that will be realized through implementation of the AMI Project, will help the City best manage its groundwater basins and conserve its groundwater resources.

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

The project will include new AMI compatible meters and access to the user portal for all City water customers. Customer classifications include residential, multi-family, commercial, industrial, agriculture, irrigation, etc., therefore, the project will benefit all sectors and users.

- *Will the project benefit species (e.g., federally threatened or endangered, a federally recognized candidate species, a state listed species, or a species of particular recreational, or economic importance)?*

As stated previously in the application, the project is anticipated to generally reduce the City's dependency on water from the State Water Project that is sourced from the Sacramento-San Joaquin Delta. The Sacramento-San Joaquin Delta provides habitat for more than 500 species of fish and wildlife. The 2013 Bay Delta Conservation Plan identified over 30 non-listed species potentially impacted by withdrawals from that system through the State Water Project (SWP). Impacts from withdrawals occur due to the change of river flow by pumping, capture within pumping equipment, and increased saltwater intrusion due to pumping. A decrease in water imported through the SWP could help to alleviate these pressures on the Sacramento-San Joaquin Delta ecosystem and could help restore habitat for non-listed species.

Recreation opportunities in the Delta region are extensive, including fishing, hunting, boating, camping, picnics, and bird watching. Incrementally increased available water supply, resulting from the City's AMI Project, could have a net positive affect on the area's recreational opportunities and the area's recreation based economy.

- *Please describe the relationship of the species to the water supply, and whether the species is adversely affected by a Reclamation project.*

State Water diversions from the Sacramento-San Joaquin Delta impacts the flow of rivers and the intrusion of saltwater. A decrease in imported State Water will help mitigate impacts on the Sacramento-San Joaquin Delta habitat for non-listed species.

- *Will the project benefit a larger initiative to address water reliability?*

The City's AMI Project, as encompassed by this Grant funding application, is an independent undertaking by the City of Santa Barbara, which is not intended to directly benefit other City programs, other agency programs, and/or larger initiatives addressing water reliability.

- *Will the project benefit Indian tribes?*

The project is not anticipated to benefit the Chumash Tribe nor other Indian tribes.

- *Will the project benefit rural or economically disadvantaged communities?*

The City's water service area does not encompass any Rural designated zoning.

The City's water service area is not encompassed within designated Disadvantaged Communities (DACs). However, there are multiple census blocks within the City's service area which qualify as economically disadvantaged, as shown on Attachment 6, U.S. Bureau of Reclamation DAC Mapping Tool. The City's AMI Business Case document (Attachment 4), provides data and conclusions that show the Project will result in lower water system operating costs over time, resulting in favorable water rates. This will benefit and assist all water customers, including those considered economically disadvantaged.

Early detection of water leaks will have greater impact on economically disadvantaged community members by helping reduce unnecessary water bill costs.

While many low-income customers do not have traditional Internet services or access to personal computers, over 50% of these households do have a smartphone as a primary communication device with at least access to text messaging if not full web access. Utilities have a substantial opportunity to improve disadvantaged community engagement by utilizing the kinds of targeted communications that customer self-service platforms enable. By employing these new data technologies, utilities can address issues of affordability and social equity while simultaneously driving down service costs, protecting revenue, and improving customer satisfaction.

3. Does the project promote and encourage collaboration among parties in a way that helps increase the reliability of the water supply?

The City promotes and encourages collaboration with the public, other agencies, and independent advocacy groups as an accepted means of gaining consensus on critical governance issues. As discussed in more detail below, the City administers, funds, and supports several dozen citizen advisory boards, commissions, and committees, some of which have been in existence for over 100 years.

The City's AMI Project's main goal is to reduce water demand and thereby increase the reliability of existing water supplies. With regard to improving individual water use habits based on customer use of the AMI system portal, the main tactic in achieving this goal is collaboration between the City and its water customers. The collaborative and constructive free exchange of AMI information and data, promoted by the City's public outreach, is the most essential element in achieving the City's ultimate AMI water saving goals.

With regard to reduction of actual water loss, there will be an on-going collaborative effort necessary between the City's Water Distribution operators and Water Distribution maintenance crews in identifying, locating, planning, and executing water system leak repairs. This will be an on-going and collaborative effort requiring cooperation with multiple City departments.

The City is part of a Regional Water Efficiency Program, a Santa Barbara County collaborative group dedicated to promoting water conservation countywide. It is the expectation that the City will be able to share positive results from the complete top-to-bottom AMI program to encourage and share targeted conservation messaging with other water utilities in the region.

- *Is there widespread support for the project?*

Multiple entities support the project and have provided letters of support.

These individuals and organizations include:

U.S. Congressman Salud Carbajal
360 S. Hope Ave, Suite C-301
Santa Barbara, CA 93105
Phone: 805.730.1710

Santa Barbara Community Environmental Council
Sigrid Wright, CEO
26 W Anapamu Street
Santa Barbara, CA 93101
Phone: 805.963.0583

Art Ludwig
City Water Customer
Ecological Systems Designer
Art@OasisDesign.net

There are no organizations, groups, or individuals known to oppose the Project as of the submission of this Grant funding application.

See Attachment 7 for Letters of Support

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

The City of Santa Barbara greatly values collaboration with, and involvement from, the public and other interested parties & stakeholders. As evidence of this commitment, the City has a total of 32 Advisory Boards, Commissions, and Committees that allow members of the public and others to interact with City staff and City Council in a meaningful way and get involved on a wide variety of subjects encompassing most City functions. The City also has a good working relationship with the independent advocacy groups in our region.

The net positive result of this comprehensive effort to collaborate with the public via Boards, Commissions, and Committees, is a greater level of perceived governmental transparency and a resulting broader community support for critical City programs and projects.

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

Several water providers in our region are currently deploying AMI systems. This will lead to further collaboration on water use trends, water loss programs, targeted water efficiency measures, etc., on a regional level. This is especially relevant as it pertains to gaining customer buy-in and increasing utilization of the website portal as a water conservation tool.

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

The fundamental challenge for the City's water supply is uncertain rainfall and extended drought. The past two droughts have presented significant engineering and community based challenges for the City and its citizens. In the 1987 to 1991 drought, City reservoirs were drained empty, ground water wells were drilled in reservoirs and pumped to intake pipes, and a desalination plant was constructed specifically to provide relief from the on-going crippling drought. In the recent 2012 to 2019 drought, the City's and region's reservoirs were dangerously low, groundwater levels reached historic lows, and the City's mothballed desalination plant was reactivated in the most expensive construction project in the City's recent history.

It might be considered unfair to deem either of these previous drought circumstance as a true "water-crisis", as in both cases City staff and the community responded effectively to mitigate the worst case intolerable impacts. However, during these period, the drought was of the highest importance for City leaders, City staff, and the public. Local television and newsprint covered the situation extensively and on a frequent basis.

The City's AMI project goals are to reduce water demand, improve water source reliability, reduce water loss due to leaks, and improve customer water use habits by user portal interface. By achieving these goals, the City's AMI Project will help mitigate the impact of future droughts, and other water shortage related issues.

- *Describe the roles of any partners in the process. Please attach any relevant supporting documents.*

The City's AMI Project, as encompassed by this Grant funding application, is an independent undertaking by the City of Santa Barbara without external partnerships. The project does not involve outside agencies, groups, partners, or individuals.

4. *Will the project address water supply reliability in other ways not described above?*

The City is not aware of any additional project benefits with respect to water supply reliability.

CRITERIA C – IMPLEMENTING HYDROPOWER (E.1.3)

CITY'S HYDROELECTRIC FACILITY AT LAURO RESERVOIR

The City owns and operates a hydroelectric facility that flows into Lauro Reservoir, a Reclamation facility. The average annual power production is 1,800 MWh, and electricity generated by the pelton wheel is fed directly into Southern California Edison's power grid. The plant was originally constructed in 1985 and decommissioned in 2002 because of costly regulations. It was recommissioned in 2015 and is anticipated to operate consistently providing a clean renewable energy source for the foreseeable future.

Flow into the hydroelectric facility comes from the City's reservoir, Gibraltar. As Lauro is a Reclamation facility, agreements between member agencies stipulate that flow from Gibraltar into Lauro cannot exceed the amount of water needed by City customers during the same period of delivery. Access to AMI data will allow the City to precisely determine the daily demands of its customers, which will thereby permit the flow from Gibraltar to power the facility to be optimized, allowing the maximum amount of hydropower generation by the facility.

CRITERIA D – COMPLIMENTING ON-FARM IRRIGATION IMPROVEMENTS (E.1.4)
NOT APPLICABLE TO THIS FUNDING APPLICATION

CRITERIA E – DEPARTMENT OF INTERIOR PRIORITIES (E.1.5)
INFRASTRUCTURE TYPE: MUNICIPAL METERING

Mandated Application Content (Per Section E.1.5):

1. Creating a conservation stewardship legacy second only to Teddy Roosevelt

The City is a long-term leader in water conservation. The City's Water Conservation Program began as a response to drought in the late 1970s. The program experienced increased participation due to the 1987- 1991 drought and the subsequent 1994 Long Term Water Supply Plan (LTWSP) identified a goal of 1,500 AFY of additional water conservation, a target that was met and exceeded. In 1991 the City signed the Memorandum of Understanding Regarding Urban Water Conservation in California (MOU). Since that time, the City has been actively implementing the best management practices for water conservation (BMPs) as well as additional water conservation measures. In accordance with the City's LTWSP, the City's current Water Conservation Program is operated to minimize the use of potable water supplies, meet the requirements of the BMPs, and achieve compliance with California Senate Bill X7-7 per capita water use reduction requirements. Water conservation measures are evaluated for cost effectiveness based on the avoided cost of additional water supplies.

The City's long-term commitment to water conservation is evident in reductions in water demand achieved over the past thirty years. Total system demand has dropped from approximately 16,300 acre feet/year (AFY) in the late 1980s to approximately 13,000 AFY in 2013 before the current drought and currently averaging 10,000 AFY.

The City believes that implementation of its AMI Project is an important part of sustainable water conservation stewardship. The City's commitment to the Project shows its dedication to ongoing technologically-based improvements to the conservation program.

Items in Subcriterion F also support the City's conservation stewardship legacy.

a. Utilize science to identify best practices to manage land and water resources and adapt to changes in the environment;

The City of Santa Barbara's ongoing efforts to implement AMI technology is an excellent example of using scientific advancements in communications and data acquisition to better manage the City's most complex and expensive natural resource challenge, municipal water.

b. Examine land use planning processes and land use designations that govern public use and access.

This Department of Interior priority is not applicable to the City of Santa Barbara AMI Project.

c. Revise and streamline the environmental and regulatory review process while maintaining environmental standards.

This Department of Interior priority is not directly applicable to the City of Santa Barbara AMI Project. However, the Project will significantly streamline and enhance interactions between the City and its water customers. In this way, the project is certainly streamlining governmental "red-tape" and enhancing governmental efficiency. The project does not affect any "environmental or regulatory review process" as stated in the priority.

d. Review Department water storage, transportation, and distribution systems to identify opportunities to resolve conflicts and expand capacity.

This Department of Interior priority is not directly applicable to the City of Santa Barbara AMI Project. However, the Project does affect the City's water storage and water distributions systems and does provide opportunities to help mitigate water supply and water storage issues.

e. Foster relationships with conservation organizations advocating for balanced stewardship and use of public lands.

This Department of Interior priority is not applicable to the City of Santa Barbara AMI Project.

f. Identify and implement initiatives to expand access to Department lands for hunting and fishing.

This Department of Interior priority is not applicable to the City of Santa Barbara AMI Project.

g. Shift the balance towards providing greater public access to public lands over restrictions to access.

This Department of Interior priority is not applicable to the City of Santa Barbara AMI Project.

2. Utilizing our natural resources

The City's AMI Project certainly fosters the effective utilization of available natural resources.

a. Ensure American Energy is available to meet our security and economic needs.

This Department of Interior priority is not applicable to the City of Santa Barbara AMI Project.

b. Ensure access to mineral resources, especially the critical and rare earth minerals needed for scientific, technological, or military applications.

This Department of Interior priority is not applicable to the City of Santa Barbara AMI Project.

c. Refocus timber programs to embrace the entire 'healthy forests' lifecycle.

This Department of Interior priority is not applicable to the City of Santa Barbara AMI Project.

d. Manage competition for grazing resources.

This Department of Interior priority is not applicable to the City of Santa Barbara AMI Project.

3. Restoring trust with local communities

As discussed elsewhere in this application, the City enjoys a collaborative and constructive relationship with the local community. As such, restoration of trust with the local community is not necessarily a distinguished goal. Nevertheless, the City AMI project will absolutely strengthen the trust and working collaborative relationship that already exists between the City, its water customers, and other local communities. The City of Santa Barbara Public Works Department vision statement is "a unified department that coordinates and collaborates effectively and earns the trust and high regard of our community." The AMI Project is certainly an important project in earning the trust and high regard of our community members and empowering them to better understand and control their water usage and water bills.

a. Be a better neighbor with those closest to our resources by improving dialogue and relationships with persons and entities bordering our lands.

This Department of Interior priority is not applicable as the City's Project does not border Reclamation resources or Reclamation Lands. However, and as noted herein above, the City of Santa Barbara enjoys collaborative and constructive relationships with its neighboring municipalities, including City of Goleta, County of Santa Barbara, and Caltrans. Additionally, we have close working relationships with the other water utilities in our county, especially the bordering water utilities such as the Goleta Water District and Montecito Water District. During all aspects of the AMI Project, the City will adhere to the Bureau's "be-a-better-neighbor" policy.

b. Expand the lines of communication with Governors, state natural resource offices, Fish and Wildlife offices, water authorities, county commissioners, Tribes, and local communities.

The City's AMI Project will include a robust public outreach component, thereby expanding the lines of communications between the City and the local community. It is also likely that in the future the City will collaborate with neighboring agencies as they undertake AMI conversion programs.

4. Striking a regulatory balance

This Department of Interior priority is not applicable to the City of Santa Barbara AMI Project.

a. Reduce the administrative and regulatory burden imposed on U.S. industry and the public.

This Department of Interior priority is not directly applicable to the City of Santa Barbara AMI Project. However, the Project will provide more efficient administrative dealings between the City and water customers, and will reduce the burden on the public when complying with drought mandated water use restrictions. The AMI system user portal is expected to be seen by the public as a clear improvement and enhancement of governmental-public interface.

b. Ensure that Endangered Species Act decisions are based on strong science and thorough analysis.

This Department of Interior priority is not applicable to the City of Santa Barbara AMI Project.

5. Modernizing our infrastructure

The City of Santa Barbara's implementation of AMI technologies is an excellent and clear example of modernizing our infrastructure. Existing meters, some of which were installed up to 30 years ago, offer lower accuracy and involve extended monthly readings, as compared to modern AMI compatible meters. The Project will allow the City and its water customers to use smart phones, internet access, leak detection algorithms, and other modern tools to improve management of water resources.

a. Support the White House Public/Private Partnership Initiative to modernize U.S. infrastructure.

The City of Santa Barbara's AMI project is an excellent example of a public/private partnership to modernize U.S. infrastructure. The City is intending to use the Request for Proposal to identify the needs of the City and have private companies propose modern AMI solutions to meet those needs. It is anticipated that those companies will present the best available technological options.

The City will select the system with the best of those options and create a path to modernize the City's water metering system. In addition, the installation of this technology is anticipated to be a collaboration between City and private companies.

b. Remove impediments to infrastructure development and facilitate private sector efforts to construct infrastructure projects serving American needs.

This Department of Interior priority is not applicable to the City of Santa Barbara AMI Project.

c. Prioritize Department infrastructure needs to highlight: (1) Construction of infrastructure; (2) Cyclical maintenance; (3) Deferred maintenance.

The City's AMI project is an excellent example to highlight the construction of infrastructure that is specifically aimed at improving maintenance and leak repair practices.

CRITERIA F – IMPLEMENTATION AND RESULTS (E.1.6)

INFRASTRUCTURE TYPE: MUNICIPAL METERING

Mandated Application Content (Per Section E.1.6):

SUBCRITERION F.1— PROJECT PLANNING (E.1.6.1)

Does the applicant have a Water Conservation Plan and/or System Optimization Review (SOR) in place? Please self-certify or provide copies of these plans where appropriate to verify that such a plan is in place.

The City is currently updating its Water Conservation Plan with an anticipated completion date of spring 2020. See Attachment 8, City Technical Memorandum concerning the conservation program.

The City's water conservation program has developed into a comprehensive demand management effort. An important focus of the water conservation program has been to comply with, and to help shape, the Best Management Practices (BMPs) for Urban Water Conservation initially administered by the California Urban Water Conservation Council (CUWCC) and now by the Bureau. These BMPs constitute the officially recognized standard for urban water conservation. Implementing the BMPs satisfies contractual requirements associated with the Cachuma Project. The BMPs are a requirement for water utilities to remain eligible for State and Federal loans and grants and Urban Water Management Plan acceptance. The City has been a signatory to the Memorandum of Understanding Regarding Urban Water Conservation since 1991 and has worked with CUWCC to ensure that the BMPs are practical and effective in achieving cost effective conservation savings. Highlights of the water conservation program include:

- A broad selection of up-to-date print and online information on indoor and outdoor water conservation for both homes and businesses, including water wise plant selection, online irrigation scheduling tools, sustainable landscaping, high efficiency appliances, awareness, etc.
- Rebates for installation of water wise plants, smart irrigation controllers, efficient irrigation systems, graywater systems, mulch, and high-efficiency clothes washers.
- A youth education program for elementary and secondary students, including classroom presentations, curriculum, treatment plant tours, and assemblies.
- The Green Gardener program, which trains landscape maintenance professionals in resource efficient and pollution prevention landscape maintenance practices through a 15 week course.
- Practical guidelines and ordinances that reflect current technology for water conservation, including the City's Landscape Design Standards for Water Conservation for new and remodeled construction projects.
- Targeted billing system analysis to reach customers with particularly high water usage, with an emphasis on providing landscape water budgets and real-time irrigation demand information.
- A highly popular residential and commercial customer assistance program, providing free water checkup visits to evaluate all water uses on the property and make recommendations for improved indoor and outdoor water efficiency, leak detection, and outreach about relevant rebate programs.

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

The critical planning that the City is utmost concerned with, especially during a drought, is the municipal water supply. The City's ongoing concentrated focus on water conservation, reduction of water demand, increased water use efficiency, provides and fosters significant technical, financial, and leadership support for the AMI Project. The City's AMI project will be included in the update of its Water Conservation Plan.

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 currently anticipated and planned City AMI Project closely conforms to the technical, financial, and administrative recommendations outlined in the City of Santa Barbara, AMI Business Case, dated June 2015 (see Attachment 4).

The City is not aware of any aspect of the project that implements a feature of any existing water plan(s).

SUBCRITERION F.2— PERFORMANCE MEASURES (E.1.6.2)

Provide a brief summary describing the performance measure that will be used to quantify actual benefits upon completion of the project (e.g., water saved or better managed, energy generated or saved).

The City tracks water production, customer consumption, and system water loss monthly and annually. This robust dataset will allow the City to quantitatively compare the City's water loss and customer water savings before and after AMI implementation.

The City conducts a system water loss audit using the AWWA M36 methodology on an annual basis. The water loss audit tracks water supplied/produced, customer consumption, real water losses, and apparent water losses, among other data points. The City will compare annual water loss audit reports prior to project implementation to water loss performance after AMI deployment. As part of the water loss auditing process, the City also receives a Data Validity Score (DVS) for the audit, which is a measure of the quality and confidence level of the data used as inputs in the water loss audit. Not only will the City be able to compare the actual volumetric changes in water loss, but we will also compare the integrity of the data itself that went into the creation of the audit. The City anticipates the AMI Project will increase the DVS of the audit, increasing the validity and confidence of the water loss audit.

The City has detailed customer consumption reports to compare customer consumption before and after AMI implementation. Once the customer portal is launched, the City will also monitor customer portal account creation and portal visits. The City will also be able to quantitatively compare customer water consumption between those customers who utilize the customer portal versus those who do not.

Another performance metric the City intends to monitor is billing leak relief adjustments. In certain circumstances, the City will adjust a customer's bill in the event of an unpreventable leak on the customer's property. With AMI, the City anticipates the average size of these adjustments will decrease as customers are notified of leaks in a matter of hours or days, rather than weeks or months. The City will also track outreach to customers about potential leaks. The City's current ability to notify customers of a possible leak is once a month during the regular meter read. With the robust usage data AMI provides, the City will be able to conduct more timely notifications to customers, and detect smaller leaks than what the City is able to detect now.

SUBCRITERION F.3— READINESS TO PROCEED (E.1.6.3)

- *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 AMI Project, as encompassed by this Grant funding application, is an independent undertaking by the City of Santa Barbara, without external partnerships, involvement of outside agencies, groups, or individuals. The City has the ability, authority, and its component of the funding available to proceed immediately with this project without outside approvals (other than approval of this Grant funding).

The City's Engineering, Information Systems, and Water Resources Division staff are up to speed on this project's intended benefits, proposed scope, and the City is ready to continue this project to its fruition. Evidence of the City's readiness to proceed are the following accomplishments undertaken to date:

1. The City has already replaced nearly 27,000 meters to date, using City staff
2. The City has undertaken an AMI Business Case feasibility study (see Attachment 4)
3. The City has designated Capital Improvement Program funding for the project
4. City Council will issue a Resolution in support of the project Grant funding (see Attachment 9)
5. The City has a 75% draft Request for Proposal document in development for the construction and integration of the AMI system (see Attachment 10)

The City has demonstrated, through its past successful projects with Federal funding, an ability and willingness to work effectively within Federal guidelines.

The City welcomes the opportunity to further its collaboration with the Federal government through funding and implementation of this AMI Project.

See Attachment 11 – City of Santa Barbara Preliminary AMI Project Schedule.

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

For the Project, the City intends to submit for a California Environmental Quality Act (CEQA) exemption and a Coastal Exemption for areas within the coastal zone.

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

The City began evaluating AMI technologies, customer portal providers, and utility data management systems in 2012.

City Engineering and Water Department staffs have completed significant engineering research and evaluations of available technologies.

The City has undertaken an AMI Business Case financial analysis (see Attachment 4).

The City is currently working on a 75% draft Request for Proposal document for the construction and integration of the AMI system (see Attachment 10).

The City has installed 27,000 AMI compatible meters.

The City has undertaken an AMI pilot project that resulted in an average 14.4% reduction in water demand for participants.

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

There will be no new policies or administrative actions required to implement the Project.

- *Describe how the environmental compliance estimate was developed. Has the compliance cost been discussed with the local Reclamation office?*

For the Project, the City intends to submit for a California Environmental Quality Act (CEQA) exemption and a Coastal Exemption for areas within the coastal zone. Costs for these exemptions are minimal. The City does not intend to include environmental compliance costs in this Grant funding application package.

CRITERIA G – NEXUS TO RECLAMATION PROJECT ACTIVITIES (E.1.7) INFRASTRUCTURE TYPE: MUNICIPAL METERING

Mandated Application Content (Per Section E.1.7):

- *Is the proposed project connected to Reclamation project activities? If so, how? Please consider the following: Does the applicant receive Reclamation project water?*

A major component of the City's water supply portfolio comes from Reclamation facilities. These include Lake Cachuma and Lauro Reservoir. (See Section IV-Background Data of this application.)Water in Lake Cachuma travels through Tecolote Tunnel to Lauro Reservoir, where it is stored until the City treats the water at Cater Water Treatment plant and delivers this water to City customers, and downstream agencies.

- *Is the project on Reclamation project lands or involving Reclamation facilities?*

The City's AMI Project is not located on Reclamation project lands. However, the project involves Reclamation facilities in that one of the City's primary water sources is Lake Cachuma. Lauro Reservoir, another Reclamation facility, holds raw water supplies before treatment and delivery.

- *Is the project in the same basin as a Reclamation project or activity?*

Although the City is not located within the Santa Ynez River Basin, one of the City's most important water supply sources, Lake Cachuma, is located on the Santa Ynez River. Cachuma is a Reclamation project. The City's surface water supplies, which include water from the Cachuma Project, is directed into Lauro Reservoir, another Reclamation project, before being treated at the Cater Water Treatment Plant.

- *Will the proposed work contribute water to a basin where a Reclamation project is located?*

It is not anticipated that the City's AMI Project will contribute water to a basin where a Reclamation project is located. However, Lake Cachuma, a Reclamation project, is a primary water source for the City.

- *Will the project benefit any tribe(s)?*

The project is not anticipated to benefit the Chumash Tribe.

CRITERIA H – ADDITIONAL NON-FEDERAL FUNDING (E.1.8) INFRASTRUCTURE TYPE: MUNICIPAL METERING

Mandated Application Content (Per Section E.1.8):

Provide non-Federal funding in excess of 50 percent of the project costs. State the percentage of non-Federal funding provided using the following calculation:

Non-Federal Funding / Total Project Cost.

The City is herein proposing to fund 79% of the project using the City funding sources, based on the following calculation:

- Non-Federal Funding = $ 5,649,346
- Total Est. Project Cost = $ 7,149,346
- City Funding Percentage = 79%

VI. Project Budget (D.2.2.5)

A. Funding Plan and Letters of Commitment:

1. It is the intent of the City to use City Water Department funds and the Reclamation WaterSmart grant to pay for the proposed project in full.
2. No other or outside funding sources are planned to be used to pay for costs. The City Water Department funds for this project are available at the time of this application and are committed for use on the project.
3. As such, there are no Letters of Funding Commitment contained herein from other or outside funding sources.
4. None of the City's noted funds will be used during the application review and award period. The City is planning on executing contracts and initiating purchasing of components after the anticipated grant award.
5. No environmental, cultural compliance, engineering, nor design costs are anticipated to be incurred directly by the City. No costs for preparation of this Grant application will be included in the budget costs. No purchases of water, land, nor easements are expected. There are no third-party nor other funding partners for this project.
6. Note the following Federal Form SF-242C Budget Information in Table 7.

Table 7 – Federal Form SF-242C Budget Information (see Table 10 for Budget Items)

Federal Form SF-242C (BUDGET INFORMATION – CONSTRUCTION PROGRAMS)		
4. Architectural and Engineering Fees (Budget Item F)	$	240,000
9. Construction (Budget Item B, C, D)	$	2,242,825
10. Equipment (Budget Item A)	$	4,011,762
11. Miscellaneous (Budget Item E)	$	654,759
16. TOTAL PROJECT COSTS	$	7,149,346

7. Funding Commitment: The City has allocated funds to cover the $5,649,346 of project costs noted below. These are existing funds that are currently available and will represent all the non-Federal share of the project funding. Reclamation Grant funds are anticipated to pay for $1,500,000 of the total project cost. This is in compliance with 50% maximum grant ratio requirement.
8. See Table 8 for specific funding ratios.

Table 8 - Funding Sources Percentages

Funding Sources Percentages			
Funding Source	Funding Source Amount		Percentage
City of Santa Barbara	$	5,649,346	79%
Reclamation Grant	$	1,500,000	21%
TOTALS	$	7,149,346	

B. Budget Proposal

Table 9 - Budget Proposal (Total Project Cost)

BUDGET ITEM DESCRIPTION	COMPUTATION		QTY TYPE	TOTAL COST
	$/UNIT	QTY		
Salaries and Wages				
Operator 1 - AMI End Pt Installation	$ 28.62	10000	hour	$ 286,200
Operator 1 - AMI Lid Installation	$ 28.62	3300	hour	$ 94,446
Fringe Benefits				
Operator 1 - AMI End Pt Installation	$ 20.61	10000	hour	$ 206,100
Operator 1 - AMI Lid Installation	$ 20.61	3300	hour	$ 68,013
Travel				
Trip 1 - N/A				$ -
Equipment				
Item A - N/A				$ -
Supplies and Materials				
Item A - N/A				$ -
Contractual/Construction				
AMI End Points	$ 4,011,762	1	lump sum	$ 4,011,762
AMI Fixed Network	$ 1,060,884	1	lump sum	$ 1,060,884
Data Center	$ 789,901	1	lump sum	$ 789,901
Vendor Services	$ 392,040	1	lump sum	$ 392,040
Third-Party Contributions				
Contribution A - N/A				$ -
Other				
Public Outreach	$ 60,000	1	lump sum	$ 60,000
AMI Implementation Consultant	$ 180,000	1	lump sum	$ 180,000
TOTAL DIRECT COSTS				$ 7,149,346
Indirect Costs				
Type of rate - N/A				$ -
TOTAL ESTIMATED PROJECT COSTS				$ 7,149,346

C. Budget Narrative:

The following narrative provides a brief explanation for each of the line item cost amounts encompassed in Table 9 – Budget Proposal (Total Project Cost), and in Table 10 - AMI Procurement and Implementation (Construction Contract Estimate):

1) Salaries and Wages

Salaries and wages are included for City employees to perform the installation of the AMI end points and meter box lids. The budgetary cost is based on Water Distribution Operator I personnel performing the work. The City of Santa Barbara pays this level of employee up to $28.62 per hour.

2) Fringe Benefits

Fringe Benefit costs are included for City employees to perform the installation of the AMI end points and meter box lids. The budgetary cost is based on Water Distribution Operator I, performing the work. The City of Santa Barbara pays this level of employee $20.61 per hour in fringe benefits.

3) Travel

No City of Santa Barbara personnel travel is anticipated.

4) Equipment

No equipment valued at $5,000 or greater is expected to be purchased directly by the City for this scope of work. No equipment is expected to be rented for this scope of work.

5) Materials and Supplies

The City of Santa Barbara is not expecting to directly procure any materials nor supplies. Materials are accounted for in the Contract/Contractual section.

6) Contract/Construction (Table 10 Items)

It is anticipated that the City of Santa Barbara may opt to execute multiple contracts to perform the following scope of work. The scope and breakout of the work is detailed in the City's Request For Proposals, Advanced Metering Infrastructure (Phase 2), see Attachment 10.

AMI Procurement and Implementation Contract Scope of Work

1) AMI Endpoints

AMI Endpoint Procurement (Item A): There are 27,246 meters in the City's service area. Replacement of existing meters with AMI compatible meters and registers has taken place (Phase 1 project) on all but 1,200 meters (25,046

meters replaced); this is part of a separate on-going project. An endpoint unit will be needed at every meter. An estimated 15,000 lids will be procured to accommodate the new endpoint units. Existing lids may be reusable in some cases. This item captures procurement of those items.

2) AMI Fixed Network

AMI Fixed Network (Item B): This item includes LAN Node/Data Collectors, LAN repeaters, WAN Communications Equipment, and WAN Communications Infrastructure. This item captures procurement, installation, and setup of the equipment.

3) Data Center

Data Center (Item C): This item includes AMI Headend Control System, Meter Data Management (MDM) System, and Software/Online Portal. This item captures costs related to implementing these portions of the scope of work.

4) Vendor Services

Vendor Services (Item D): This item includes general costs related to project management, design, other installation, testing, startup, training and documentation, and system interfaces services. This item captures these soft costs. However, it is expected that these costs will not be paid in a separate contract, but will be incorporated into Item B (AMI Fixed Network) and Item C (Data Center) contracts.

Reclamation will be notified of actual costs and vendor selections for these items as soon as they are available.

Please note that the City may elect to use City employees to perform installation of some of the field hardware equipment including, but not limited to, AMI endpoints, LAN Node/Data Collectors, LAN repeaters, and WAN Equipment & Infrastructure.

7) Third-Party In-Kind Contributions

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

8) Environmental and Regulatory Compliance Costs

The work is all above ground or in existing valve boxes. The City will be seeking a CEQA exemption and Coastal exemption. No environmental nor regulatory compliance costs are anticipated.

9) Other Expenses, Indirect Costs, Etc.

Public Outreach

The City intends to perform a public outreach to notify and educate customers about the new features and options available with the AMI system. A consultant will be hired to assist with the effort.

AMI Implementation Consultant

The City intends to hire an AMI consultant to help coordinate AMI installation, setup, and other project related issues.

10) Indirect Costs

No indirect costs are anticipated for the project.

11) Total Estimated Project Costs

The proposed project has a total estimated cost of $7,149,346.

D. Estimated Project Costs

Table 10 - AMI Procurement and Implementation

ITEM	DESCRIPTION	ITEM COST ESTIMATE	TOTAL COST ESTIMATE
A.1	AMI End Pts Procurement (27,246 units)	$ 3,531,762	
A.2	Meter Lids (15,000 Lids) Assume 5/8" and 1" lids @ $32	$ 480,000	
A	AMI Endpoints:		$ 4,011,762
B.1	LAN Node/Data Collector	$ 632,610	
B.2	LAN Repeater	$ 303,534	
B.3	WAN Communications Equipment	$ 35,640	
B.4	WAN Communications Infrastructure	$ 89,100	
B	AMI Fixed Network:		$ 1,060,884
C.1	AMI Headend Control System	$ 136,501	
C.2	Meter Data Management System	$ 356,400	
C.3	Software/Portal	$ 297,000	
C	Data Center:		$ 789,901
D.1	Project Mgmt, Design, Installation, Testing, Startup, Training, Documentation	$ 320,760	
D.2	Systems Interfaces	$ 71,280	
D	Vendor Services:		$ 392,040
E.1	AMI Endpoints Installation (27,246 units)	$ 492,300	
E.2	Meter Lids Installation (15,000 Lids)	$ 162,459	
E	City of Santa Barbara - Employee Services:		$ 654,759
F.1	Public Outreach	$ 60,000	
F.2	AMI Implementation Consultant	$ 180,000	
F	Consultant Services:		$ 240,000
	SUB-TOTAL		$ 7,149,346
TOTAL PROJECT COST			$ 7,149,346
Indirect Costs			
Type of rate - N/A			$ -
TOTAL ESTIMATED PROJECT COSTS			$ 7,149,346

VII. Environmental and Cultural Resources Compliance (F.2.1 and H.1)

The following are the City's responses to the Environmental and Cultural Resource Considerations encompassed in FOA Section H.1:

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

The Project scope includes installing network communication equipment. Earth-disturbing activities would be minimal and/or non-existent.

- *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?*

No endangered or threatened species will be impacted by the project construction. All work will occur inside existing meter boxes and on existing utility poles There will be very minimal ground disturbing activities related to this work in the meter boxes.

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

There are multiple designated wetlands and surface waters under CWA jurisdiction within the City's water service area. See Attachment 12, Map of Designated Wetlands & Surface Waters Under CWA. However, the Project would not adversely impact these wetlands or surface waters as they are not within the AMI installation sites (inside meter boxes and on existing utility poles).

- *When was the water delivery system constructed?*

City Water Mains, for information on the City's water delivery system, including piping types, sizes, lengths, and approximate year of installation (see Table 1).

- *Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.*

The City's AMI project is not intended to modify or affect individual features of any irrigation system. The Project is centered on upgrades to water meters and will not involve downstream irrigation systems.

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

The Project would not modify or affect any buildings, structures, or features. Therefore, cultural resources and/or historical buildings would not be affected as a result of Project.

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

The City of Santa Barbara, originally settled by the Spanish in the 18th century, has many archeological sites and historic points of interest. There are approximately 2,700 buildings, homes, or other structures that are nearly 100 years old, and some that date back to 1780s. The City encompasses known previous Chumash Tribe settlements. There are archeological sites, where evidence and/or artifacts of pre-historic or historic activities are preserved, or thought to exist, throughout the City.

However, there are no known archeological sites at the proposed AMI equipment installation sites (i.e. inside meter boxes and on existing utility poles). The Project scope will not encompass any significant ground disturbance activities. The meter retrofit work will occur exclusively within existing customer meter boxes, which are regularly accessed by City crews. The network communication equipment will be installed exclusively on existing above grade utility structures.

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

The meter replacements and user portal costs would be funded through the Project would be available to all City water customers. This would include both low-income and minority populations. Given that the meter replacements are occurring in all areas of the City's service area, any potential impact or benefit would be distributed equally throughout the service area. No disproportionately high and adverse effects would occur on low income or minority populations in the City's service area. In fact, the program is intended to benefit such disadvantaged customers due to increased leak detection, improved access to water use data and billings, and potentially reduced water bills.

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

The City's AMI Project is not anticipated to impacts any Chumash Tribal lands, natural resources, or limit access sacred sites.

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

The City's AMI Project is not anticipated to contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area.

VIII. Required Permits or Approvals (D.2.2.6)

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

For the Project, the City intends to submit for a California Environmental Quality Act (CEQA) exemption and a Coastal Exemption for areas within the coastal zone. City of Santa Barbara Community Development Department has jurisdiction over these proposed exemptions. City Public Works staff will work with Community Development staff to obtain the proposed exemptions. No other permits nor approvals are anticipated.

IX. Letters of Support from Stakeholders (D2.2.7)

The City has received letters of support for the project from the following stakeholders. For copies of these letters see Attachment 7.

U.S. Congressman Salud Carbajal
360 S. Hope Ave, Suite C-301
Santa Barbara, CA 93105
Phone: 805.730.1710

Santa Barbara Community Environmental Council
Sigrid Wright, CEO
26 W Anapamu Street
Santa Barbara, CA 93101
Phone: 805.963.0583

Art Ludwig
City Water Customer
Ecological Systems Designer
Art@OasisDesign.net

There are no organizations, groups, or individuals known to oppose the Project nor the submission of this Grant funding application.

X. Official Resolution (D.2.2.8)

Due to timing of City Council meetings, the City is in the process of passing an official resolution authorizing this Grant application.

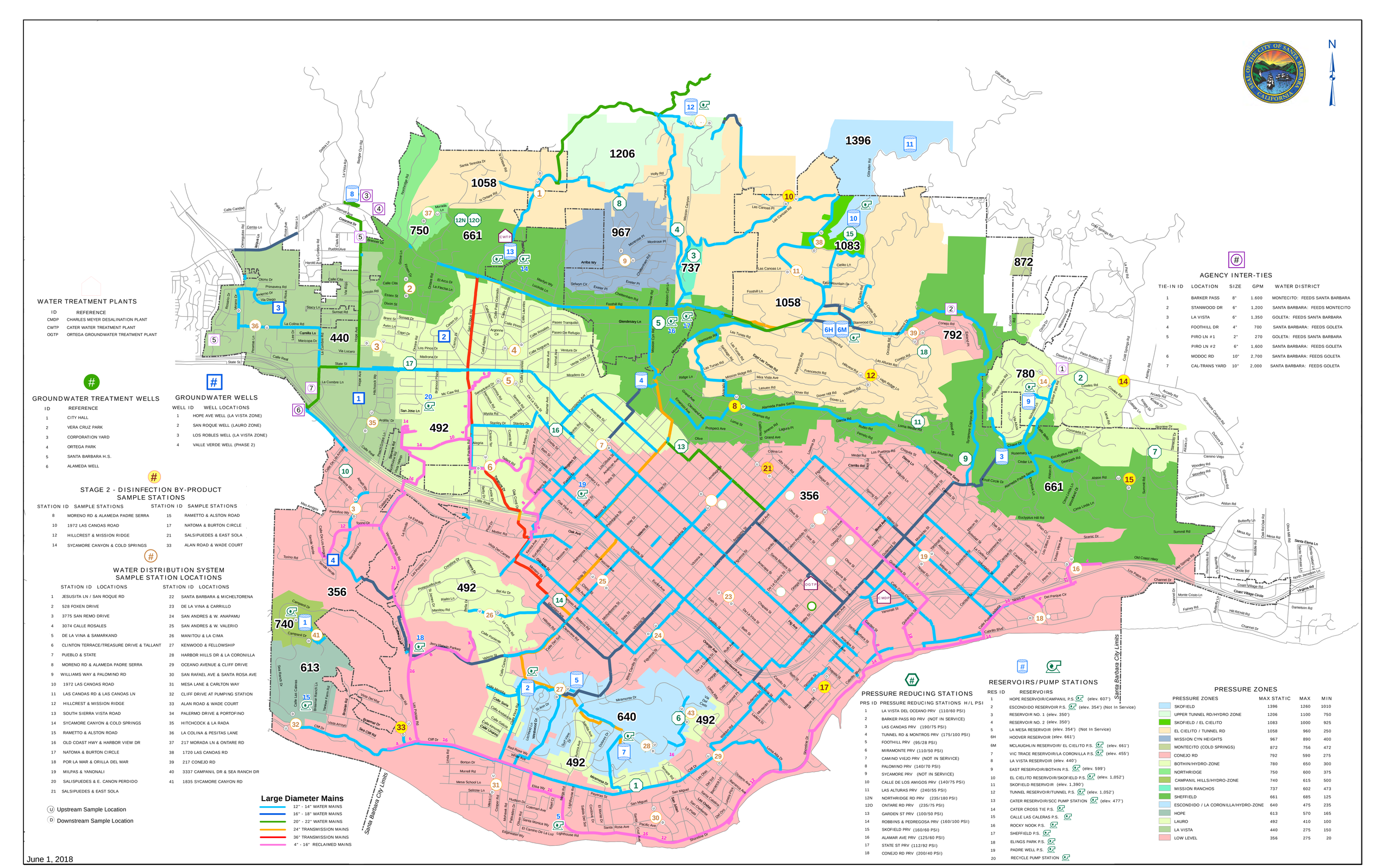
Note the following:

1. On October 1, 2019, it is anticipated that the City Council will pass a Resolution authorizing the City to apply for a WaterSmart WEEG grant.
2. A draft Council Resolution and Council Agenda Report are attached as Attachment 9, which verifies the following:
   - The official legal authority to enter into agreement
   - City Council support of the application
   - Capability of the applicant to provide the funding match
   - Willingness of the applicant to work with Reclamation to meet established deadlines for entering into a cooperative agreement
3. The final executed copy will be submitted to Reclamation within 30 days of the application submittal.

XI. Unique Entity Identifier & System of Award Management (D.3)

1. The City is registered in the System for Award Management (SAM)
2. Valid unique entity identifier – DUNS Number 062076765
3. The City will continue to maintain an active SAM registration with current information at all times during which it has an active Federal award or an application or plan under consideration by a Federal awarding agency.

City of Santa Barbara AMI Implementation Project - Phase 2 Preliminary Project Schedule	2019			2020											2021												2022											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
AMI Implementation Project - Phase 1 Meter Replacement																																					
Change Existing Meters to AMI Smart Meters (1,212 remain)																																					
Reclamation WaterSMART Grant FY2020																																					
Submit Application																																					
Grant Response																																					
Grant Funding Agreement Execution																																					
AMI Implementation Project - Phase 2 End Pt/Comm/Data Contract																																					
Finalize End Pt/Communication/Data RFP																																					
Bid Phase/Award																																					
Design - Comm Config/MDM/Portal																																					
Procure LAN & WAN Equipment																																					
Install LAN & WAN Equipment																																					
Implement Meter Data Management System																																					
Implement Portal																																					
End Point - Procurement (27,246 units)																																					
End Point - Installation (18-months)																																					
Deployment of MDM and Portal Services to Customers																																					
AMI Implementation Project - Phase 2 Other Services																																					
Public Outreach																																					
AMI Implementation Consultant																																					
AMI Implementation Project - Phase 2 Duration																																					
Project Duration - Scheduled to be completed within 24 months																																					



WATER TREATMENT PLANTS

ID	REFERENCE
CMDP	CHARLES MEYER DESALINATION PLANT
CWTP	CATER WATER TREATMENT PLANT
OGTP	ORTEGA GROUNDWATER TREATMENT PLANT

GROUNDWATER TREATMENT WELLS

ID	REFERENCE
1	CITY HALL
2	VERA CRUZ PARK
3	CORPORATION YARD
4	ORTEGA PARK
5	SANTA BARBARA H.S.
6	ALAMEDA WELL

GROUNDWATER WELLS

WELL ID	WELL LOCATIONS
1	HOPE AVE WELL (LA VISTA ZONE)
2	SAN ROQUE WELL (LAURO ZONE)
3	LOS ROBLES WELL (LA VISTA ZONE)
4	VALLE VERDE WELL (PHASE 2)

STAGE 2 - DISINFECTION BY-PRODUCT SAMPLE STATIONS

STATION ID	SAMPLE STATIONS	STATION ID	SAMPLE STATIONS
8	MORENO RD & ALAMEDA PADRE SERRA	15	RAMETTO & ALSTON ROAD
10	1972 LAS CANOAS ROAD	17	NATOMA & BURTON CIRCLE
12	HILLCREST & MISSION RIDGE	21	SALSIPUEDES & EAST SOLA
14	SYCAMORE CANYON & COLD SPRINGS	33	ALAN ROAD & WADE COURT

WATER DISTRIBUTION SYSTEM SAMPLE STATION LOCATIONS

STATION ID	LOCATIONS	STATION ID	LOCATIONS
1	JESUSITA LN / SAN ROQUE RD	22	SANTA BARBARA & MICHELTORENA
2	528 FOXEN DRIVE	23	DE LA VINA & CARRILLO
3	3775 SAN REMO DRIVE	24	SAN ANDRES & W. ANAPAMU
4	3074 CALLE ROSALES	25	SAN ANDRES & W. VALERIO
5	DE LA VINA & SAMARKAND	26	MANITOU & LA CIMA
6	CLINTON TERRACE/TREASURE DRIVE & TALLANT	27	KENWOOD & FELLOWSHIP
7	PUEBLO & STATE	28	HARBOR HILLS DR & LA CORONILLA
8	MORENO RD & ALAMEDA PADRE SERRA	29	OCEANO AVENUE & CLIFF DRIVE
9	WILLIAMS WAY & PALOMINO RD	30	SAN RAFAEL AVE & SANTA ROSA AVE
10	1972 LAS CANOAS ROAD	31	MESA LANE & CARLTON WAY
11	LAS CANOAS RD & LAS CANOAS LN	32	CLIFF DRIVE AT PUMPING STATION
12	HILLCREST & MISSION RIDGE	33	ALAN ROAD & WADE COURT
13	SOUTH SIERRA VISTA ROAD	34	PALERMO DRIVE & PORTOFINO
14	SYCAMORE CANYON & COLD SPRINGS	35	HITCHCOCK & LA RADA
15	RAMETTO & ALSTON ROAD	36	LA COLINA & PESITAS LANE
16	OLD COAST HWY & HARBOR VIEW DR	37	217 MORADA LN & ONTARE RD
17	NATOMA & BURTON CIRCLE	38	1720 LAS CANOAS RD
18	POR LA MAR & ORILLA DEL MAR	39	217 CONEJO RD
19	MILPAS & YANONALI	40	3337 CAMPANIL DR & SEA RANCH DR
20	SALISPUEDES & E. CANON PERDIDO	41	1835 SYCAMORE CANYON RD
21	SALSIPUEDES & EAST SOLA		

(U) Upstream Sample Location

(D) Downstream Sample Location

Large Diameter Mains

- 12" - 14" WATER MAINS
- 16" - 18" WATER MAINS
- 20" - 22" WATER MAINS
- 24" TRANSMISSION MAINS
- 36" TRANSMISSION MAINS
- 4" - 16" RECLAIMED MAINS

AGENCY INTER-TIES

TIE-IN ID	LOCATION	SIZE	GPM	WATER DISTRICT
1	BARKER PASS	8"	1,600	MONTECITO: FEEDS SANTA BARBARA
2	STANWOOD DR	6"	1,200	SANTA BARBARA: FEEDS MONTECITO
3	LA VISTA	6"	1,350	GOLETA: FEEDS SANTA BARBARA
4	FOOTHILL DR	4"	700	SANTA BARBARA: FEEDS GOLETA
5	PIRO LN #1	2"	270	GOLETA: FEEDS SANTA BARBARA
	PIRO LN #2	6"	1,600	SANTA BARBARA: FEEDS GOLETA
6	MODOC RD	10"	2,700	SANTA BARBARA: FEEDS GOLETA
7	CAL-TRANS YARD	10"	2,000	SANTA BARBARA: FEEDS GOLETA

PRESSURE REDUCING STATIONS

PRS ID	PRESSURE REDUCING STATIONS H/L PSI
1	LA VISTA DEL OCEANO PRV (110/60 PSI)
2	BARKER PASS RD PRV (NOT IN SERVICE)
3	LAS CANOAS PRV (190/75 PSI)
4	TUNNEL RD & MONTROS PRV (175/100 PSI)
5	FOOTHILL PRV (95/28 PSI)
6	MIRAMONTE PRV (110/50 PSI)
7	CAMINO VIEJO PRV (NOT IN SERVICE)
8	PALOMINO PRV (140/70 PSI)
9	SYCAMORE PRV (NOT IN SERVICE)
10	CALLE DE LOS AMIGOS PRV (140/75 PSI)
11	LAS ALTURAS PRV (240/55 PSI)
12N	NORTHRIDGE RD PRV (235/180 PSI)
12O	ONTARE RD PRV (235/75 PSI)
13	GARDEN ST PRV (100/50 PSI)
14	ROBBINS & PEDREGOSA PRV (160/100 PSI)
15	SKOFIELD PRV (160/60 PSI)
16	ALAMAR AVE PRV (125/60 PSI)
17	STATE ST PRV (112/92 PSI)
18	CONEJO RD PRV (200/40 PSI)

RESERVOIRS / PUMP STATIONS

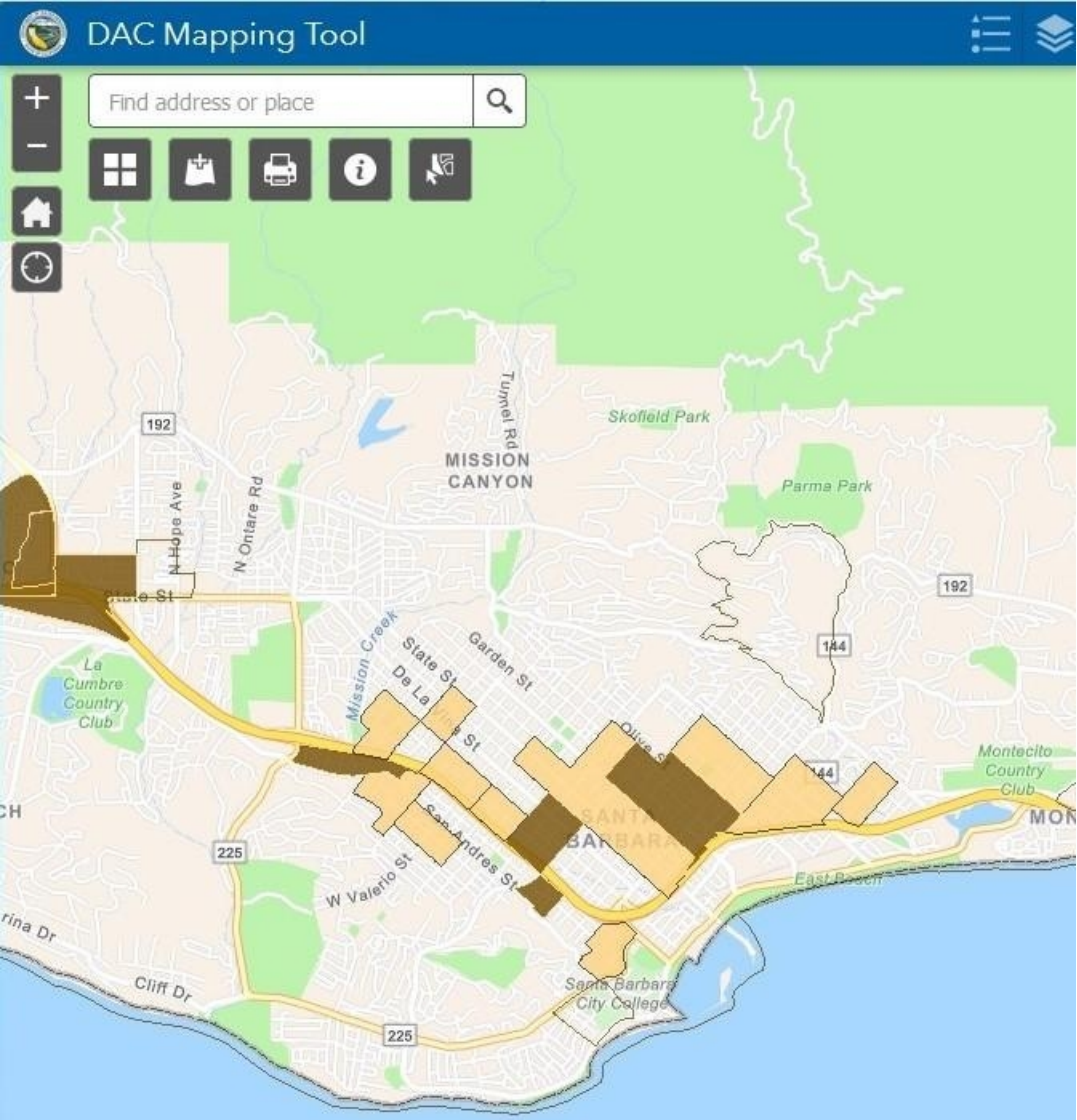
RES ID	RESERVOIRS
1	HOPE RESERVOIR/CAMPANIL P.S. (elev. 607')
2	ESCONDIDO RESERVOIR P.S. (elev. 354') (Not In Service)
3	RESERVOIR NO. 1 (elev. 350')
4	RESERVOIR NO. 2 (elev. 350')
5	LA MESA RESERVOIR (elev. 354') (Not In Service)
6H	HOOVER RESERVOIR (elev. 661')
6M	MCLAUGHLIN RESERVOIR/ EL CIELITO P.S. (elev. 661')
7	VIC TRACE RESERVOIR/LA CORONILLA P.S. (elev. 455')
8	LA VISTA RESERVOIR (elev. 440')
9	EAST RESERVOIR/BOTHIN P.S. (elev. 599')
10	EL CIELITO RESERVOIR/SKOFIELD P.S. (elev. 1,052')
11	SKOFIELD RESERVOIR (elev. 1,390')
12	TUNNEL RESERVOIR/TUNNEL P.S. (elev. 1,052')
13	CATER RESERVOIR/SCC PUMP STATION (elev. 477')
14	CATER CROSS TIE P.S.
15	CALLE LAS CALERAS P.S.
16	ROCKY NOOK P.S.
17	SHEFFIELD P.S.
18	ELINGS PARK P.S.
19	PADRE WELL P.S.
20	RECYCLE PUMP STATION

PRESSURE ZONES

PRESSURE ZONES	MAX STATIC	MAX	MIN
SKOFIELD	1396	1260	1010
UPPER TUNNEL RD/HYDRO ZONE	1206	1100	750
SKOFIELD / EL CIELITO	1083	1000	925
EL CIELITO / TUNNEL RD	1058	960	250
MISSION CYN HEIGHTS	967	890	400
MONTECITO (COLD SPRINGS)	872	756	472
CONEJO RD	792	590	275
BOTHIN/HYDRO-ZONE	780	650	300
NORTHRIDGE	750	600	375
CAMPANIL HILLS/HYDRO-ZONE	740	615	500
MISSION RANCHOS	737	602	473
SHEFFIELD	661	685	125
ESCONDIDO / LA CORONILLA/HYDRO-ZONE	640	475	235
HOPE	613	570	165
LAURO	492	410	100
LA VISTA	440	275	150
LOW LEVEL	356	275	20

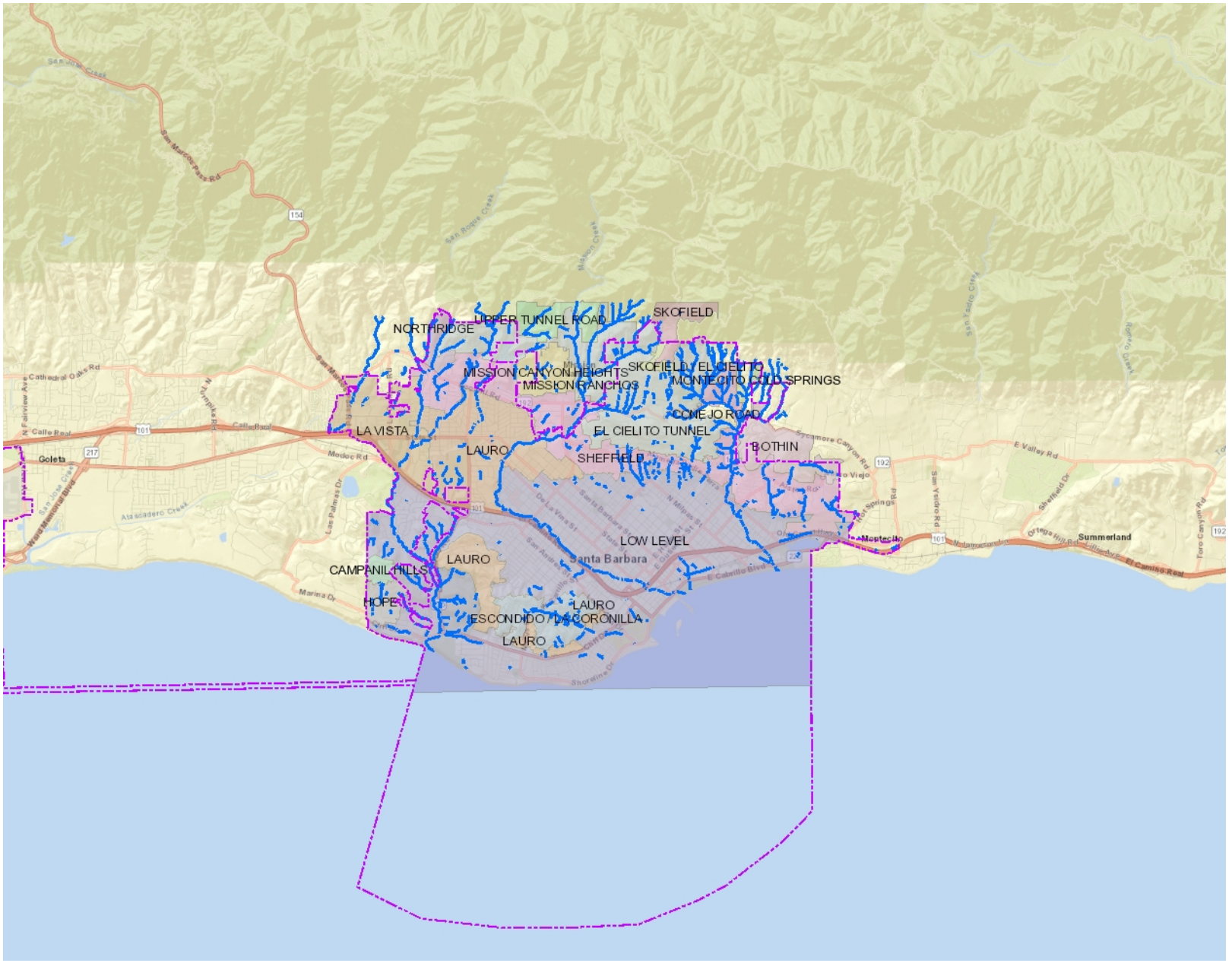
June 1, 2018

M:\Administrative_Services\Information_Systems\GIS\Collaboration\GIS Tasks\Public Works\Water Distribution\Water System Map.mxd



US Census Bureau | U.S. Bureau of Reclamation, California Department of Conservation, California Department of Fish and Game, California Department of Forestry and Fire Protection, National Oceanic and Atmospheric Administration | Esri, HERE, Garmin, INCREMENT P, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA

Hydrography Map - Creeks w/ Pressure Zone Overlay



Legend

- City Limits
- Creeks

Pressure Zones

- BOTHIN
- CAMPANIL HILLS
- CONEJO ROAD
- EL CIELITO TUNNEL
- ESCONDIDO / LA CORONILLA
- GIBRALTOR
- HOPE
- LA VISTA
- LAURO
- LOW LEVEL
- MIRA MONTE
- MISSION CANYON
- MISSION CANYON HEIGHTS
- MISSION RANCHOS
- MONTECITO COLD SPRINGS
- NORTHRIDGE
- NOT APPLICABLE
- SHEFFIELD
- SKOFIELD
- SKOFIELD / EL CIELITO
- UNKNOWN
- UPPER TUNNEL ROAD

World Street Map

1: 139,625

23,270.762 0 11,635. 23,270. Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere

Reported on 09/19/2019 03:35 PM

MAP DISCLAIMER

This service has been provided to allow a visual display of City information. Every effort has been made to ensure the accuracy of the map and data. The City of Santa Barbara assumes no responsibility arising from the use of this information. THE MAPS AND ASSOCIATED DATA ARE PROVIDED WITHOUT A WARRANTY OF ANY KIND. This map was created using the City of Santa Barbara Mapping Analysis and Printing System application.

Notes

SALUD O. CARBAJAL
24TH DISTRICT, CALIFORNIA
WEBSITE: CARBAJAL.HOUSE.GOV

COMMITTEE ON ARMED SERVICES
SUBCOMMITTEE ON
TACTICAL AIR AND LAND FORCES
SUBCOMMITTEE ON READINESS
COMMITTEE ON THE BUDGET

Congress of the United States
House of Representatives
Washington, DC 20515

212 CANNON HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225–3601

360 SOUTH HOPE AVENUE, C–301
SANTA BARBARA, CA 93105
(805) 730–1710

1411 MARSH STREET, SUITE 205
SAN LUIS OBISPO, CA 93401
(805) 546–8348

October 3, 2019

US Department of the Interior
Bureau of Reclamation
Denver Federal Center
6th & Kipling, Bldg 67
Denver, CO 80225

RE: Support for City of Santa Barbara Water Department Advanced Metering Infrastructure (AMI) Project

To Whom it May Concern:

I am writing to express my support for the City of Santa Barbara's proposed AMI Project. The project will promote water conservation for customers and provide new infrastructure management tools to the City.

I am supportive of this project because of the lessons learned from other similar projects. The project will be valuable to help meet the greater water management goals of the overall region and state. The project will provide tools to better communicate to customers the patterns and impact of their water demand, as well as providing better insight to water managers on how to account for non-revenue water, which places an unnecessary financial and supply burden to the utility, and ultimately, their customers.

Benefits of automated metering have been well documented and include:

- Enabling early leak detection,
- Supplying customers with information to reduce water use,
- Providing more accurate water rates,
- Curbing overall water demand, and
- Improving ability to conduct preventative maintenance

Water conservation is an important element for all water providers. Water conservation efforts, such as this project, can help minimize the impact of water shortages, a win for everyone in the region. In addition, as a whole, we can build on the water conservation lessons learned to benefit us all.

I urge you to give your full and fair consideration to the City of Santa Barbara, consistent with all relevant rules and regulations. If you have any questions or concerns, please feel

free to contact Jesse Ebadi in my Santa Barbara District Office at 805-730-1710. Thank you in advance for your consideration to this matter.

Sincerely,

SALUD CARBAJAL
Member of Congress

Community Environmental Council

26 West Anapamu St., 2nd Floor, Santa Barbara, CA 93101
tel: 805.963.0583 fax: 805.962.9080 • www.cecsb.org

September 19, 2019

RE: Support for City of Santa Barbara Water Resources Division Advanced Metering Infrastructure (AMI) Project

To Whom it May Concern:

I am writing to express my support for the City of Santa Barbara's proposed AMI Project. The project will promote water conservation for the customer and provide new infrastructure management tools to the City.

The Community Environmental Council is supportive of this project due to the lessons learned from similar projects. The project will be valuable to help meet the greater water management goals of the overall region and state. The project will also provide tools to better communicate to customers the patterns and impact of their water demand, as well as providing better insight to water managers on how to account for non-revenue water, which places an unnecessary financial and supply burden to the utility, and ultimately, their customers.

The benefits of automated metering have been well documented and include:

- Enabling early leak detection
- Supplying customers with information to manage water use
- Curbing overall water demand
- Improving ability to conduct preventative maintenance

Water conservation is an important element for the City of Santa Barbara. Water conservation efforts, such as this project, can help minimize the impact of water shortages, a win for everyone in the region. And as a whole, we can build on the water conservation lessons learned to benefit us all.

Your consideration of this project is greatly appreciated.

Sincerely,

Sigrid Wright, CEO

September 25th, 2019

RE: Support for City of Santa Barbara Water Resources Division Advanced Metering Infrastructure (AMI) Project

To Whom it May Concern:

I am writing to express my support for the City of Santa Barbara's proposed AMI Project. You cannot manage what is not measured. Conversely, with precise measurement, you can have truly optimized management.

I have been working in the field of water efficiency, alternate supply, and reuse for 38 years. Based on my experience, I estimate that residential water use could be reduced by 50-85% below present levels with a combination of good data, billing reform, and the innovation these two would drive.

Santa Barbara is a natural choice for this pioneering work for many reasons. Santa Barbara—

- **Was the largest community in Southern California to rely solely on local water sources** for many years
- **The financial and climate incentives to reduce Santa Barbara's marginal water use are exceptionally high**, with our most carbon and cash intensive sources costing an order of magnitude more than our base supply.
- **Has a history of pioneering water innovation**; the Residential End Uses of Water study, prior to which no one had much idea at all what happened to water after it went through the meter; greywater best practices and regulations; drastic and permanent community-wide conservation during the drought of the 1990s, etc.

I have tried all sorts of things to measure water. As a participant in the City AMI pilot, I have experienced from my armchair the benefit of far better data than I have ever been able to get by any degree of heroic meter-reading effort.

This brings me to the possible benefits of Very Advanced Metering Infrastructure, which I would highly encourage your organization or anyone else to vigorously pursue. Benefits of automated metering have been well documented and include:

- **Data on fixture by fixture downstream consumption** inferred from sensor data at the meter
- **Integrated, all-water data and control** to inform optimal management of rainwater, stormwater, manage all irrigation, alternate supply and water reuse.
- **Improved analytics and customer information** from a wall-mounted tablet and smart phone/computer app, which could inform next-level conservation

Water efficiency and understanding efforts, such as this project, can help minimize the impact of water shortages, and lower the climate cost of water, a win for everyone in the region. Your consideration of this project is greatly appreciated.

Sincerely,

Art Ludwig
Ecological Systems Designer
Art@OasisDesign.net

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0
American Water Works Association.

? Click to access
+ Click to add a comment

Water Audit Report for: City of Santa Barbara
Reporting Year: 2019 7/2018 - 6/2019

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: ACRE-FEET PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

<---------- Enter grading in column 'E' and 'J' ---------->

Master Meter and Supply Error Adjustments

WATER SUPPLIED				Pcnt:	Value:	
Volume from own sources:	7	9,663.810	acre-ft/yr	3		acre-ft/yr
Water imported:		0.000	acre-ft/yr			acre-ft/yr
Water exported:		0.000	acre-ft/yr			acre-ft/yr
WATER SUPPLIED:		**9,663.810**	acre-ft/yr			

Enter negative % or value for under-registration
Enter positive % or value for over-registration

AUTHORIZED CONSUMPTION

Click here: ? for help using option

				Pcnt:	Value:	
Billed metered:	8	8,581.690	acre-ft/yr			
Billed unmetered:		0.000	acre-ft/yr			
Unbilled metered:	9	117.960	acre-ft/yr			
Unbilled unmetered:	8	8.727	acre-ft/yr		8.727	acre-ft/yr
AUTHORIZED CONSUMPTION:		**8,708.377**	acre-ft/yr			

Use buttons to select percentage of water supplied **OR** value

WATER LOSSES (Water Supplied - Authorized Consumption) **955.433** acre-ft/yr

Apparent Losses

				Pcnt:	Value:	
Unauthorized consumption:		24.160	acre-ft/yr	0.25%		acre-ft/yr
Customer metering inaccuracies:	7	77.380	acre-ft/yr		77.380	acre-ft/yr
Systematic data handling errors:		21.454	acre-ft/yr	0.25%		acre-ft/yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: **122.994** acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **832.439** acre-ft/yr

WATER LOSSES: **955.433** acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: **1,082.120** acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	9	319.5	miles
Number of active AND inactive service connections:	5	27,162	
Service connection density:		85	conn./mile main

Are customer meters typically located at the curbstop or property line? Yes

Average length of customer service line: (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure: 4 119.5 psi

COST DATA

Total annual cost of operating water system:	10	$59,839,946	$/Year
Customer retail unit cost (applied to Apparent Losses):	9	$13.39	$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	5	$520.00	$/acre-ft

☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 73 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Volume from own sources
2: Variable production cost (applied to Real Losses)
3: Unauthorized consumption

RESOLUTION NO. _____

A RESOLUTION OF THE COUNCIL OF THE CITY OF SANTA BARBARA AUTHORIZING THE PUBLIC WORKS DIRECTOR TO SUBMIT AN APPLICATION AND COMMIT THE CITY TO THE FINANCIAL AND LEGAL OBLIGATIONS ASSOCIATED WITH RECEIVING FUNDING UNDER THE FEDERAL BUREAU OF RECLAMATION WATERSMART WATER AND ENERGY EFFICIENCY GRANTS PROGRAM

WHEREAS, the City operates a robust conservation program utilizing industry best management practices to educate and inform customers or water saving opportunities;

WHEREAS, Advanced Metering Infrastructure will further the City's conservation goals by providing customers with data about their water consumption and individual use patterns to help them conserve;

WHEREAS, it is in the best interest of the City to seek grant funding to lessen financial impacts to the City's water customers; and

WHEREAS, within 30 calendar days of the grant application due date, the Federal Bureau of Reclamation (Bureau) requires the passage of an official resolution from an applicant's governing body to certify applications for the WaterSMART Water and Energy Efficiency Grants Program.

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF SANTA BARBARA AS FOLLOWS:

SECTION 1. The City of Santa Barbara Water Resources Division has the capability and financial and/or in-kind resources, as provided for in the adopted operating budget and six-year Capital Improvement Program, to match the Bureau maximum grant award amount of $1,500,000.

SECTION 2. The City of Santa Barbara will work in good faith to meet established deadlines for entering into a grant or cooperative agreement.

SECTION 3. The Public Works Director, or designee, is recognized as supporting the application for Bureau grant money, and is hereby authorized and directed to prepare the necessary data, conduct investigations, request such funding, and commit the City to financial and legal obligations associated with the execution of a grant agreement with the Bureau.

CITY OF SANTA BARBARA

COUNCIL AGENDA REPORT

AGENDA DATE: October 1, 2019

TO: Mayor and Councilmembers

FROM: Water Resources Division, Public Works Department

SUBJECT: Resolution Authorizing Federal Bureau Of Reclamation Grant Application For Advanced Metering Infrastructure

RECOMMENDATION:

That Council adopt, by reading of title only, a Resolution of the Council of the City of Santa Barbara Authorizing the Public Works Director to Submit an Application and Commit the City to the Financial and Legal Obligations Associated with Receiving Funding under Under the Federal Bureau of Reclamation WaterSMART Water and Energy Efficiency Grants Program.

DISCUSSION:

Water Resources staff is seeking grant funding from the Federal Bureau of Reclamation (Bureau) for the Advanced Metering Infrastructure (AMI) capital project. AMI is the technology of automatically collecting water usage data from water meters, and transferring the data over a secure network to a central database. The collected data is used for identifying leaks, analyzing trends, troubleshooting problems, billing customers, and providing customers with current information about their consumption rates and use patterns. This timely information, coupled with analysis, can help both the water utility and its customers better manage the use and consumption of water supplies.

The City's 27,000 water meters are currently read monthly by four Water Distribution Operators. AMI will reduce the need for meter readers in the field, create efficiencies with meter reading accuracy and timeliness, and greatly reduce vehicle costs and fuel consumption related to meter reading. The Water Distribution Operator positions can be assigned new duties supporting meter and AMI system testing and maintenance, and customer service.

Importantly, AMI offers significant benefits in managing the City's water system with regard to leak detection, consumption patterns, and troubleshooting the water system. AMI will also provide customers with current data about their water consumption and individual use patterns to help them conserve water. However, AMI will require a large capital investment of approximately $6 million. In an effort to offset the City's capital costs associated with implementation of AMI, staff is seeking grant funding from the WaterSMART Water and

Energy Efficiency Grants Program (WEEG). The objective of WEEG is to leverage local funds by cost sharing with the Bureau on projects that conserve and use water and energy more efficiently. AMI projects are regularly funded from this program and can be awarded a maximum of $1.5 million for high-scoring projects.

BUDGET/FINANCIAL INFORMATION:

AMI is currently budgeted in the Adopted Two-Year Financial Plan for Fiscal Years 2020 and 2021, which demonstrates the City's commitment to meeting the funding match requirements of WEEG. Should the City be successful in securing grant funding, Water Resources staff will reprogram the AMI funding to accelerate other high-priority projects, such as water main replacements.

SUSTAINABILITY IMPACT:

AMI is a proven water conservation tool. By providing customers with information about their daily water consumption and use patterns, they can better manage their water use and are more likely to conserve water. Additionally, AMI data can help staff better manage the water system by quickly finding leaks, identifying water waste, and easily determining if customers are conserving water.

ENVIRONMENTAL REVIEW:

The application for grant funding for AMI equipment is not subject to the California Environmental Quality Act.

PREPARED BY: Joshua Haggmark, Water Resources Manager/MBH/js

SUBMITTED BY: Rebecca J. Bjork, Public Works Director

APPROVED BY: City Administrator's Office