

**Project Name:**  
City of Oceanside  
**Advanced Metering Infrastructure Phase III  
& Distribution System Leak Detection and Improvement  
Project**

Prepared For:



**U.S. Department of the Interior - Bureau of Reclamation  
WaterSMART Grants:  
Water and Energy Efficiency Grants Fiscal Year 2021  
Funding Opportunity Announcement No. BOR-DO-21-F001**

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## 7 Technical Proposal

### 7.1 Executive Summary

**Date:** September 17, 2020

**Applicant Name:** City of Oceanside

**City, County, State:** Oceanside, San Diego, California

**Project Name:** City of Oceanside AMI Phase III & Distribution System Leak Detection and Improvement Project

**Funding Group:** Group 2

**Grant Funding Request:** \$2,000,000

**Non-Federal Matching Funds:** \$3,669,548

**Total Project Costs:** \$5,669,548

**Est. Project Schedule:** 4/2021 – 3/2024

**Est. Duration from contract award date:** Approximately 36 months

**Federal Facility Denotation:** The Project is not located on a federal facility

**Estimated Annual Water Savings:** 1,121 Acre Feet per Year (AFY)

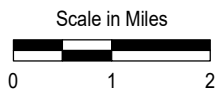
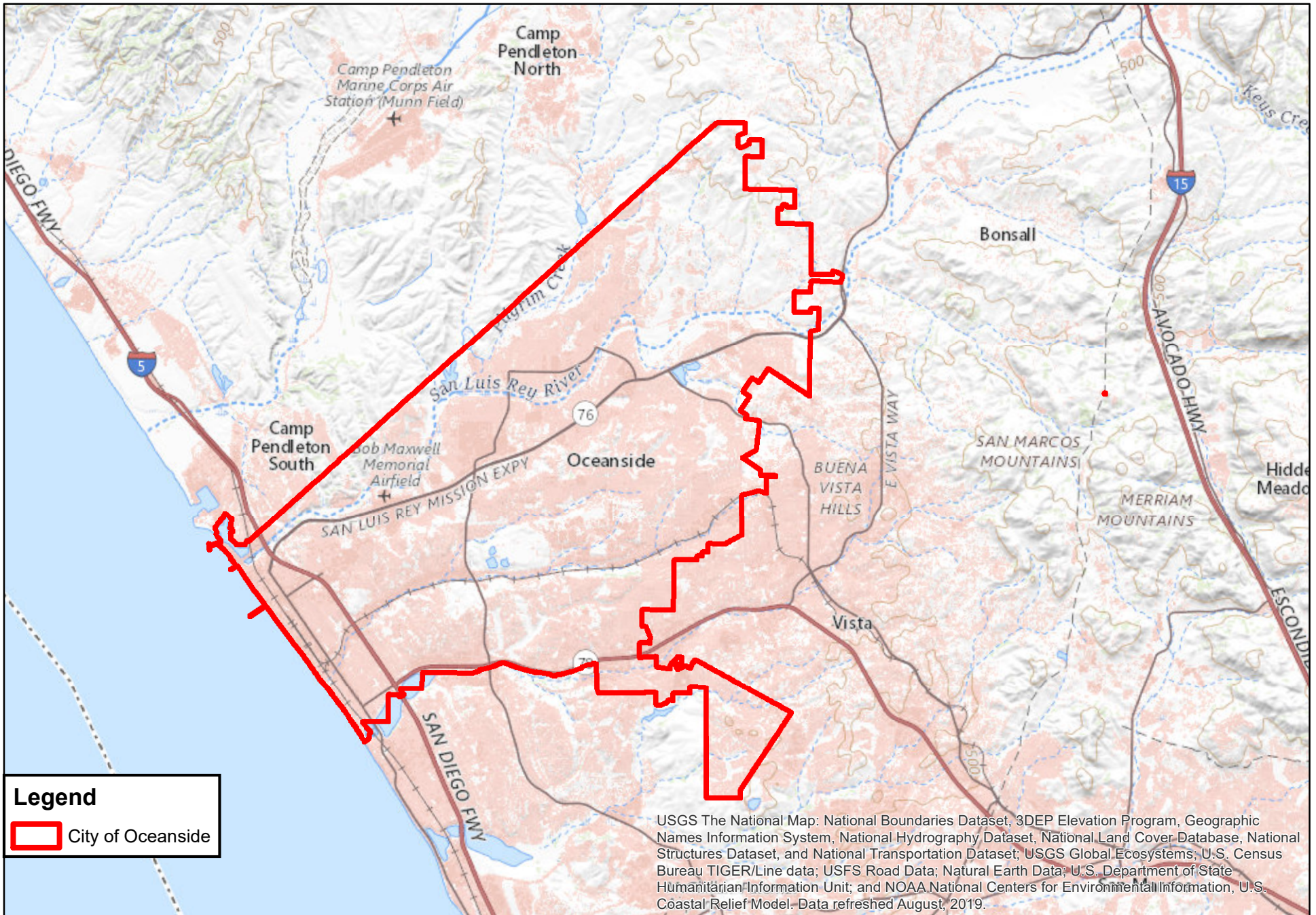
**Project Partner:** None

#### *Project Summary*

The City of Oceanside (City) is responsible for providing reliable, high quality water to its 178,000 residents through approximately 44,500 metered connections and is charged with the operation and maintenance of 590 miles of water transmission and distribution pipeline network. The City's Water Utilities Department is committed to aggressively pursuing water use efficiency and embraces proven methods and technologies to achieve that goal. To that end, the "AMI Phase III & Distribution System Leak Detection and Improvement Project" (Project) will pursue a best management practice to facilitate the reduction in end-user water consumption implementation of via advanced metering infrastructure (AMI) and social norming customer engagement. Additionally, the Project will reduce water loss through the efficient identification of leaks and upgrades to the City's distribution system pipelines. The Project, located wholly in the City of Oceanside service area, consists of two elements: the first element is the AMI Phase III which includes the upgrade of approximately 11,519 existing meters to AMI-compatible "smart meters" that will result in the connection of nearly 26% of the City of Oceanside (City) meters to the AMI network and customer engagement portal, enabling early leak detection capabilities, quicker leak repair and water consumption behavior modification. The second element is the Distribution System Leak Detection and Improvements which will utilize satellite leak detection technology to enable the efficient location of pipeline leaks and implement upgrades to reduce water loss throughout the distribution system. Anticipated annual water savings from the Project is 1,121 AFY.

## 7.2 Project Location

The City is located 35 miles north of the City of San Diego and encompasses approximately 42 square miles. It is bordered to the north by Marine Corps Base Camp Pendleton, to the south by the cities of Carlsbad and Vista, to the east by unincorporated San Diego County, and to the west by the Pacific Ocean. See Figure 7.2-1 for a Project Location Map. Smart meters and satellite leak detection technology will be employed throughout the City's service area.



Date of Exhibit: 9/14/2020  
 DigitalGlobe Aerial Image:

**USBR WaterSMART: Water and Energy Efficiency Grants FY 21**  
 City of Oceanside AMI Phase III & Distribution System Leak Detection  
 and Improvement Project  
 Figure 7.2-1 Project Location Map

### 7.3 Technical Project Description

The Project is comprised of two elements. The first is element is the “**AMI Phase III**” initiative which includes replacement of existing end-user water meters with AMI-compatible smart meters and installation of AMI network and infrastructure components. Phase III represents the final stage of the City’s AMI implementation effort. At conclusion, the AMI system will be 100% complete and fully functional on a City-wide basis. The second element of the Project is the “**Distribution System Leak Detection and Improvement**” initiative which employs satellite technology to identify hard-to-detect and significant water leaks in the potable water distribution system, and includes a pipeline upgrade program to eliminate the leaks identified via satellite.

#### **AMI Phase III**

The scope of work for this element of the Project includes installation of approximately 26% of the meters in the service area (11,519 of 44,500 meters) and installation of AMI network and infrastructure components. With the completion of Phase III, 100% of the City’s meters will be upgraded to smart meters and connected to the AMI system, enabling the wireless transmission of water use data from the smart meters to the City’s back-end AMI system and to customers via a web/cloud-based access portal on a near real-time basis (raw data can be collected every 15 minutes, which then may be averaged at an increment to be determined).

The City will benefit from the AMI system by gaining the ability to utilize frequent and on-demand reports fed from AMI smart meters, providing up to date reporting on water use anomalies. and point to opportunities to work with customers to reduce water waste. Whereas consumption data is currently collected and made available via monthly or bi-monthly manual meter reads, AMI will make this data available at any time for the City to analyze water use patterns as frequently as needed. Additionally, real time consumption data will be integrated into the City’s web based “WaterSmart” customer engagement portal, enabling customers to gain the powerful capability to track daily water usage and make comparisons to historical consumption. Further, the WaterSmart portal allows customers to compare their own usage patterns to that of similar households and businesses, further motivating continued or increased water-use efficient behavior. Recent studies (discussed in further detail below) link the use of AMI, the availability of real time water consumption data, and the behavioral impacts derived from comparative water consumption analytics to quantifiable water savings. Rather than the traditional delayed data feedback loop that relies upon monthly or bi-monthly manual water

***Rather than the traditional, delayed data feedback loop that relies upon monthly or bi-monthly manual water meter reads, AMI delivers real-time data to customers and the City (via alarms, alerts, reports and email notifications), enabling early detection of leaks and abnormally high water consumption, thus reducing lag times to address and correct water waste.***

***The Social Norms Based model employed by the WaterSmart portal is an approach that has been proven to encourage customers to engage in water efficient behaviors leading to a quantified reduction in water consumption.***

meter reads, AMI delivers real-time data to customers and the City (via alarms, alerts, reports and email notifications), enabling early detection of leaks and abnormally high water consumption, thus reducing lag times to address and correct water waste. The WaterSmart customer portal employs “social norms marketing”, commonly used in efficiency programs to effectively motivate behavioral change. The Social Norms Based model used by the WaterSmart portal is an approach that has been proven to encourage customers to engage in water efficient behaviors leading to a quantified reduction in water consumption. By comparing current water use against their own past consumption and by comparing their own use against consumption of similar

households/businesses, customers are motivated to perform better, or continue performing well by comparison. More on the WaterSmart software can be found at: <https://www.watersmart.com/ami-solutions/>.

The City will roll out a customer-oriented outreach campaign and education program on the AMI system and cloud-based “WaterSmart” customer engagement portal (outside the scope of this project). The program will educate customers about the portal’s dashboard, where real-time water usage data provided by the AMI system and billing details can be viewed. The outreach campaign will inform customers about the availability of enhanced data as well as the functionality of portal-based tools to assist them in monitoring, measuring, and comparing water consumption.

The Phase III element included in this grant proposal is the final phase of the City’s AMI implementation effort and is separate but additive to Phase I and Phase II. USBR awarded the City’s AMI Phase I Project with \$1.5 million from the WaterSMART WEEG FY 2019 funding cycle. The City was also fortunate enough to be awarded \$1.5 million in grant funding from the WaterSMART WEEG FY2020 funding cycle. The scope and costs associated with Phase I and Phase II do not overlap with the scope or budget included in Phase III. Phases I and II include installation of the AMI network and infrastructure components and the retrofit of approximately 33,118 existing meters to AMI-compatible smart meters that will connect nearly 74% of the City’s meters to the AMI network.

### **Distribution System Leak Detection and Improvements**

The scope of work for this element of the Project includes utilizing satellite technology and proprietary algorithms to identify leaks in the potable water distribution system with a high level of efficacy, and then upgrading those existing leaky pipes (mostly asbestos concrete and metal pipe segments) with PVC pipe.



The City currently employs a leak detection protocol that is heavily reliant on visual observation and customer reporting. The protocol requires field crews to respond to a reported leak and walk a selected water main investigation area to perform visual inspections and use acoustic equipment to listen for potential leaks along the line. When a leak is acoustically detected, a second correlating acoustical device is connected to the water feature to triangulate the leak location. Crews then dig at that site to reveal and repair the leak. This is a reactive process that is extremely time and labor intensive, making it infeasible to perform these investigations at a city- or system-wide level. Traditional leak detection practices require experienced leak detection professionals to perform limited/focused investigations on portions of a utility’s system that is anecdotally thought to have leaks – a somewhat rudimentary hit or miss approach. As referenced in the January/February 2019 article by Paul Gagliardo, titled “Proof Through Pilot Testing” in *Water Efficiency*, satellite-based leak detection method identifies a greater number of leaks in a shorter timeframe and with minimal staff when compared to traditional leak detection methods. Further, the satellite approach eliminates the heavy reliance on field crew used to “walk and listen” to a certain percentage of the system’s mains each year to identify leaks, assuming a utility’s budget allows for such activities. The use of satellite technology offers a comparatively refined approach to leak detection that does not require crews to acoustically distinguish between leaks and legitimate water use, if both are occurring at the same time, which can be misleading and result in costly inaccuracies, should crews dig to find no presence of a leak.

Utilis, Inc. will conduct the satellite detection and analysis effort by creating 30-mile-wide by 40-mile-long satellite images of the City service area to identify and analyze underground soil moisture and plumes of saturated soils within the water distribution system piping network. Each water source (e.g., drinking water, sewage, untreated water, seas, lakes, swimming pools, etc.) possesses a unique dielectric constant which can be distinguished through the application of proprietary algorithms. Soil saturated with drinking water has a specific signature in the satellite imagery data that can be isolated to detect and locate leaks in potable water distribution systems. This satellite leak detection method detects signals of potable water up to six feet underground and it is not impacted by surface conditions such as pavement or landscaping. Ultimately, the development and analysis of a GIS-based map indicating the likely location of potable water pipeline leaks will direct the City’s inspection teams to pinpoint leak locations in the distribution system with a high level of efficacy.

***Efficiencies gained using satellite leak detection will allow the City to utilize its budget to identify more leaks, more effectively, and more quickly, and then reduce water waste by upgrading the leaking segment of pipe.***

The approach to finding leaks proposed in the Project is analogous to a doctor performing triage on a patient to determine where the most acute problems are located. The entire water system is scanned and only the most likely leaking locations are identified for further field inspection and repair. This amounts to 5 -10% of the total length of pipe, therefore reducing the area needed to inspect. Efficiencies gained using satellite

leak detection will allow the City to utilize its budget to identify more leaks, more effectively, and more quickly, and then reduce water waste by upgrading the leaking segment of pipe. The Utilis proposal is included as Attachment D, which provides additional details on the satellite leak detection work plan.

The true value of satellite leak detection comes from finding more leaks system-wide and then fixing the distribution system to eliminate non-revenue water loss. The scope of work for this project includes replacing the existing segment of leaking pipeline with PVC pipe. Nearly two-thirds of the City's existing pipeline infrastructure is comprised of asbestos cement pipeline (ACP), which is more susceptible to leaks and breaks when it is exposed or when construction occurs nearby. PVC is considered a superior pipe material over asbestos concrete as it is not susceptible to rust, corrosion, or degradation over time. The average length of a PVC pipe segment is 20 feet. As such, approximately 20 feet of existing pipeline will be upgraded with PVC pipe at each leak site. An estimated 62 leaks will be identified and eliminated, therefore a total of approximately 1,240 linear feet of PVC pipeline will be installed. Additional information about the cumulative pipeline segment replacement effort and associated water savings is included in the next section of this proposal.

## Evaluation Criteria

### 7.3.1 Evaluation Criterion A - Quantifiable Water Savings

The Project is considered a **municipal metering project and a pipeline upgrade project** according to the WaterSmart WEEG FOA. Please see **Section 7.3.5.2** for a discussion of performance measures and proposed methods of measuring water savings that result from the Project.

#### *Describe the Amount of Estimated Water Savings from the Project.*

#### *Support/Documentation and Assumptions Regarding Estimated Water Savings*

##### Water Savings Derived from AMI

Water savings from the AMI portion of the Project will be achieved by installing 11,519 smart meters, connecting them to the existing AMI infrastructure and making real time water consumption data available through the City's web-based customer engagement portal known as the WaterSmart portal. Currently, customers receive consumption data on a monthly or bi-monthly basis. Connection of an additional 11,519 smart meters to the AMI system with access to real time data enables the City and its customers to receive timely alarms and notification of major and minor leaks and abnormal use patterns, allowing water waste to be curbed quickly and resulting in the quantifiable avoidance of water loss. Recent studies find that there is a cumulative **9.8% water savings resulting from early leak and break detection and quick repair (4.8%), paired with social norming influences (5%)** upon customers who received information regarding their consumption. As detailed in the table and supported by additional narrative

below, estimated water savings from the installation of Phase III smart meters to the AMI system and customer connection to the WaterSmart customer engagement portal is **800 AFY**.

<b>Phase III AMI Assumptions</b>	
Total # of customer water meters in City	44,500
Total # of smart meters to be installed in Phase III	11,519
Smart meters as a % of total meters in City (11,519 meters/44,500 meters)	26%
Projected water supplied to City in FY 20 (AFY)*	31,328
Total estimated water supplied annually to Phase III smart meters (26% x 31,328)**	8,145
% water savings derived from expeditious repair of customer-side leaks, breaks, water waste due to AMI smart meters (.0344 x 11,519 customers/8,145 AFY)	4.8%
% water savings derived from customer connection to the WaterSmart customer engagement portal (2013 WaterSmart study citation)	5%

\* From City's 2015 Urban Water Management Plan

\*\*Water savings are assumed to occur at an equal rate for each meter that is converted to the AMI system.

A 2016 study from the Water Research Foundation, titled "California Single-Family Water Use Efficiency Study" documents an average leakage rate of 30.7 gallons (.0344 AFY) per household per day – leading to wasted water that typically soaks into the ground, stormwater, and wastewater collection systems. Using the study as the basis to estimate water savings for this project, the amount of water saved passing through the 11,519 smart meters is **393 AFY** (.0344 AFY x 11,519). This represents a reduction in water consumption of approximately **4.8%** (393 AFY/8,145 AFY). It is expected that through AMI technology the availability of real time consumption and enhanced notification of irregular consumption will enable prompt correction of leaks and other abnormal water consumption patterns.

A third party evaluation conducted in 2013 of the East Bay Municipal District's AMI Pilot Study found that AMI, coupled with utilization of the same Social Norms Based (SNB) WaterSmart Analytics software ([WaterSmart.com](http://WaterSmart.com)) that the City owns, resulted in average water savings of **5%**. The evaluation suggests that water efficient behavior and accrued water savings occurs from the "social norming" that happens when customers gain knowledge and understanding of their own consumption patterns. Study participants were encouraged to take steps to achieve greater water use efficiency when they compared their current water to historic use, other similar users, and high efficiency users. Using the evaluation as the basis to estimate water savings associated with customer interaction with the SNB-driven portal, estimated water savings for this project is approximately **407 AFY** (8,145 AFY x .05).

#### Water Savings Derived from Distribution System Leak Detection and Improvements

A study, titled "Proof Through Pilot Testing" published in the January/February 2019 issue of Water Efficiency Magazine by Paul Gagliardo, PE compares traditional acoustical leak detection

to satellite imagery-based leak detection. Traditional acoustical leak detection can be challenging in noisy areas and it is not always easy to distinguish between a leak and water use if both are occurring at the same time. Practiced leak professionals become familiar with the pipe network and begin their investigations in areas anecdotally believed most likely to exhibit leaks. This method can be inefficient and wasteful if leaks develop outside of the expected pattern. Satellite-directed leak detection works by using technology to identify potential leak locations that can then be verified by field crews. The true value of satellite leak detection comes in the ability to identify more leaks and therefore realize a greater reduction of non-revenue water, when compared to traditional approaches to leak detection. The most recent AWWA audit showed the City’s real water loss to be only 5.1% of system demand or about 1,600 AFY (31,328 AFY x 5.1%). Typical systems of this size and age would expect a real water loss of 15-20%, or about 5,500 AFY (31,328 AFY x 17.5%). This leaves some question regarding the City’s water loss estimate of 5.1%, as most of the system was constructed in the 1980’s or earlier, with two-thirds of the existing pipeline infrastructure comprised of asbestos cement pipeline (ACP), which has been identified as more susceptible to leaks and breaks when it is exposed or when construction occurs nearby.

<b>Distribution System Leak Detection and Improvement Assumptions</b>	
Average rate of water loss per utility-side leaks – gallons per minute (GMP) (AWWA M-36 manual citation):	3.2 GPM
Average rate of water loss per utility-side leak (AFY):	5.165 AFY
Expected number of utility-side leaks found using satellite leak detection and subsequently repaired (Utilis Proposal)	62

Currently, the City does not actively track water savings realized from current leak detection and repair efforts. As mentioned above, most leak repair is reactive and based upon visual observation. To estimate expected water savings from the Project, actual results from a similar satellite leak detection and distribution system upgrade project implemented by New Braunfels Utility (NBU) in Texas are used. NBU’s is a water utility with a service area similar in size to that of the City’s. NBU’s water distribution system has 573 miles of pipeline, almost equal to the City’s 590 miles of pipeline. The NBU study, reported in an article titled “Satellite Data Complement Traditional Leak Detection and Repair Programs” was conducted by Utilis in 2018, Results were published in the January 2020 American Water Works Association’s OpFlow magazine. In the study, a total of 816 Likely Leak Locations (LLs) were identified throughout the NBU system, and then physically inspected in the field. Of the LLs inspected, 229 (nearly 28%) were confirmed leak locations. Of the 229 leaks, 101 (nearly 44%) were leaks in the utility-owned distribution system (water mains, service lines, meters, valves, curb stops and at service connections). The balance of the 816 were leaks found on the customer side of the meter (irrigation system leaks, etc.). The utility-side leaks varied in significance based on size and duration or longevity.

A database consisting of information compiled from 1,800 leak detection projects completed by contractors between 2009 and 2018 in North America provides the basis for estimated water loss through leaks in the City’s distribution system. The database includes several types of leaks and includes contractor estimates of leak flow rate at the time the leak was discovered in the field. The database was analyzed by a technical advisor to Utilis in 2019. The average leak flow rate was calculated to be 3.2 GPM or 5.165 AFY [(3.2 GPM x 60 minutes x 24 hour) x 365 days/ 325,851 gallons], as shown in the table below. Given the fact that the Distribution System Leak Detection and Improvements portion of the proposed project includes the upgrade of distribution pipelines, we assume an average of 3.2 GPM, compared to the main leak rate of 9.0 GPM to be a conservative application of average leak rates included in the table below.

LEAK TYPE	Pipeline / Main	Svc Line	Svc Connect.	Valves	Hydrant	Curb stop	Meter	AVG
FLOWRATE (GPM)	9.0	3.3	1.6	6.7	1.0	0.7	0.4	3.2

Source: Utilis

Using the NBU project as a proxy and adjusting for the slight difference in distribution system size between NBU and the City, it is anticipated that the City will find approximately 800 LLLs during the satellite imaging process. 500 of these LLLs will be selected for field inspection (based on an allotment of 50 field crew days at 10 LLLs/day). Of the 500 LLLs inspected, 140 (nearly 28%) leaks will be found. Of the 140 leaks, 62 (nearly 44%) are expected to be utility-side. Based on the average of 5.165 AFY per utility-side leak, total real water loss of **321 AFY** is expected, as shown in the table below. Upon identification of the 62 leaks, the City will utilize a contractor to upgrade leaking pipelines as outlined in the technical project description provided in the previous section.

Project Water Savings Estimates	Project Water Savings (AFY)
<b>AMI</b>	
<ul style="list-style-type: none"> <li>Water savings from prompt response time to fix leaks and correct abnormal consumption patterns associated with 26% of the City’s meters (.0344 x 11,519 customers)</li> </ul>	393
<ul style="list-style-type: none"> <li>Water savings derived from customer interface with the SNB based portal (5% x 8,145 AFY)</li> </ul>	407
<b>Total AMI Water Savings:</b>	<b>800</b>
<b>Distribution System Leak Detection and Improvements:</b> (5.165 AFY x 62 leaks):	<b>321</b>
<b>Total Project Water Savings:</b>	<b>1,121</b>

### ***Describe Current Losses***

Water loss occurs on both customer side of the meter and throughout the potable water distribution system via leaks, breaks, runoff and inefficient use. Water loss typically moves into the groundwater, or stormwater and wastewater collection systems. The City's most recent AWWA audit showed the its real water loss to be only 5.1% of system demand or about 1,600 AFY (31,328 AFY x 5.1%). Typical systems of this size and age would expect a real water loss of 15-20%, or about 5,500 AFY (31,328 AFY x 17.5%).

### ***Installation of Distribution Main Smart Meters***

The installation of distribution main smart meters will not be included as part of the Project.

### ***Types and Quantities of Meters to be Installed***

The make and model of the AMI smart meters installed in Phase III will be consistent with the models installed in Phases I and II. The City will install a total of 11,519 smart meters as part of the Project, which is separate and distinct from the meters installed in Phase I and Phase II.

### ***Actual Water Savings Verification Upon Project Completion***

Please refer to Section 7.3.6.2 for discussion of proposed methodology to quantify actual water savings.

## **7.3.2 Evaluation Criterion B—Water Supply Reliability**

### ***The Project Addresses Specific Reliability Concerns***

The City purchases approximately 90% of its potable water supply from the San Diego County Water Authority (SDCWA), of which 11% is supplied by California's State Water Project (SWP) and 72% is supplied by the USBR's Colorado River Aqueduct (CRA). The City's heavy reliance on imported water, combined with projected population growth in the service area and susceptibility to drought adds continued pressure on supply reliability. The Project is expected to lead to a reduction in demands by an estimated 1,121 AFY. Measurable water savings derived from the Project will reduce the City's dependence on the imported water and improve the City's resilience to the impacts of climate change. It will make imported water available to others in the SDCWA service area, which is expected to experience population growth of approximately 1 million people by 2050 (SANDAG). Through implementation of the Project, the City will be able to reduce its purchases of water from the SDCWA, thereby reducing demands on imported supplies, including those from the Metropolitan Water District (MWD) via the CRA and SWP. Water retailers throughout the region that receive supplies from the Sacramento Bay-Delta and the Colorado River Basin face constant tension as demands grow on increasingly strained water sources. This Project helps decrease demand on these sources. In addition, decreasing imports from the Bay-Delta and Colorado River Basin will help entities such as USBR meet their obligations to deliver water to projects or partners supplied by these distant water sources. Additionally, the

Mission Groundwater Basin from which the City pumps a portion of its water supply is subject to over-drafting in extreme scenarios. Reduced demand realized through implementation of the Project will reduce overall use of groundwater, thus helping to achieve sustainable groundwater management goals.

Drought has been a concern and a challenge over much of the past ten years in Southern California. Due to the cyclical nature of drought and flood conditions that have historically characterized California and intensifying concerns regarding the impact of climate change on hydrology in the state, AMI technology will provide tools to empower customers to make better decisions about water consumption. AMI provides information to end-users about their consumption and allows them to see how improving water use efficiency could help control costs and add a level of sustainability. Access to near real-time consumption data will promote better water management, allow water use efficiency strategies to be implemented, make it possible to repair leaks and breaks more quickly and modify behavior as we compare our consumption patterns to our neighbors and the larger community. The use of satellite leak detection technology will allow the City to detect and eliminate more leaks with greater efficacy when compared to existing leak detection methods. This all translates to quantifiable water savings, thus reduced reliance on imported and local water resources. The 1,121 AFY of water conserved through this Project can be made available for other uses or can remain in-stream.

***The Project Makes Water Available to Achieve Multiple Benefits or to Benefit Multiple Users***

Ultimately this project will increase the water remaining in-stream in the Bay-Delta and Colorado River Basin systems. Increasing in-stream flows will benefit overall ecosystem health. The Project will preserve water supplied to the natural environment and to species reliant on water from these sources. The Lower Colorado River supports several hundred species of wildlife. Water is diverted from the Colorado River primarily at Lake Havasu and transported to Southern California via the CRA. Diversions made to supply Southern California (Oceanside included) decreases flows that would otherwise support the Lower Colorado River ecosystem. The 2004 Lower Colorado River Multi-Species Conservation Program covers 17 species that are not federally listed (CA DWR, 2013). The plan estimates that flow reductions could reach 1,574,000 AFY by 2051, resulting in lower water levels and higher concentrations of contaminants from agricultural runoff. Water in sufficient quantity and quality is fundamental to the health of the Colorado River and to the survival of those 17 non-listed species and all elements of the wider ecosystem. By decreasing the City's reliance on imported water supplies, the Project will increase the quality and quantity of water that remains in the Colorado River and Lake Mead and larger system, thereby supporting the health of the river and restoring and enhancing habitat for species dependent upon it.

The Sacramento Bay-Delta encompasses 1,600 square miles and 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 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 Bay-Delta ecosystem and could help restore habitat for non-listed species. Healthy ecosystems and fisheries have economic benefits. For example, the Bay-Delta provides a variety of recreational opportunities including fishing, hunting, boating, camping, picnics, and viewing nature, which amount to approximately \$809M in income and economic value added per year. Recreational activities on the Colorado River and its tributaries generate \$17B in retail sales which stimulate jobs, tax revenues, and other benefits from the state and regional economies, resulting in a total value of around \$25.6B.

#### ***The Project will benefit Indian Tribes and Economically Disadvantaged Communities***

A recent geospatial analysis found that a population of approximately 16,500 people lived within disadvantaged communities (DACs) in Oceanside, and total of 32% of the City's service area by geographical location met the DAC definition. These calculations were based on the populations and size of a combination of Census block-groups and tracts within the boundaries of the City that met the 80% MHI definition of a DAC. The Project area will implement AMI technology within a portion of these DAC's. While the remaining portion of the Project area is not located within a DAC, it conserves water that is available for the entire service area, including rural and economically disadvantaged communities (EDCs). On a regional scale, more water would be made available to other parts of the State, including tribes and rural and EDCs through a reduction in the amount of imported water the City purchases.

#### ***The Project Promotes and Encourages Collaboration to Increase Water Use Efficiency***

There is broad support for the Project, as evidenced by the support letters included in Appendix C. Please see **Section 7.3.4** for a discussion of how the Project may benefit the agricultural sector. The Project will benefit the City's goal to reduce the gallons per capita daily average to meet SBx7-7 regulations and the California Department of Water Resources' (DWR) legislative mandate to "make water conservation a way of life in California". It supports the SDCWA's goal of securing greater water independence and reduced reliance on imported water supplies from MWD. The City relies on proactive efforts of its customers as partners to achieve water savings that can be attained through knowing water consumption patterns, fixing leaks and breaks faster and striving to use water wisely and efficiently in everyday life. By reducing water consumption and demand for imported water supplies, a future water-related crisis or conflict such as that experienced in 2015 and 2016 in California (resulting in mandated cutbacks of 25% State-wide and 20% for the City) may be deferred and/or avoided.

### **7.3.3 Evaluation Criterion C—Implementing Hydropower**

The City does not intend to implement hydropower components in conjunction with the Project.



### 7.3.4 Evaluation Criterion D—Complementing On-Farm Irrigation Improvements

Agricultural irrigation and related agricultural practices comprise approximately four percent of the potable water demands for the City. Deployment of AMI technology and full utilization of the WaterSmart portal will assist current and future on-farm improvements by giving agricultural customers access to near real-time data. Mission Resources Conservation District (MRCD) is the local Natural Resources Conservation District (NRCS) for the City's service area. MRCD has completed at least 14 irrigation evaluations (technical assistance) to growers in the City's service area in the last six years. Irrigation evaluations provide information about flow rate and uniformity distribution of the existing irrigation system and are a precursor to an agricultural grower's participation in EQIP. To date, these irrigation evaluations have led to the development of six conservation plans, three of which resulted in EQIP grants. The Environmental Quality Incentives Programs (EQIP) offered by the local NRCS has preliminary requirements for participation which include having access to robust water usage data, which will be accessible through the AMI system and the portal.

There has been noted interest by agricultural water users in the City's service area to have access to near real-time water use data that AMI offers. The San Diego County Farm Bureau has provided a letter of support for this and past USBR funded AMI grant proposals. AMI-generated data provides the information that enable growers to identify leaks and line breaks swiftly and react to abnormal consumption patterns promptly. In addition, access to this near real-time data gives growers the ability to detect the overall quantity of water being delivered to a crop. This irrigation data is critical to be able to give a grower the capability to adjust the water delivery by comparing actual water use against optimal water use calculations based on evapotranspiration and plant factor variables. AMI also aids farmers in their pursuit of additional certifications, such as sustainability certifications that require documented water usage. Additional discussions with local farmers have indicated that AMI technology would allow them to shift water demands to a time that is more optimal to the City's production and distribution system because it would help them reduce manual irrigation practices.

The additional data provided by AMI helps inform additional on-farm improvements that are part of the irrigation water management best management practices recognized by USBR and include low application rate irrigation emitters and soil moisture sensors. The City intends to utilize the AMI infrastructure and portal to enhance its support of agricultural customers in achieving water savings and acquiring funding for the necessary improvements through programs such as EQIP. A June 2014 Issue Brief prepared by Natural Resources Defense Council and the Pacific Institute titled "Agricultural Water Conservation and Efficiency Potential in California" concluded that based on previous efficiency studies, agricultural water use could be reduced in California by 17-22%. Applying water savings assumptions employed in this application across the City's agriculture customer class (four percent City's overall water use), an estimated 5% from leak

reduction water savings of 63 AFY (.05 x .04 x 31,328 AFY projected in FY 20) could be realized by the City of Oceanside’s agricultural sector alone.

### 7.3.5 Evaluation Criterion E—Department of the Interior Priorities

#### ***Creating a Conservation Stewardship Legacy Second Only to Teddy Roosevelt***

Increasing demand coupled with an historically unpredictable water supply in California has motivated the Department of Water Resources (DWR), retail and wholesale water utilities, environmental organizations, and other key stakeholders to develop a set of urban best management practices (BMPs) for water conservation. Furthermore, due to the historic drought that California recently experienced, the State government is developing a framework to make conservation a way of life in California. This framework will include quantitative water use objectives and BMPs for retail water agencies throughout the State.

As part of its long-range planning efforts, the City has sought ways to meet ongoing and future water demands and increase supply reliability. The Project is part of this ongoing effort. These planning efforts rely upon utilizing the best available science, and come from a variety of local, regional, statewide, and national sources to identify BMPs for managing water resources and future planning. One such planning measure is the UWMP. This plan is required by the Urban Water Management Planning Act California Water Code (CWC) Division 6, Part 2.6, mandating urban water providers to adopt UWMPs every five years. This mandate acknowledges that water supply is a finite resource with ever-increasing demands and that conservation is of paramount importance and can be best planned for at the local level. The City’s UWMP includes different demand management measures planned for use in its service area. AMI and leak detection are specifically highlighted in the latest plan as two measures that the City can use to achieve effective water conservation.

The City will continue to lean upon the best available science in association with the knowledge and expertise of its staff to identify BMPs for efficiently managing its water supply and adapting to any unforeseen changes in the environment. The City forecasts an increase in water demand through 2040. With the official declaration that drought ended in 2017 by former Governor Brown, associated water conservation efforts will likely wane as vigilance toward consumption relaxes. This combined with anticipated population increase point to future increases in water demand. Implementation of AMI and efforts to reduce water loss through the distribution system will assist in combating such predicted increases in consumption. Increased water use efficiency and reduced water loss from leaks will mitigate the cyclical drought conditions that strike California and will increase the availability of water for all to use.

#### ***Utilizing Our Natural Resources***

Importing water is an energy intensive process. Oceanside is in San Diego County, making the City one of the farthest destinations for water to be delivered from the Colorado River Basin and

the Bay-Delta. The National Resources Defense Council put out a study titled “Energy Down the Drain: The Hidden Costs of California’s Water Supply” which found that the energy required to transfer water from the SWP to Southern California over the Tehachapi Mountains is equal to an estimated one-third of the total average household electric use in the region. This figure only considers the SWP and does not factor in the energy requirements for importing water from the Colorado River Basin to Southern California – but inferences can be made from this data. The reduction of an estimated 807 AFY (72% of 1,121 AFY) in water demanded from the USBR’s CRA due to the Project will reduce energy demands from pumping water to the City. Approximately 2,000 kWh per acre foot is required to pump Colorado River water to Southern California. (Metropolitan Water District of Southern California 1996), therefore estimated energy savings from reduced demand from the CRA alone is 1.6 million kWh annually (807 AF x 2,000 kWh/AFY).

### ***Restoring Trust with Local Communities***

The Project will allow the City of Oceanside to be a better neighbor to those it shares resources with by reducing its demand for water from already taxed sources such as the Bay-Delta and Colorado River Basin. While not entering a direct dialogue with its neighbors, through implementation of the Project, the City hopes to demonstrate the initiative to improve relationships in the region by lessening its need for water, a critical resource that many others in the area also need and share in limited water resources. The robust outreach and education campaign that will be delivered as part of the AMI implementation effort is a valuable touch point to interact with customers and citizens and provide support to those actively embracing a new technology.

### ***Striking a Regulatory Balance***

The Project will allow customers to monitor consumption real time through the WaterSmart portal, effectively easing the City’s involvement in the water consumption monitoring task. AMI functionality will provide the City with the ability to quantify the amount of water being consumed on a real time basis. As discussed, customers can be notified of abnormal consumption patterns automatically. This will allow City staff to focus on ways to improve water consumption and efficiency on a broader scale.

### ***Modernizing our Infrastructure***

The oldest parts of the City’s infrastructure were built in 1926 and most of the City’s infrastructure was built in the 1980’s and 1990’s. The City sees that modernizing its existing system with AMI technology will benefit the entire service area through early leak detection, thereby reducing demand and allowing more water to be available for other uses or to remain in-stream. AMI will assist both the City and its customers to identify water waste quickly. Distribution system improvements using satellite leak detection will allow the City to more efficiently and productively find and repair leaks that are increasing in frequency throughout the distribution system due to aging infrastructure. Once the leaks have been identified, the City will upgrade approximately 1,240 linear feet of the pipe by replacing existing ACP and metal pipe with PVC pipe, a more robust

material that withstands corrosion, stress from vibration and geological movement, thus less likely to develop sub-terrain leaks over time.

## 6.3.6 Evaluation Criterion F—Implementation and Results

### 7.3.6.1 Project Planning

Several planning efforts provide support for the Project. In 2016, the City updated their *Water Conservation Plan* (City of Oceanside, 2016) which identified a suite of water conservation measures to implement to comply with SBx7-7. The Water Conservation Plan focused on the largest customer classes within the City, residential and dedicated irrigation, together comprising 78% of all water consumption. AMI was identified as a preferred initiative within the suite of recommended water conservation measures. The City also updated the UWMP in 2016 and remain in compliance with the Urban Water Management Planning Act in the California Water Code. DWR’s UWMP guidelines require a specific set of demand management measures (DMMs) to be reported on, including Water Waste Prevention Ordinances, Metering, Conservation Pricing, Public Education and Outreach, Programs to Assess and Manage Distribution System Real Loss, Water Conservation Program Coordination and Staffing Support. The City’s UWMP states goals and proposed measures to help reduce water consumption to comply with the water use targets set by SBx7-7. The Plan identifies AMI technology as one of the measures anticipated to meet conservation goals. The City’s UWMP can be found at the following link: <https://www.ci.oceanside.ca.us/civicax/filebank/blobdload.aspx?blobid=42608>

The City is a stakeholder in the 2019 San Diego Integrated Regional Watershed Management (IRWM) Plan, adopted in December 2019. The Project would directly and indirectly address many of the Plan’s recommendations, including making improvements in water supply and addressing climate change. The 2019 IRWM Plan seeks to develop an integrated, balanced, and consensus-based approach to ensuring the long-term sustainability of the Region’s water supply, water quality, and natural resources. One of the 2019 IRWM Plan’s objectives is to improve water supply and focus on optimizing local water resources to reduce the Region’s reliance on imported water. The targets include conserving water through water use efficiency and conservation measures. The Project will increase water use efficiency and reduce loss of potable supplies. The plans’ objective to address climate change focuses on adapting to and mitigating against climate change vulnerability with targets of increasing local supplies, implementing adaptation strategies, and implementing mitigation strategies that decrease emissions of greenhouse gases. The Project will help improve local supply reliability by reducing demands and will result in reductions in energy use and greenhouse gas emissions through reductions in imported water demand that requires energy to pump water from distant watersheds.

The goals and objectives of the Project align with the State’s SBx7-7 requirements and objectives of the anticipated “framework” that is being developed by a collaboration of California state agencies, directed at “making water conservation a way of life in California”.

California's recent drought of the mid-2010's prompted the passage of Senate Bill 606 and Assembly Bill 1668 and issuance of two executive orders (EOs) by California's Governor Brown in 2016 and 2017, with the intent of responding to the historical and extended hydrological drought and water shortages that plagued the state and larger western U.S. region. Both EO B-37-16 and EO B-40-17 direct the State Water Board and Department of Water Resources to minimize water system leaks in urban retail water systems that waste large amounts of water. Further, the [California Water Code Section 10608.34](#) required the State Water Board to develop water loss performance standards for urban retail water suppliers between January 2019 and July 2020. The Distribution System Leak Detection and Improvement element of the Project will assist the City in achieving water loss reduction targets anticipated from the State in the near future.

#### 7.3.6.2 Performance Measures

##### Benefit Quantification of AMI

The installation of smart meters will enable tracking of water consumption that occurs on the "customer-side" of the meter connection. A validation of reduced consumption achieved by customers can be obtained by comparing water consumption for a sample set of customer accounts during a period of time before and after customers have been connected to the AMI system and the cloud based WaterSmart web portal.

Historical Annual Cumulative Demand (2018-2019 12-month avg) – Cumulative Annual Demand after installation of AMI smart meters and WaterSmart portal is accessible to customers (est. 12 months between July 2024 - June 2025) = Change in Cumulative Annual Demand\*

\* Weather normalization of data may be considered if differences in precipitation and temperature between years is significant.

##### Benefit Quantification of the Distribution System Leak Detection and Improvements

The benefit derived from leak detection and pipeline upgrades will be vetted through a final count of the leaks repaired during the project. Applying the metric of 3.2 GPM to represent the average leak found and repaired via pipeline upgrades to the distribution system (as referenced in **Section 7.3.1**), multiplied by the total number of leaks repaired, and then annualized will provide value for water saved through this initiative in acre feet per year.

Formula:  $3.2 \text{ GPM} \times 60 \text{ min} \times 24 \text{ hours} \times 365 \text{ days} / 326,000 \text{ gallons} \times \text{total number of pipeline upgrades completed} = \text{Total acre feet of water saved annually.}$

Additionally, during the leak detection crews will compile the following information: leak physical location, leak type and estimated leak size. An estimate of the flow rate of the leaks identified by the satellite imagery and found during the directed boots on the ground (BOTG) field inspection will be made. The real water loss flow rate will be calculated three ways.

1. Field inspector BOTG report,
2. USA historic rates based on 1800 projects
3. AWWA M36 Manual

The total estimated flow of all leaks will be calculated and compared to the benchmark. The three leak flow rate calculations methodologies will be used to determine whether the actual results met or exceeded the expected results.

### 7.3.6.3 Readiness to Proceed

#### AMI

The City is the singular entity completing the AMI portion of the Project, which is located entirely within the City's service area. The City employs a skillful and talented staff who have been an integral part of the planning process for AMI implementation. The applicant has shown, through its past successful projects with USBR, a willingness to work with the agency and welcomes the opportunity to further its collaboration through funding and implementation of the Project. An AMI feasibility study was completed for the City by a consultant in 2017. City Council has approved the project and Capital Improvement Program funding has been designated for the Project. The City has hired vendors to furnish and install all smart meters and lids associated with the Project, which is scheduled for completion by March 2024.

The City is completing all required environmental and cultural resources reviews and anticipates acquiring the applicable permits connected with the Project by October 2020. The City is in the process of filing a Notice of Exemption, as applicable, to comply with CEQA for the AMI element of the Project. The City has investigated and determined the project scope does not require a Condition Use Permit (CUP) to comply with City ordinances. Per early discussions with USBR, it is anticipated that the AMI work scope will receive a categorical exclusion to meet NEPA requirements.

#### Distribution System Improvements

The City has received a proposal from Utilis, Inc., the only known provider of satellite leak detection technology. The proposal is included in Appendix D for reference. Utilis is the sole source provider for the Satellite Leak Detection component of the Distribution System Leak Detection and Improvement element of the Project. The City has confirmed in writing that the Utilis data analysis for identifying possible potable water leaks in water distribution systems is a sole source product, manufactured and sold by Utilis, Inc. The statement includes a declaration that no other company makes a similar or competing product. Additionally, competition is precluded by the existence of a patent held by Utilis for their proprietary algorithm and process. The patent is US 9285475 March 15, 2016: SYSTEM AND METHOD OF UNDERGROUND WATER DETECTION.

The scope of the distribution system improvements activities will not require environmental permitting as they fall under exempt activities that meet CEQA and NEPA requirements. Depending on the location of the leaks and scope of the pipeline replacement work which may include excavation, the City will investigate and obtain the necessary environmental approvals to perform the repair work.

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

The table below shows the anticipated Project schedule.

<b>Phase III - Project Schedule</b>	
Anticipated contract approval from USBR	April 2021
Project Administration	April 2021 – March 2024
Environmental/Cultural Resources Review	February 2020 – October 2020
Construction Contracting & Construction Implementation	April 2021 – March 2024

### 7.3.7 Evaluation Criterion G— Nexus to Reclamation Project Activities

The City receives a large portion of its water from sources that ultimately originate from the Bay-Delta and the Colorado River Basin. The City purchases approximately 90% of its potable water supply from the SDCWA, of which 11% is supplied by California’s SWP and 72% is supplied by the USBR’s CRA. The CRA is a Reclamation Project and the Central Valley Project (CVP), which shares resources with the State of California’s SWP, is also a Reclamation project. The Project will conserve water that will ultimately reduce demand on the SWP/CVP and CRA, thereby benefiting Reclamation projects.

The Project is neither on Reclamation lands nor does it involve USBR facilities. The Project is not located in the same basin as a USBR project or activity. USBR has provided funding support for a San Diego Watershed Basin Study. The study strives to determine how climate change will impact the water supply system and develop structural and non-structural adaptation strategies to manage climate change impacts.

### 7.3.8 Evaluation Criterion H— Additional Non-Federal Funding

*State the percentage of non-Federal funding provided using the following calculation:*

$$\frac{\text{Non-Federal Funding}}{\text{Total Project Cost}}$$

$$\frac{\$3,669,548 \text{ (Non – Federal Funding)}}{\$5,669,548 \text{ (Total Project Cost)}} = 65\% \text{ Cost Share}$$

The percentage of non-Federal funding is 65%, which exceeds the required 50% match.



## 8 Project Budget

### Funding Plan & Letters of Commitment

The City of Oceanside will provide the non-Reclamation share of the Project costs through a capital improvement project. The cost breakdown is shown in **Table 8.1-1** below. No additional funding commitments have been pursued for the scope of this project at this time.

**Table 8.1-1: Summary of Non-Federal and Federal Funding Sources**

FUNDING SOURCE	% OF PROJECT	FUNDING AMOUNT
<b>Non-Federal Entities</b>		
City of Oceanside	65%	\$3,669,548
<i>Non-Federal Subtotal:</i>	65%	\$3,669,548
<b>Other Federal Entities</b>		
N/A	0%	
<i>Other Federal Subtotal:</i>	0%	
<b>Requested Reclamation Funding:</b>	35%	\$2,000,000
<b>TOTAL PROJECT FUNDING:</b>	100%	\$5,669,548

### 8.2 Budget Proposal

The proposed budget breakdown by funding source for the Project is provided in **Table 8.2-1**.

**Table 8.2-1: Total Project Cost Table**

SOURCE	AMOUNT
Costs to be reimbursed with the requested Federal funding*	\$2,000,000
Costs to be paid by the applicant	\$3,669,548
Value of third-party contributions	\$0
<b>TOTAL PROJECT COST</b>	<b>\$5,669,548</b>

\* Includes estimated cost of environmental review of \$1,000 to be incurred by USBR.

The proposed budget for the Project is provided in **Table 8.2-2**.

**Table 8.2-2: Budget Proposal**

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	TOTAL COST
	\$/Unit	Quantity		
<b>Salaries and wages</b>				<b>\$0</b>
N/A				\$0
<b>Fringe benefits by \$ or %</b>				<b>\$0</b>
N/A				\$0
<b>Travel</b>				<b>\$0</b>
N/A				\$0
<b>Equipment</b>				<b>\$0</b>
N/A				\$0
<b>Materials and Supplies</b>				<b>\$0</b>
N/A				\$0
<b>Contractual/construction</b>				<b>\$5,669,548</b>
AMI Consultant Services including Program Management, Business Process, and Integration Services	\$378,347	1	Lump Sum	\$378,347
Meters, Endpoints & Box Lids	\$238.35	11,519	Units	\$2,745,625
Installation Services, Equipment, Software	\$1,105,576	1	Lump Sum	\$1,105,576
Satellite Leak Detection Services, Analysis, and Reporting for Distribution System	\$200,000	1	Lump Sum	\$200,000
Pipeline Upgrades	\$20,000	62	Units	\$1,240,000
<b>Environmental and Regulatory Costs</b>				<b>\$0</b>
N/A				\$0
<b>Third-Party Contributions</b>				<b>\$0</b>
N/A				\$0
<b>Other</b>				<b>\$0</b>
N/A				\$0
<b>TOTAL DIRECT COSTS</b>				<b>\$5,669,548</b>
<b>Indirect Costs</b>				<b>\$0</b>
N/A				\$0
<b>TOTAL ESTIMATED PROJECT COSTS</b>				<b>\$5,669,548</b>

## 8.3 Budget Narrative

### *Salaries and Wages*

The Project is not requesting funds for salaries and wages.

### ***Fringe Benefits***

The Project is not requesting funds for fringe benefits.

### ***Travel***

The Project is not requesting funds for travel.

### ***Equipment***

The Project is not requesting funds for equipment.

### ***Materials and Supplies***

The Project is not requesting funds for materials and supplies.

### ***Contractual***

Most of the requested budget is contractual and includes construction and implementation costs for the Project. The City issued competitive procurement documents for the entire AMI project to be implemented. This grant is seeking funding only for the Phase III of that overall project. Phase III accounts for approximately 26% of the total project scope, which includes the procurement and installation of approximately 11,519 smart meters, AMI compatible lids, and Program Management services associated for this phase of the project only. Per the AMI procurement documents, the City has secured a turnkey system, inclusive of all necessary materials and systems needed for the AMI project. The detailed project bids and contracted pricing breakdowns for the vendors and consultant are included in Appendix C.

The City has received a proposal from Utilis, Inc., the only known provider of satellite leak detection technology. The proposal is included in Appendix D for reference. Utilis is the sole source provider for the Project. The City has confirmed in writing that the Utilis data analysis for identifying possible potable water leaks in water distribution systems is a sole source product, manufactured and sold by Utilis, Inc. The statement includes a declaration that no other company makes a similar or competing product. The City anticipates using a contractor to perform pipeline segment upgrades. It is estimated that each upgrade (assuming to be a 20-linear-foot-long pipe upgrade with PVC pipe) will cost \$20,000. This estimate is based on recently constructed pipeline projects in the City, and includes [trenching, shoring and pipe replacement costs](#).

The total of all these items combined is a total of \$5,669,548 for construction and contractual costs for the Project budget.

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

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

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

The Project is not requesting funds for environmental and regulatory compliance costs.

### *Other Expenses*

The Project is not requesting funds for other expenses.

### *Indirect Costs*

The Project is not requesting funds for indirect costs.

### *Total Costs*

The total cost of the proposed project is **\$5,669,548**. Funding sources for the Project is the City of Oceanside and the requested funds from Reclamation. The City is requesting **\$2,000,000** from Reclamation to fund the Project, less costs for USBR's required environmental review. This request represents **35%** of the total project cost. No other Federal funding has been requested or received for the Project.

## 9 Required Permits or Approvals

### AMI

The Project will piggyback upon the City's existing water meter programs which have been implemented by the City for several years. Through its existing programs, the City anticipates that it will not need more than filing a NOE to achieve environmental permitting approval. As such, no extensive permitting work is necessary for this project. Funding is not being requested for this task and costs are not included in the budget.

### Distribution System Leak Detection and Improvements

The scope of the satellite leak detection activities do not require environmental permitting as they fall under exempt activities that meet CEQA and NEPA requirements. Depending on the location of the detection and scope of the repairs, which may include excavation, the City will investigate and obtain the necessary environmental approvals to perform the repair work.

## 10 Letters of Project Support

The City has received five letters of support for the Project from Congressman Mike Levin, the Oceanside Chamber of Commerce, the San Diego Regional Climate Collaborative, the San Diego County Farm Bureau, and the Institute for Local Government, which can be found in Appendix B.

## 11 Official Resolution

A resolution will be introduced at the October 7th City Council meeting to authorize the City Manager to apply for this WaterSmart WEEG grant. A draft resolution is attached in Appendix E, which verifies the following:

- Identify of the official with legal authority to enter into agreement (City Manager or designee)
- City Council who supports the application
- Capability of the applicant to provide the funding match
- Willingness of applicant to work with Reclamation to meet established deadlines for entering into a cooperative agreement

The final executed copy will be submitted to Reclamation within 30 days of the application submittal.

## 12 Environmental and Cultural Resource Considerations

The following questions from the FOA are answered herein:

***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 will consist of replacing existing water meters with smart meters capable of providing real-time meter readings. Earth-disturbing work is not anticipated when replacing meters but will occur during the pipeline upgrade portion of the Project. Excavation will occur around the sections of pipeline to be replaced but will be done to minimize impact on the surrounding environment.

***Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?***

The project area is located within a Multiple Species Conservation Program (MSCP) area and within proximity to U.S. Fish and Wildlife Service (USFWS) Species Critical Habitats for Least Bell's Vireo, Southwestern Willow Flycatcher, and Coastal California Gnatcatcher. Although these species may be located within the project area, they are unlikely to be located within the meter replacement sites (customer meter boxes) or within existing right of way where water distribution lines are located. Given the small-scale and temporary nature of work activities associated with the Project, listed species or designated critical habitat is not expected to be adversely affected.

***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.***

Several surface waters within the City's service area fall within Clean Water Act jurisdiction, including the San Luis Rey River and the Santa Margarita River Lagoon. The Project would not adversely impact these surface water bodies because they are not within the AMI installation sites (customer meter boxes) or water distribution lines.

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

The oldest part of the City of Oceanside's water infrastructure was constructed in 1926, with the majority built in the 1980's-1990's.

***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 Project will not modify or affect individual features of an irrigation system. The Project is centered around upgrades to water meters and water distribution mains and will not involve irrigation systems.

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

The Project will not modify or affect any buildings, structures, or features. Therefore, cultural resources will not be affected because of program implementation.

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

There are no known archeological sites in the proposed AMI installation sites (customer meter boxes) or distribution mains. The Project would not result in significant ground-disturbing activity that would pose a significant threat to archaeological sites. Any pipeline replacements will take place in already disturbed subgrade and there are no known archeological sites within the City's easements and pipeline right of way.

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

The meter replacements and distribution system upgrades funded through the Project will occur throughout the City's service area which include low-income and minority populations, with no disproportionate impacts or benefits from program implementation anticipated to those populations. AMI offers real time information on water consumption which may be of benefit to lower-income customers due to an anticipated increase in early leak detections (and prompt response) thus lower 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 is a member of the North San Diego Water Reuse Coalition (NSDWRC). A Sacred Lands File search through the Native American Heritage Commission was conducted for the NSDWRC's 2015 Program Environmental Impact Report (PEIR; OMWD, 2015, [https://nsdwrc.org/pdfs/Draft%20PEIR\\_Compiled%20wAppendices\\_sm.pdf](https://nsdwrc.org/pdfs/Draft%20PEIR_Compiled%20wAppendices_sm.pdf)). The search revealed Native American ground and/or individuals within the service area. These lands and sites would not be impacted by the Project, and access to these sites would not be affected.

***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 Project does not include any habitat alteration components. The program would not contribute to the introduction, continue the existence of, or spread noxious weeds or non-native invasive species.

## 13 Automated System Application for Payment (ASAP) Registration

The City of Oceanside has an active account in the ASAP registration system with current information. The City will maintain an active ASAP account during the period of any federal assistance agreement. The City's ASAP ID is jmcke549.

## 14 System for Award Management (SAM) Registration

The City of Oceanside is registered in the SAM and will 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. The City's unique entity identifier is 073370678. The City's CAGE code is 39BK9.

## 15 References

- City of Oceanside, 2016. 2015 Urban Water Management Plan.
- City of Oceanside, 2016. Water Conservation Master Plan Update.
- City of Oceanside, 2016. City of Oceanside Greenhouse Gas Emissions Inventory and Forecast.
- East Bay Municipal Utility District, 2013. Evaluation of East Bay Municipal Utility District's Pilot of WaterSmart Home Water Reports.
- Gagliardo, Paul. "Proof Through Pilot Testing." *Water Efficiency*. January/February 2019.
- Irvine Ranch Water District, 2011. California Single-Family Water Use Efficiency Study.

- New Braunfels Utilities, 2020. “Satellite Data Complement Traditional Leak Detection and Repair Programs.”
- Regional Water Management Group (RWMG), 2019. 2019 San Diego Integrated Regional Management Plan.
- San Diego County Water Authority (SDCWA), 2016. 2015 Urban Water Management Plan.

## 16 Appendices

### **Appendix A -SF Forms**

### **Appendix B - Letters of Support**

### **Appendix C - Cost Estimate Data**

### **Appendix D – Utilis Satellite Leak Detection Proposal**

### **Appendix E - Draft Resolution**



# **Appendix A – Completed SF Forms**

**Application for Federal Assistance SF-424**

<b>* 1. Type of Submission:</b> <input type="checkbox"/> Preapplication <input checked="" type="checkbox"/> Application <input type="checkbox"/> Changed/Corrected Application	<b>* 2. Type of Application:</b> <input checked="" type="checkbox"/> New <input type="checkbox"/> Continuation <input type="checkbox"/> Revision	<b>* If Revision, select appropriate letter(s):</b> <input type="text"/> <b>* Other (Specify):</b> <input type="text"/>
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<b>* 3. Date Received:</b> <input type="text"/> Completed by Grants.gov upon submission.	<b>4. Applicant Identifier:</b> <input type="text"/>
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<b>5a. Federal Entity Identifier:</b> <input type="text"/>	<b>5b. Federal Award Identifier:</b> <input type="text"/>
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**State Use Only:**

<b>6. Date Received by State:</b> <input type="text"/>	<b>7. State Application Identifier:</b> <input type="text"/>
--	--

**8. APPLICANT INFORMATION:**

**\* a. Legal Name:**  City of Oceanside

<b>* b. Employer/Taxpayer Identification Number (EIN/TIN):</b> <input type="text"/> 95-1688570	<b>* c. Organizational DUNS:</b> <input type="text"/> 0733706780000
---	--

**d. Address:**

<b>* Street1:</b>	<input type="text"/> 300 North Coast Highway
<b>Street2:</b>	<input type="text"/>
<b>* City:</b>	<input type="text"/> Oceanside
<b>County/Parish:</b>	<input type="text"/>
<b>* State:</b>	<input type="text"/> CA: California
<b>Province:</b>	<input type="text"/>
<b>* Country:</b>	<input type="text"/> USA: UNITED STATES
<b>* Zip / Postal Code:</b>	<input type="text"/> 92054-2824

**e. Organizational Unit:**

<b>Department Name:</b> <input type="text"/> Water Utility	<b>Division Name:</b> <input type="text"/> Water
---	---

**f. Name and contact information of person to be contacted on matters involving this application:**

<b>Prefix:</b> <input type="text"/> Ms.	<b>* First Name:</b> <input type="text"/> Lindsay
<b>Middle Name:</b> <input type="text"/>	
<b>* Last Name:</b> <input type="text"/> Leahy	
<b>Suffix:</b> <input type="text"/>	
<b>Title:</b> <input type="text"/> Principal Water Engineer	

**Organizational Affiliation:**

<b>* Telephone Number:</b> <input type="text"/> 760-435-5913	<b>Fax Number:</b> <input type="text"/>
--	---

**\* Email:**  lleahy@oceansideca.org

**Application for Federal Assistance SF-424**

**\* 9. Type of Applicant 1: Select Applicant Type:**

C: City or Township Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

\* Other (specify):

**\* 10. Name of Federal Agency:**

Bureau of Reclamation

**11. Catalog of Federal Domestic Assistance Number:**

15.507

CFDA Title:

WaterSMART (Sustain and Manage America's Resources for Tomorrow)

**\* 12. Funding Opportunity Number:**

BOR-DO-21-F001

\* Title:

WaterSMART Grants: Water and Energy Efficiency Grants for Fiscal Year 2021

**13. Competition Identification Number:**

BOR-DO-21-F001

Title:

WaterSMART Grants: Water and Energy Efficiency Grants for Fiscal Year 2021

**14. Areas Affected by Project (Cities, Counties, States, etc.):**

Add Attachment

Delete Attachment

View Attachment

**\* 15. Descriptive Title of Applicant's Project:**

City of Oceanside Advanced Metering Infrastructure Phase III & Distribution System Leak Detection and Improvement Project

Attach supporting documents as specified in agency instructions.

Add Attachments

Delete Attachments

View Attachments

**Application for Federal Assistance SF-424**

**16. Congressional Districts Of:**

\* a. Applicant

\* b. Program/Project

Attach an additional list of Program/Project Congressional Districts if needed.

Add Attachment

Delete Attachment

View Attachment

**17. Proposed Project:**

\* a. Start Date:

\* b. End Date:

**18. Estimated Funding (\$):**

* a. Federal	<input type="text" value="2,000,000.00"/>
* b. Applicant	<input type="text" value="3,669,548.00"/>
* c. State	<input type="text" value="0.00"/>
* d. Local	<input type="text" value="0.00"/>
* e. Other	<input type="text" value="0.00"/>
* f. Program Income	<input type="text" value="0.00"/>
* g. TOTAL	<input type="text" value="5,669,548.00"/>

**\* 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

a. This application was made available to the State under the Executive Order 12372 Process for review on

b. Program is subject to E.O. 12372 but has not been selected by the State for review.

c. Program is not covered by E.O. 12372.

**\* 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)**

Yes  No

If "Yes", provide explanation and attach

Add Attachment

Delete Attachment

View Attachment

**21. \*By signing this application, I certify (1) to the statements contained in the list of certifications\*\* and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances\*\* and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

\*\* I AGREE

\*\* The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

**Authorized Representative:**

Prefix:  \* First Name:

Middle Name:

\* Last Name:

Suffix:

\* Title:

\* Telephone Number:  Fax Number:

\* Email:

\* Signature of Authorized Representative:

\* Date Signed:

### BUDGET INFORMATION - Construction Programs

*NOTE: Certain Federal assistance programs require additional computations to arrive at the Federal share of project costs eligible for participation. If such is the case, you will be notified.*

COST CLASSIFICATION	a. Total Cost	b. Costs Not Allowable for Participation	c. Total Allowable Costs (Columns a-b)
1. Administrative and legal expenses	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>
2. Land, structures, rights-of-way, appraisals, etc.	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>
3. Relocation expenses and payments	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>
4. Architectural and engineering fees	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>
5. Other architectural and engineering fees	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>
6. Project inspection fees	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>
7. Site work	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>
8. Demolition and removal	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>
9. Construction	\$ <input type="text" value="5,669,548.00"/>	\$ <input type="text"/>	\$ <input type="text" value="5,669,548.00"/>
10. Equipment	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>
11. Miscellaneous	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>
12. SUBTOTAL (sum of lines 1-11)	\$ <input type="text" value="5,669,548.00"/>	\$ <input type="text"/>	\$ <input type="text" value="5,669,548.00"/>
13. Contingencies	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>
14. SUBTOTAL	\$ <input type="text" value="5,669,548.00"/>	\$ <input type="text"/>	\$ <input type="text" value="5,669,548.00"/>
15. Project (program) income	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>
16. TOTAL PROJECT COSTS (subtract #15 from #14)	\$ <input type="text" value="5,669,548.00"/>	\$ <input type="text"/>	\$ <input type="text" value="5,669,548.00"/>
<b>FEDERAL FUNDING</b>			
17. Federal assistance requested, calculate as follows:		Enter eligible costs from line 16c Multiply X <input type="text" value="35"/> %	\$ <input type="text" value="1,984,341.80"/>

(Consult Federal agency for Federal percentage share.)

## ASSURANCES - CONSTRUCTION PROGRAMS

OMB Number: 4040-0009  
Expiration Date: 02/28/2022

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0042), Washington, DC 20503.

**PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.**

**NOTE:** Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the Awarding Agency. Further, certain Federal assistance awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance, and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project costs) to ensure proper planning, management and completion of project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, the right to examine all records, books, papers, or documents related to the assistance; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will not dispose of, modify the use of, or change the terms of the real property title or other interest in the site and facilities without permission and instructions from the awarding agency. Will record the Federal awarding agency directives and will include a covenant in the title of real property acquired in whole or in part with Federal assistance funds to assure non-discrimination during the useful life of the project.
4. Will comply with the requirements of the assistance awarding agency with regard to the drafting, review and approval of construction plans and specifications.
5. Will provide and maintain competent and adequate engineering supervision at the construction site to ensure that the complete work conforms with the approved plans and specifications and will furnish progressive reports and such other information as may be required by the assistance awarding agency or State.
6. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
7. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
8. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards of merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
9. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.
10. Will comply with all Federal statutes relating to non-discrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681 1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.

11. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal and federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
12. Will comply with the provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.
13. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333) regarding labor standards for federally-assisted construction subagreements.
14. Will comply with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.
15. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).
16. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.
17. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq).
18. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."
19. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.
20. Will comply with the requirements of Section 106(g) of the Trafficking Victims Protection Act (TVPA) of 2000, as amended (22 U.S.C. 7104) which prohibits grant award recipients or a sub-recipient from (1) Engaging in severe forms of trafficking in persons during the period of time that the award is in effect (2) Procuring a commercial sex act during the period of time that the award is in effect or (3) Using forced labor in the performance of the award or subawards under the award.

<b>SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL</b> <input type="text" value="Completed on submission to Grants.gov"/>	<b>TITLE</b> <input type="text" value="Principal Water Engineer"/>
<b>APPLICANT ORGANIZATION</b> <input type="text" value="City of Oceanside"/>	<b>DATE SUBMITTED</b> <input type="text" value="Completed on submission to Grants.gov"/>

# DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C.1352

OMB Number: 4040-0013  
Expiration Date: 02/28/2022

<b>1. * Type of Federal Action:</b> <input type="checkbox"/> a. contract <input checked="" type="checkbox"/> b. grant <input type="checkbox"/> c. cooperative agreement <input type="checkbox"/> d. loan <input type="checkbox"/> e. loan guarantee <input type="checkbox"/> f. loan insurance	<b>2. * Status of Federal Action:</b> <input type="checkbox"/> a. bid/offer/application <input checked="" type="checkbox"/> b. initial award <input type="checkbox"/> c. post-award	<b>3. * Report Type:</b> <input checked="" type="checkbox"/> a. initial filing <input type="checkbox"/> b. material change
--	--	--

**4. Name and Address of Reporting Entity:**

Prime     SubAwardee

\* Name:

\* Street 1:     Street 2:

\* City:     State:     Zip:

Congressional District, if known:

**5. If Reporting Entity in No.4 is Subawardee, Enter Name and Address of Prime:**

<b>6. * Federal Department/Agency:</b> <input type="text" value="Bureau of Reclamation"/>	<b>7. * Federal Program Name/Description:</b> <input type="text" value="WaterSMART (Sustain and Manage America's Resources for Tomorrow)"/> CFDA Number, if applicable: <input type="text" value="15.507"/>
--	---

<b>8. Federal Action Number, if known:</b> <input type="text"/>	<b>9. Award Amount, if known:</b> \$ <input type="text"/>
--	--

**10. a. Name and Address of Lobbying Registrant:**

Prefix  \* First Name  Middle Name

\* Last Name  Suffix

\* Street 1:     Street 2:

\* City:     State:     Zip:

**b. Individual Performing Services** (including address if different from No. 10a)

Prefix  \* First Name  Middle Name

\* Last Name  Suffix

\* Street 1:     Street 2:

\* City:     State:     Zip:

**11.** Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when the transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

\* Signature:

\* Name: Prefix  \* First Name  Middle Name

\* Last Name  Suffix

Title:     Telephone No.:     Date:



# **Appendix B – Letters of Support**



Congress of the United States  
House of Representatives  
Washington, DC 20515-0549

WASHINGTON D.C. OFFICE  
1626 LONGWORTH OFFICE BUILDING  
WASHINGTON, D.C. 20515  
(202) 225-3906

OCEANSIDE DISTRICT OFFICE  
2204 EL CAMINO REAL, SUITE 314  
OCEANSIDE, CA 92054  
(760) 599-5000

DANA POINT DISTRICT OFFICE  
33282 GOLDEN LANTERN, SUITE 102  
DANA POINT, CA 92629  
(949) 281-2449

August 28, 2020

The Honorable Brenda Burman  
Commissioner  
Bureau of Reclamation  
1849 C Street NW  
Washington DC 20240-0001

Dear Commissioner Burman:

I write to support full consideration for the City of Oceanside's application for the Department of the Interior (DOI) WaterSMART Water and Energy Efficiency program which would help fund the deployment of the City's Automated Metering Infrastructure (AMI) and bolster leak detection capabilities in its water distribution system.

This project consists of replacing water meters with remote reading capabilities and combining these real-time reads with a customer portal, capable of notifying customers of water use anomalies, high usage as well as suspected leaks. These capabilities would eliminate the need for staff to physically take the meter reading, which would help reduce greenhouse gas emissions. Additionally, the use of satellite leak detection technology will further enhance the City's ability to detect leaks quickly in a cost-effective manner.

Due to drought and other unique challenges, ensuring efficient utilization of water supplies is critical for my district, which includes Oceanside.

I respectfully request that you provide full consideration of Oceanside's application for DOI WaterSMART Water and Energy Efficiency grant funding for improved water system management.

Sincerely,

A handwritten signature in black ink that reads "Mike Levin".

MIKE LEVIN  
Member of Congress

**Executive Committee**

**Debra Allen**

*Chair of the Board*  
Eternal Hills Memorial Park

**Haley Wonsley**

*Chair Elect*  
Intesa Communications

**Bill Birnie**

*Immediate Past Chair*  
Frontwave Credit Union

**Marva Bledsoe**

*Secretary/Treasurer*  
Nonprofit Management  
Consulting

**Kevin Witowich**

*Vice Chair*

**Joshua W. Van Orden**

*Vice Chair*  
Oceanside Therapy Group

**Bob Waite**

*Vice Chair*  
AFLAC

**Scott Ashton**

*Chief Executive Officer*  
Oceanside Chamber

**Directors**

**Charlie Anderson**

Privateer Coal Fire Pizza

**Robert Lustig**

Military Automotive  
Assistance Program

**Maria Mingalone**

Oceanside Museum of Art

**Kristen Huyck**

MiraCosta College

**Christine Lee**

California State University  
San Marcos

**Natzeli Dertsakian**

Genentech

**Jessica Shrader**

Tri-City Medical Center

**Rick Wright**

MainStreet Oceanside

**Katie Scanlan**

San Diego Gas & Electric

**Ernie Prieto**

Oceanside Sea Center

**Advisors**

**Col. Daniel Whitley**

United States Marine Corps

**Leslee Gaul**

Visit Oceanside

**Jonathan Borrego**

City of Oceanside

August 24, 2020

The Honorable Brenda Burman, Commissioner

Bureau of Reclamation

1849 C Street NW

Washington DC 20240-0001

Dear Commissioner Burman:

Our organization is writing to express support for the City of Oceanside, California's application to the U.S. Department of the Interior (DOI) for WaterSMART: Water and Energy Efficiency Grants for Fiscal Year 2021 (Funding Opportunity Announcement [FOA] No. BOR-DO-21-F001). This vital funding would support the deployment of the City's Automated Metering Infrastructure (AMI) and bolster leak detection capabilities in its water distribution system.

The City of Oceanside's AMI project consists of replacing water meters with remote reading capabilities and combining these real-time reads with a customer portal, capable of notifying customers of water use anomalies, high usage as well as suspected leaks. Remote reading capabilities negate the need to physically send staff to take the meter reading, thereby reducing greenhouse gas emissions. Additionally, the use of satellite leak detection technology will further enhance the City's ability to detect leaks quickly in a cost-effective manner.

As you are well aware, Southern California faces many water supply challenges and climate change impacts due to droughts, population growth, as well as legal and environmental constraints. For this reason, it is imperative that agencies such as the City of Oceanside implement programs which ensure that water supplies are being used efficiently as well as reduce our impact on the planet. The Oceanside Chamber recognizes the valuable role that this project plays in using water wisely and reducing the City's carbon footprint and strongly supports the City of Oceanside's approach.

Please accept our recommendation for full and fair consideration, as permitted under law, of the City of Oceanside's application for DOI WaterSMART Water and Energy Efficiency grant funding. If you have any questions, please contact me at [scott@oceansidechamber.com](mailto:scott@oceansidechamber.com)

Sincerely,



Scott Ashton, CEO

Oceanside Chamber of Commerce



August 26th, 2020

The Honorable Brenda Burman  
Commissioner  
Bureau of Reclamation  
1849 C Street NW  
Washington DC 20240-0001

Dear Commissioner Burman:

Our organization is writing to express support for the City of Oceanside, California's application to the U.S. Department of the Interior (DOI) for WaterSMART: Water and Energy Efficiency Grants for Fiscal Year 2021 (Funding Opportunity Announcement [FOA] No. BOR-DO-21-F001). This vital funding would support the deployment of the City's Automated Metering Infrastructure (AMI) and bolster leak detection capabilities in its water distribution system.

The City of Oceanside's AMI project consists of replacing water meters with remote reading capabilities and combining these real-time reads with a customer portal, capable of notifying customers of water use anomalies, high usage as well as suspected leaks. Remote reading capabilities negate the need to physically send staff to take the meter reading, thereby reducing greenhouse gas emissions. Additionally, the use of satellite leak detection technology will further enhance the City's ability to detect leaks quickly in a cost-effective manner.

As you are well aware, Southern California faces many water supply challenges and climate change impacts such as droughts, population growth, as well as legal and environmental constraints. For this reason, it is imperative that agencies such as the City of Oceanside implement programs which ensure that water supplies are being used efficiently as well as reduce our impact on the planet. The San Diego Regional Climate Collaborative recognizes the valuable role that this project plays in using water wisely and reducing the City's carbon footprint and strongly supports the City of Oceanside's approach. The San Diego Regional Climate Collaborative (SDRCC) was established in 2011 as a network for public agencies to advance climate change solutions that mitigate greenhouse gas emissions in the San Diego region. SDRCC partners with academia, non-profit organizations, and business and community leaders, to raise the profile of regional climate leadership; our core membership of 28 organizations accounts for greater than 80% of the San Diego region. SDRCC facilitates core programming in the areas of Energy Efficiency, Climate Action Planning, Coastal Resilience, Climate-Smart Water, and Climate Adaptation. Funding for this project will offer a solution and example of best practices that can be shared and elevated across our network through our climate-smart water program.

Please accept our recommendation for full and fair consideration, as permitted under law, of the City of Oceanside's application for DOI WaterSMART Water and Energy Efficiency grant funding. If you have any questions, please contact me by email at [cdebendict@sandiego.edu](mailto:cdebendict@sandiego.edu).

Sincerely,

A handwritten signature in black ink that reads 'Christiana DeBenedict'.

*Christiana DeBenedict*  
*Director, San Diego Regional Climate Collaborative*  
*[cdebendict@sandiego.edu](mailto:cdebendict@sandiego.edu)*



# FARM BUREAU San Diego County

**The Voice of Local Farmers**  
Serving San Diego agriculture since 1914

September 9, 2020

The Honorable Brenda Burman  
Commissioner  
Bureau of Reclamation  
1849 C Street NW  
Washington DC 20240-0001

Dear Commissioner Burman:

Our organization is writing to express support for the City of Oceanside, California's application to the U.S. Department of the Interior (DOI) for WaterSMART: Water and Energy Efficiency Grants for Fiscal Year 2021 (Funding Opportunity Announcement [FOA] No. BOR-DO-21-F001). This vital funding would support the deployment of the City's Automated Metering Infrastructure (AMI) and bolster leak detection capabilities in its water distribution system.

The City of Oceanside's AMI project consists of replacing water meters with remote reading capabilities and combining these real-time reads with a customer portal, capable of notifying customers of water use anomalies, high usage as well as suspected leaks. Remote reading capabilities negate the need to physically send staff to take the meter reading, thereby reducing greenhouse gas emissions. Additionally, the use of satellite leak detection technology will further enhance the City's ability to detect leaks quickly in a cost-effective manner.

As you are well aware, Southern California faces many water supply challenges and climate change impacts due to droughts, population growth, as well as legal and environmental constraints. For this reason, it is imperative that agencies such as the City of Oceanside implement programs which ensure that water supplies are being used efficiently as well as reduce our impact on the planet. San Diego County Farm Bureau recognizes the valuable role that this project plays in using water wisely and reducing the City's carbon footprint and strongly supports the City of Oceanside's approach.

Please accept our recommendation for full and fair consideration, as permitted under law, of the City of Oceanside's application for DOI WaterSMART Water and Energy Efficiency grant funding. If you have any questions, please contact me at [hannah@sdfarmbureau.org](mailto:hannah@sdfarmbureau.org) or 760-504-4109.

Sincerely,

Hannah Gbeh  
Executive Director  
San Diego County Farm Bureau



# INSTITUTE FOR LOCAL GOVERNMENT<sup>SM</sup>

*Promoting Good Government at the Local Level*

## BOARD OF DIRECTORS

Chair

**Rod Gould**

Former City Manager  
Santa Monica

Vice Chair

**Teresa Acosta**

President  
Acosta and Partners

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City Attorney/City Prosecutor  
Pasadena

**Stanley Caldwell**

Board Member  
Mt. View Sanitary District

**Brett Channing**

Deputy City Manager  
Lake Forest

**Carolyn Coleman**

Executive Director  
League of California Cities

**Hal Conklin**

Former Mayor  
Santa Barbara

**Mark S. Gaughan**

Principal  
Genesee Group

**James Keene**

Former City Manager  
Palo Alto

**Graham Knans**

Executive Director  
California State Association of Counties

**Neil McCormick**

Chief Executive Officer  
California Special Districts Association

**Richard Montgomery**

Mayor  
Manhattan Beach

**Sue Novasel**

Supervisor  
El Dorado County

**Nat Rojanasathira**

Assistant to the City Manager  
Monterey

**Lydia Romero**

City Manager  
Lemon Grove

**Hilary Straus**

General Manager  
Citrus Heights Water District

**CALIFORNIA STATE ASSOCIATION OF  
COUNTIES LIAISON**

**Lee Lor**

Supervisor  
Merced County

**CITY MANAGERS DEPARTMENT LIAISON**

**Pat Martel**

Retired City Manager

**LEAGUE OF CALIFORNIA CITIES BOARD**

**LIAISON**

**Randi Johl**

Legislative Director & City Clerk  
Temecula

**MUNICIPAL MANAGEMENT**

**ASSOCIATION OF SOUTHERN**

**CALIFORNIA LIAISON**

**Nicholas Gonzalez**

Past President

**COUNTY ADMINISTRATIVE OFFICERS**

**ASSOCIATION OF CALIFORNIA LIAISON**

**Dallin Kimble**

County Executive Officer  
Mariposa County

**MUNICIPAL MANAGEMENT**

**ASSOCIATION OF NORTHERN**

**CALIFORNIA LIAISON**

**Monica Davis**

Vice President

September 9, 2020

The Honorable Brenda Burman  
Commissioner  
Bureau of Reclamation  
1849 C Street NW  
Washington DC 20240-0001

Dear Commissioner Burman:

The Institute for Local Government is writing to express support for the City of Oceanside, California's application to the U.S. Department of the Interior (DOI) for WaterSMART: Water and Energy Efficiency Grants for Fiscal Year 2021 (Funding Opportunity Announcement [FOA] No. BOR-DO-21-F001). This vital funding would support the deployment of the City's Automated Metering Infrastructure (AMI) and bolster leak detection capabilities in its water distribution system.

The Institute for Local Government works closely with the City of Oceanside through our Beacon Program, a program designed to celebrate local government's achievements in addressing sustainability and climate change.

The City of Oceanside's AMI project consists of replacing water meters with remote reading capabilities and combining these real-time reads with a customer portal, capable of notifying customers of water use anomalies, high usage as well as suspected leaks. Remote reading capabilities negate the need to physically send staff to take the meter reading, thereby reducing greenhouse gas emissions. Additionally, the use of satellite leak detection technology will further enhance the City's ability to detect leaks quickly in a cost-effective manner.

As you are well aware, Southern California faces many water supply challenges and climate change impacts due to droughts, population growth, as well as legal and environmental constraints. For this reason, it is imperative that agencies such as the City of Oceanside implement programs which ensure that water supplies are being used efficiently as well as reduce our impact on the planet.

The Institute for Local Government recognizes the valuable role that this project plays in using water wisely and reducing the City's carbon footprint and strongly supports the City of Oceanside's approach

Please accept our recommendation for full and fair consideration, as permitted under law, of the City of Oceanside's application for DOI WaterSMART Water and Energy Efficiency grant funding. If you have any questions, please contact me at [kbrowne@ca-ilg.org](mailto:kbrowne@ca-ilg.org) or at 916-761-1256.

Sincerely,

Karalee Browne,  
Director, Sustainable and Resilient Communities Program  
Institute for Local Government

# **Appendix C - Cost Estimate Data**

**City of Oceanside  
BAFO**

#	Item		Final
1)	AMI Network	\$	612,193
2)	Meter Equipment	\$	10,775,474
4)	Concord Installation	\$	4,338,994
5)	SmartWorks MDM	\$	411,355
6)	2% Net10 Payment Discount	\$	(322,760)

Total Concord Install & SmartWorks MDM

**\$ 15,815,255**

Total contracted pricing for  
Phases 1, 2 and 3 of the project

	total # of meters	full price	price with 2% discount	Ph 3 scope @ 26% of total meter population		average price per unit
				# of meters	\$	
Meter Equipment and Lids	44,305	\$ 10,775,474	\$ 10,559,965	11,519	\$ 2,745,625	\$ 238.35
Installation		\$ 4,338,994	\$ 4,252,214		\$ 1,105,576	
subtotal					\$ 3,851,201	
AMI Consultant		\$ 1,455,180	-		\$ 378,347	
total					\$ 4,229,548	

Phase 3 project scope and contracted pricing ONLY  
(does not include MDMS or AMI Network (these costs included in Phases 1 and 2 of the project))



**City of Oceanside  
Cost Proposal  
Meter and Meter Box Lids Equipment**

All costs in the Meter Equipment proposal must include all labor, materials, tools, equipment, overhead, applicable taxes, transportation, shipping, handling and other costs to furnish the equipment at the unit price. These expenses shall be included in the rates provided and shall not be paid separately. Pricing included herein shall include account for compliance with requirements in RFQ and addenda (including but not limited to handling and disposal spoils and waste associated with the project).

Item/Service	Estimated Quantity	Unit	Unit Price	Extended Price	Notes/Comments
<b>Water Meters</b>					
<i>Specify meter type in Notes/Comments. Mechanical water meters are preferred for meters sized from 5/8" to 2". Solid state water meters are preferred for meters sized 3" and above. Polymer composite body water meters and/or polymer composite threads will NOT be accepted by the City.</i>					
<b>Water Meters + Registers + Endpoint/Radio (Complete Water Meter Replacement)</b>					
5/8" x 3/4"	37,433	Each	\$	-	Neptune T10 ProCoder R900i
5/8" x 3/4"	395	Each	\$	-	Neptune T10 ProCoder w/ Cellular MIU(CMIU) 10 Year Data Plan Included
3/4" (short)	683	Each	\$	-	Neptune T10 ProCoder R900i
1"	2,185	Each	\$	-	Neptune T10 ProCoder R900i
1.5"	1,043	Each	\$	-	Neptune T10 ProCoder R900i
2" (10" lay length)	601	Each	\$	-	Neptune HP Turbine ProCoder R900i
2" (17" lay length)	602	Each	\$	-	Neptune T10 ProCoder R900i
<b>Subtotal</b>	42,942		\$	8,878,701.51	

**Register Retrofit + Endpoint/Radio**

1"	299	Each	\$	-	Sensus Register and Neptune Retrofit R900
1.5"	141	Each	\$	-	Sensus Register and Neptune Retrofit R900
2"	159	Each	\$	-	Sensus Register and Neptune Retrofit R900

**Register Retrofit + Endpoint/Radio**

5/8" x 3/4"	480	Each	\$	-	Retrofit ProCoder R900i
3/4"	114	Each	\$	-	Retrofit ProCoder R900i
1"	120	Each	\$	-	Retrofit ProCoder R900i
1.5"	50	Each	\$	-	Retrofit ProCoder R900i
2"	-	Each	\$	-	Retrofit ProCoder R900i
3"	19	Each	\$	-	Octave Module Nicor Connected to R900 Radio
4"	13	Each	\$	-	Octave Module Nicor Connected to R900 Radio
6"	4	Each	\$	-	Octave Module Nicor Connected to R900 Radio
8"	9	Each	\$	-	Octave Module Nicor Connected to R900 Radio
10"	2	Each	\$	-	Octave Module Nicor Connected to R900 Radio

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<b>Subtotal</b>	1,410		\$	314,375.31	
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## Ancillary Equipment for Water Meters

### Ancillary Equipment for Large Meters

Test Port for 3" with locking ball valve and plug	102	Each	\$	-	Custom Test Port Spool 24" w/ Victaulic Coupling
Test Port for 4" with locking ball valve and plug	74	Each	\$	-	Custom Test Port Spool 24" w/ Victaulic Coupling
Test Port for 6" with locking ball valve and plug	32	Each	\$	-	Custom Test Port Spool 24" w/ Victaulic Coupling
Test Port for 8" with locking ball valve and plug	27	Each	\$	-	Custom Test Port Spool 24" w/ Victaulic Coupling
Test Port for 10" with locking ball valve and plug	4	Each	\$	-	Custom Test Port Spool 24" w/ Victaulic Coupling
Check Valve for 3"	102	Each	\$	-	Matco Norca UL/FM Swing Check Valve
Check Valve for 4"	74	Each	\$	-	Matco Norca UL/FM Swing Check Valve
Check Valve for 6"	32	Each	\$	-	Matco Norca UL/FM Swing Check Valve
Check Valve for 8"	27	Each	\$	-	Matco Norca UL/FM Swing Check Valve
Check Valve for 10"	4	Each	\$	-	Matco Norca UL/FM Swing Check Valve
Estimated Nuts, Bolts and Gaskets	1	Lump Sum	\$	-	Assumption is 4 Flange Connection Points Per Large Meter Install Details By Size Listed Below under "Other Ancillary Equipment"
<b>Subtotal</b>			\$		311,409.48

*Reference RFQ (Section 6.5.vii.k), the attachments, and the addenda for specifications and details on the ancillary equipment. Proposer to add line items if necessary.*

<b>Water Meter Box Lids</b>				<i>Specify lid type in Notes/Comments. Include part number and load ratings.</i>	
9" x 14" lid (5/8" and 3/4" meters)	39,105	Each	\$	-	DFW Lid P/N: DFW481C-AF4PF DP OCS<>-L
12" x 20" lid (1" meters)	2,604	Each	\$	-	DFW Lid P/N: DFW486C-4PF DP OCS<>-LID
13" x 24" lid (1.5" meters)	1,234	Each	\$	-	DFW Lid P/N: DFW1324C-4PF DP OCS<>-LD
17" x 30" lid (2" meters)	1,362	Each	\$	-	DFW Lid P/N: DFW1640C-4PF DP OCS<>-LD
			\$	-	\$
<b>Subtotal</b>	44,305		\$		1,177,017.35

**TOTAL Meter and Meter Box Lids Equipment** **\$ 10,681,503.65**

**City of Oceanside  
Cost Proposal**

***Optional Equipment/Services That Can Be Provided On An As Need Basis By Ferguson***

All costs in the Optional Equipment/Services proposal must include all labor, materials, tools, equipment, overhead, per diem, applicable taxes, shipping, transportation (i.e. travel time, mileage, fuel, and lodging), and other costs to perform the work and provide the equipment at the unit price. These expenses shall be included in the rates provided and shall not be paid separately. Pricing included herein shall include account for compliance with requirements in RFQ and addenda.

	Quantity	Unit	Unit Price	Extended Price	Notes/Comments
<b>AMI System Options</b>					
Solar powered AMI collector/repeater	1	Each	N/A	N/A	
Dual Port RF module	1	Each	N/A	N/A	
Bid Item	1		N/A	N/A	
<b>Subtotal</b>				\$ -	

**Water Meter Options**

**Water Meters**

3/4" long	Each	\$	-	-	<i>Neptune T10 ProCoder R900i</i>
2"	Each	\$	-	-	<i>2" Krohne Mag Meter w/ R900 Radio</i>
3"	Each	\$	-	-	<i>3" Krohne Mag Meter w/ R900 Radio</i>
4"	Each	\$	-	-	<i>4" Krohne Mag Meter w/ R900 Radio</i>
6"	Each	\$	-	-	<i>6" Krohne Mag Meter w/ R900 Radio</i>
8"	Each	\$	-	-	<i>8" Krohne Mag Meter w/ R900 Radio</i>
10"	Each	\$	-	-	<i>10" Krohne Mag Meter w/ R900 Radio</i>
2" Ultrasonic	Each	\$	-	-	<i>Neptune 2" Mach10 R900i (10"LL, 15-1/4"LL, 17"LL)</i>
4" Fire Service UL/FM Meter w/ Strianer & Check Valve	Each	\$	-	-	<i>4" Neptune Stainless Steel Protectus Fire Service</i>
6" Fire Service UL/FM Meter w/ Strianer & Check Valve	Each	\$	-	-	<i>6" Neptune Stainless Steel Protectus Fire Service</i>
8" Fire Service UL/FM Meter w/ Strianer & Check Valve	Each	\$	-	-	<i>8" Neptune Stainless Steel Protectus Fire Service</i>
10" Fire Service UL/FM Meter w/ Strianer & Check Valve	Each	\$	-	-	<i>10" Neptune Stainless Steel Protectus Fire Service</i>
3" Octave Meter w/ Encoder Module	Each	\$	-	-	<i>Master Meter P/N: O303-M1-D09, 965-010-54</i>
4" Octave Meter w/ Encoder Module	Each	\$	-	-	<i>Master Meter P/N: O304-M1-D09, 965-010-54</i>
6" Octave Meter w/ Encoder Module	Each	\$	-	-	<i>Master Meter P/N: O305-M1-D09, 965-010-54</i>

8" Octave Meter w/ Encoder Module	Each		\$	-	Master Meter P/N: O306-M1-D09, 965-010-54
10" Octave Meter w/ Encoder Module	Each		\$	-	Master Meter P/N: O303-E1-D09, 965-010-54
3" Mach10	Each		\$	-	Neptune Mach10 R900i
4" Mach10	Each		\$	-	Neptune Mach10 R900i
6" Mach10	Each		\$	-	Neptune Mach10 R900i
8" Turbine	Each		\$	-	Neptune HP Turbine ProCoder R900i
10" Turbine	Each		\$	-	Neptune HP Turbine ProCoder R900i

**Other Meter & Endpoint Options**

Residential Remote Disconnect Water Meter	Each	N/A	N/A		Provide unit price if option is available.
Dual port RF module	Each	N/A	N/A		Provide unit price if option is available.
Water Quality Sensors	Each	N/A	N/A		Provide unit price if option is available.
Mobile Hydrant Meter with endpoint/radio (capable of transmitting GPS location)	Each	N/A	N/A		Provide unit price if option is available.
Octave Module	192	Each	\$	-	Octave Module for New Octave Meter Install
R900 w/ Nicor	192	Each	\$	-	R900 w/ Nicor for New Octave Meter Install
Hi-Gain Antenna	458	Each	\$	-	Neptune Hi-Gain Antenna
<b>Subtotal</b>			\$	93,970.48	

**City of Oceanside**  
**Cost Proposal**  
**Meter & Meter Equipment Installation Services - Concord Utility Services**

All costs in the Installer proposal must include all labor, materials, tools, equipment, overhead, per diem, transportation (i.e. travel time, mileage, fuel, and lodging), and other costs to perform the work at the unit price. These expenses shall be included in the rates provided and shall not be paid separately. Pricing included herein shall include account for compliance with requirements in RFQ and addenda (including but not limited to handling and disposal spoils and waste associated with the project).

Item/Service	Estimated Quantity	Unit	Unit Price	Extended Price	Notes/Comments
<b>Installation Services</b>					
Performance and Payment Bond (Installation related)	1	Lump Sum		\$ -	<i>Installation Performance and Payment Bond</i>
<b>Water Meter, Register, Endpoint/Radio and Ancillary Equipment (Large Meter) Installation</b>					
5/8" x 3/4"	37,828	Each		\$ -	<i>Ancillary equipment may include washers, gaskets, nuts and bolts. For large meter installation (3" and above), include in your unit price the installation of test port, and check valve. Reference RFQ (Section 6.5.vii.k), the attachments, and the addenda for assumed conditions for each installation.</i>
3/4"	683	Each		\$ -	
1"	2,185	Each		\$ -	<i>All meters installs 5/8-2" Include Gaskets and Bolts</i>
1.5"	1,043	Each		\$ -	
2"	1,203	Each		\$ -	
3"	83	Each		\$ -	
4"	61	Each		\$ -	
6"	28	Each		\$ -	<i>All meter installs 3-10" Include Installation of Meter, Test Port, and Check Valve. (Meter, Test Port, Check Valve, Gaskets and Bolts are Purchased Separately)</i>
8"	18	Each		\$ -	
10"	2	Each		\$ -	
<b>Subtotal</b>	43,134			\$ 3,297,298.32	

**Register Retrofit and Endpoint/Radio Installation**

For large meter retrofit (3" and above), **include** in your unit price the installation of test port, and check valve. Reference RFQ (Section 6.5.vii.k), the attachments, and the addenda for assumed conditions for each installation.

Retrofit Quantities below were modified to match to the number of Neptune meters that have been sold to City of Oceanside under the current meter contract. Any Sensus Meter 5/8-3/4" would be a full meter changeout and quantities have been moved to the full meter changeout section above.

5/8"x 3/4"	480	Each	\$	-
3/4"	114	Each	\$	-
1"	419	Each	\$	-
1.5"	191	Each	\$	-
2"	159	Each	\$	-
3"	19	Each	\$	-
4"	13	Each	\$	-
6"	4	Each	\$	-
8"	9	Each	\$	-
10"	2	Each	\$	-
<b>Subtotal</b>	<b>1,410</b>		<b>\$</b>	<b>158,839.58</b>

All meters retrofits 3-10" Include Installation of Meter, Test Port, and Check Valve. (Meter, Test Port, Check Valve, Gaskets and Bolts are Purchased Separately)

**Water Meter Box Lid Installation**

Install Meter Box Lid (5/8" through 2" Meters)	44,305	Each	\$	-
<b>Subtotal</b>	<b>44,305</b>		<b>\$</b>	<b>373,934.20</b>

**Installation Professional Services**

Project Management	1	Lump Sum	\$	-
Work Order Management System Setup and Integration with City's CIS	1	Lump Sum	\$	-
Large Water Meter Survey	1	Lump Sum	\$	-
Bid item			\$	-
Bid item			\$	-

Document existing conditions, dimensions (lay length, vault, etc.), and installation details of ALL of City's existing 3" and above meters. With City assistance, verify isolation valves are operable.



**Subtotal** \$ 224,285.63

**Facilities**

City will provide the Installer the requested square footage in an outdoor area (not an enclosed building) that is within a gated City-owned property for the duration of the project. The Installer is responsible for the ownership and security of the equipment (e.g. meters, registers, radios, lids) until installation is complete and approved by the CITY. Installer responsible to provide office trailer including technology (e.g. phone, wifi, etc.). Contractor to provide temporary power and security fencing. Installer responsible for sewer collection and disposal. City will not provide a forklift for use.

Mobilization for the Proof of Concept Phase	1	Lump Sum	\$	-	Not to exceed 1% of the "Total Water Meter + Equipment Installation"
Mobilization for the Full Deployment Phase	1	Lump Sum	\$	-	Not to exceed 1% of the "Total Water Meter + Equipment Installation"
Monthly Facility Fee for Full Deployment Phase that accounts for:					
Storage & Equipment Warehousing					
Mobile Office Trailer for Contractor Personnel					
Restroom Facilities for Contractor Personnel					
Storage Containers	26	Months	\$	-	
Forklift(s)					
Staging Site Security					
Recycling Bins					
Garbage Bins					
Disposal					
De-mobilization and Cleanup	1	Lump Sum	\$	-	Not to exceed 1% of the "Total Water Meter + Equipment Installation"
Security Fencing	1	Lump Sum	\$	-	Includes 6'x500lf chain link security fencing, post in dirt, 2x24' gates. Excludes permits, install in hard ground, hillside install, core drilling or inaccessible areas.
Site Improvement - Site Grading for Site Access	1	Lump Sum	\$	-	Contingency for site improvements. Ferguson to invoice at cost plus 15%.
Temp Power	1	Lump Sum	\$	-	Temp Power includes 100 amp service underground to temp meter pole, Trenching for underground, planning and professional services, SDG&E work order coordination, 30 months of estimated service.
Temp Water	1	Lump Sum	N/A	N/A	Water Service and Usage Fees to be provided and paid by the city.
<b>Subtotal</b>			\$	284,636.35	
<b>TOTAL WATER METER + EQUIPMENT INSTALLATION</b>			\$	<b>4,338,994.08</b>	

AMI Consultant

AMI IMPLEMENTATION PROGRAM MANAGEMENT SERVICES									
Task Name	Fee Type	Monthly Fee	Duration of Task	Total Hours	Total Labor Fee	Estimated Person-Trips	Estimated Travel and Expenses	Total Labor + Expenses	
<b>Task 1 - Program Planning and Startup</b>				336	\$ 71,840		\$ 3,000	\$ 74,840	
Task 1.1 - Program Planning, Kickoff and Discovery	Monthly	\$ 35,920 /month	2 months	336	\$ 71,840	2	\$ 3,000		
<b>Task 2 - Business Process Re-Engineering</b>				776	\$ 137,120		\$ 15,000	\$ 152,120	
Task 2.1 - Current State Business Process Definition	Fixed			120	\$ 21,600	2	\$ 3,000		
Task 2.2 - Future State #1 (Conceptual)	Fixed			120	\$ 21,600	2	\$ 3,000		
Task 2.3 - Future State #2 (Final)	Fixed			120	\$ 21,600	2	\$ 3,000		
Task 2.4 - Business Process Audits	Fixed			192	\$ 32,640	4	\$ 6,000		
Task 2.5 - Develop Change Management Plan	Fixed			120	\$ 21,600				
Task 2.6 - Project and Operational Staffing Planning	Fixed			104	\$ 18,080				
<b>Task 3 - Proof of Concept</b>				3,018	\$ 607,540		\$ 64,500	\$ 672,040	
Task 3.1 - Proof of Concept (POC) Initial Kickoff and Integration Planning	Fixed			88	\$ 19,040	4	\$ 6,000		
Task 3.2 - Field Support Services - Fixed Network Deployment	Fixed			418	\$ 74,560	6	\$ 9,000		
Task 3.3 - Support Proof of Concept Deployment									
Task 3.3.1 - Support Alpha POC Deployment	Monthly	\$ 19,040 /month	3 months	276	\$ 57,120	6	\$ 9,000		
Task 3.3.2 - Support Beta POC Deployment	Monthly	\$ 18,800 /month	6 months	552	\$ 112,800	8	\$ 12,000		
Task 3.4 - Support System Training	Fixed			208	\$ 42,880	2	\$ 3,000		
Task 3.5 - Support Systems Integration	Monthly	\$ 13,460 /month	9 months	558	\$ 121,140	5	\$ 7,500		
Task 3.6 - Support System Testing	T&M NTE		8 weeks	508	\$ 109,600	6	\$ 9,000		
Task 3.7 - Large Water Meter and Special Account Planning	Fixed			410	\$ 70,400	6	\$ 9,000		
<b>Task 4 - Communications and Public Outreach</b>				144	\$ 24,480		\$ 1,500	\$ 25,980	
Task 4.1 - Communications and Public Outreach Guidance	Fixed			144	\$ 24,480	1	\$ 1,500		
<b>Task 5 - Full Deployment Data Quality Assurance and Utilization</b>				962	\$ 186,740		\$ 15,000	\$ 201,740	
Task 5.1 - Full Deployment Data Quality Assurance and Utilization	T&M NTE		24 months	962	\$ 186,740	10	\$ 15,000		
<b>Task 6 - Full Deployment Field Support Services</b>				1,300	\$ 225,280		\$ 18,000	\$ 243,280	
Task 6.1 - Field Deployment Plan	Fixed			132	\$ 25,920	2	\$ 3,000		
Task 6.2 - Full Deployment Oversight and Installation Quality Assurance	T&M NTE		24 months	1,168	\$ 199,360	10	\$ 15,000		
<b>Task 7 - Project Close Out / Post Deployment Support</b>				194	\$ 40,140		\$ 6,000	\$ 46,140	
Task 7.1 - Project Closeout	Fixed			194	\$ 40,140	4	\$ 6,000		
<b>Task 8 - Program Management</b>				184	\$ 39,040		\$ -	\$ 39,040	
Task 8.1 - Program Management - Fee is Embedded in each Task above									
Task 8.2 - Jira Project Management Software	T&M NTE			184	\$ 39,040				
					\$ 1,332,180		\$ 123,000		
						<b>Total Labor + Expense Fee</b>		<b>\$ 1,455,180</b>	

Total contracted pricing for Phases 1, 2 and 3 of the project



# **Appendix D - Utilis Satellite Leak Detection Proposal**



Potable Water Leaks Survey  
A Proposal to City of Oceanside, CA



**Proposal & Scope of Work**

Prepared by: Utilis Inc.

September 4, 2020



## 1. TECHNICAL DESCRIPTION

The City of Oceanside proposes to conduct a comprehensive potable water leak detection and real water loss reduction program by deploying the Utilis satellite radar survey service. In 2016 Utilis commercialized the process of locating subsurface, background potable water pipe leaks from space using synthetic aperture radar (SAR). This microwave radar is emitted from a satellite or other moving airborne platform and used to detect the signature of wet soil underground with a potable water indication. This technology is the same as is used to search for underground water on other planets such as Mars.

Utilis leverages the capabilities of multiple satellites equipped with L-band Synthetic Aperture Radar as a sensor for detailed examination of the earth. The satellite moves in polar orbit which allows it to capture data over the exact same swath of the earth approximately every 14 days. A large-scale image is generated typically on the scale of 30 miles wide by 40 miles long.

SAR can be used for remote detection of underground water such as drinking water leakage from an urban water system. Water sources such as leaking pipes, lakes, or swimming pools, reflect EM waves both below and above ground level. Every material has inherent electric properties, called the dielectric constant, creating an identifying marker that allows distinguishing between different backscatter properties using SAR. Therefore, drinking water saturated soil has a specific signature in SAR data that can be isolated by Utilis to find water leaks.

SAR sensors placed on an elevated platform such as a satellite or an aircraft send EM waves at a known frequency towards an area and receive the EM backscatter from that area. The signals are processed and compiled into an “image” of the area. This includes backscatter from water sources and other landmarks such as buildings and topographical features of the area.

For Utilis to identify the water related backscatter, all other signals (e.g., EM noise reflection) are filtered or removed from the scan. Since different water sources (e.g., drinking water, sewage, seas, lakes swimming pools, etc.) have different dielectric constants, it is possible to distinguish one from the other. Unwanted targets are filtered out or removed from the scan thus leaving only the signal backscattered from pipeline water leakages (the signal from drinking water mixed with soil). The Utilis method can detect signals of potable water up to 6 feet underground and it is not impacted by surface conditions such as pavement or landscaping. The entire process used by Utilis is propriety and patented. The result is a GIS-based map showing points of interest (POI) where there are likely potable water pipe leaks. This map of POI’s and associated Likely Leaking Locations (LLLs) is then used to direct the boots-on-the-ground (BOTG) field inspection teams to confirm and pinpoint the leak location.



The Utilis approach to finding leaks is analogous to a doctor performing triage on a patient to determine where the most acute problems are located. The entire water system is scanned and only the most likely leaking locations are identified for further BOTG field inspection. This amounts to 5 -10% of the total length of pipe, therefore reducing the area needed to inspect.

The POI's are the centroid of an LLL zone within which the field crews are to focus their attention. The LLL zone stretches up to 300 feet from the POI. All pipes within the LLL zone are inspected for leak noise using acoustic devices. Typically, all the listening points (e.g. meters, valves, curb stops, hydrants, etc.) within the LLL zone will be accessed to search for leak noise. The Utilis imaging does not locate the point in the pipe that is leaking but senses the result of the leak, wet subsurface soil. Therefore, the POI location is typically not the exact location of the leak. The LLL zone is identified to direct the BOTG crews where to search.

It is proposed that Utilis provide four satellite images and resultant POI/LLL maps to the city over a period not to exceed 12 months. Based on feedback with city of Oceanside personnel the specific LLLs to be inspected with the manpower allocated will be selected. Not all of the LLLs will be inspected with the crew day resources budgeted. The scope and progression of work is detailed in Water Savings section of this proposal. A final report will be prepared after the work is completed that documents the leaks found, their size and location, and calculates the actual real water loss identified and value proposition. Data will be collected and analyzed to determine the technical efficacy of the program as it compares to the expectations stated in this proposal. Actual real water loss savings and ROI will be calculated.

## **2. ESTIMATED WATER SAVINGS**

### **2.1. Current Status**

The city of Oceanside has submitted to the state of California a FY 2018 – 2019 Water Audit. The audit reports that the average daily system supply is 20 MGD. It is further reported that total non-revenue water is 1.54 MGD, total water losses are 1.49 MGD, apparent water losses are 0.47 MGD, and, real water losses are 1.02 MGD. The water audit also notes that the city has 591 miles of potable water mains and 44,598 active and inactive service connections. Average system pressure is listed at 97 psi. The cost of water production is \$5.04 per 1000 gallons and the average retail customer price for water is \$10.68 per 1000 gallons.

A report from the city, dated 8/31/2020, lists the total potable water system pipe length at 615 miles. The pipe ranges in size from 1 inch to 42 inches in diameter. 62.8 % of the pipe is AC, 22.9 % is PVC, 6.7 % is DIP and 3.9 % is listed as concrete. There are a smaller number of pipes types that are 1 % or less of the total pipe length.

It has been reported that the state of California has raised questions regarding the city's submission as there appears to be uncertainty related to the water loss figures presented in the document. For



example, the real water loss is shown to be 5.1% of system demand which is very low. Typical systems of this size and age have a real water loss of 15 – 20%.

As such, data and results obtained from a system that has similar characteristics will be used to estimate the conditions in Oceanside and the overall water savings and ROI expected.

## **2.2 Water Savings and ROI Calculations**

The performance estimate for the work proposed at Oceanside will be modelled on the actual results obtained at New Braunfels Utility (NBU) in Texas. NBU has a similar size, type and age system as Oceanside. The NBU system contains 573 miles of water mains. It has a documented 18% non-revenue water rate. The results from Utilis directed NBU work has been published in a number of places including the January 2020 Opflow edition. In that work a total of four satellite deliveries were submitted to NBU and a total of 229 leaks were detected. A total of 816 LLLs were identified and all of them were physically inspected in the field. This means that 28 % of the LLLs inspected resulted in finding a leak. 44 % of the 229 leaks, or 101, were utility side leaks. The rest of the leaks identified were on the customer side of the meter. The utility side leaks were found on water mains, service lines, meters, valves, curb stops and at service connections. These all have varying degrees of leak sizes based on AWWA Manual M36 and a compilation average of 1,800 traditional BOTG projects in North America. It has been calculated that the average utility side leak is 3.2 GPM. This value will be used to calculate leak flow rate and subsequent real water loss recovery from the work in Oceanside.

The scope of work for Oceanside is planned to proceed in two steps, with two satellite images per step. The first two images will be collected one month apart and each is expected to generate 200 LLLs. These 400 LLLs will be reviewed with the city and a total of 250 will be selected for field inspection. It is anticipated that it will take 25 crew days to inspect the 250 LLLs, 10 LLLs per day is an average capability of trained field leak crews. Therefore, each service step will generate approximately 70 leaks (28 % of 250 LLLs). Of those 70 leaks, 44 %, or 31, are expected to be utility side leaks. Most leaks found by the Utilis satellite directed program, approximately 60% on average, are non-surfacing leaks. They would not be noticed or identified unless the satellite program was employed, meaning they would go unnoticed for long periods of time.

Based on the average of 3.2 GPM per utility side leak, this equates to a total real water loss rate of 99 GPM, or, 143,000 GPD. This step will be repeated a second time using two additional satellite images and another 25 days of field inspection work. Therefore, it is expected that a total of 286,000 GPD of real water loss will be identified by the Utilis satellite service program in 50 days of field inspection work.



Based on a total cost of water production & delivery of \$5.04 per 1,000 gallons the value of this lost water is \$1441 per day or \$526,000 per year. The total cost of the satellite directed leak detection program consists of the satellite survey and the field leak inspection. The four satellite surveys will cost a total of \$120,000 based on surveying the entire Oceanside system of 600 miles each time. The field leak inspection/BOTG cost is based on a contract crew cost of \$1,600 per day. In order to inspect significant portion of the LLL/POIs provided by the satellite survey a total of 50 crew days will be needed, for a total crew cost of \$80,000. Thus, the total cost of the satellite leak inspection program is \$200,000.

The water loss savings and subsequent value to the city would accrue over a period of one year. Thus the simple payback period of this effort is approximately 5 months. The ROI is calculated to be 163%. This one-year program will save the city of Oceanside 104.4 MGY or 321 acre-feet per year (AFY)





### 3. REFERENCES & SUPPORTING STUDIES

- I. **Webinar:** [“Growth Opportunities in the Global Non-revenue Water \(NRW\) Smart Leak Management”](#)
  - a. *This webinar produced by Frost & Sullivan explores the business case for NRW management. After watching the webinar, the viewer will have learned about growth opportunities in this field, discover new solutions to add value, and identify emerging technologies and their synergies.*
  - b. Featuring: Fredrick Royan and Paul Hudson, (Frost & Sullivan), Lauren Guy (CTO/Co-Founder, UTILIS)
  
- II. **Webinar:** [“NEW Case Study: Validation of Utilis vs. Traditional Methods”](#)

*This webinar will explore a case study initiated by the Prince William County Service Authority in Virginia. In this study, the Utilis method of satellite-based leak detection was compared with using only traditional acoustic methods in the same area. Results and conclusions will be presented.*

  - a. Featuring: Karen Dubey (Marketing Director, Utilis) and Paul Gagliardo (Senior Technical Fellow, Utilis)
  
- III. **Webinar:** [“Demystifying Satellite-Based Leak Detection”](#)

*This webinar delves deeper into how Utilis finds leaks using L-band Synthetic Aperture Radar. The presentation is 35 minutes with 25 minutes of Q&A included.*

  - a. Featuring: James Perry (VP of Business Development, Utilis)
  
- IV. **Webinar:** [“Survey your water distribution system from space”](#)
  - a. *Learn how Utilis can scan a water utility’s system and identify trouble spots using satellite remote sensing technology, featuring a case study on the town of Hilton Head, South Carolina. By using satellite-based assessment, a single hidden leak responsible for \$1.5M of water loss was discovered.*
  - b. Featuring: Gadi Kovarsky (Director of National Accounts, Utilis)
  
- V. **Article:** [“Assessing The Effectiveness Of Leak-Seeking Satellites”](#)
  - a. *This case study explores the results when Central Arkansas Water (CAW) performed a pilot study using the Utilis solution.*
  - b. Author: Paul Gagliardo (Senior Technical Fellow, Utilis)
  
- VI. **Article:** [“Remote Imaging Reaches beyond Antiquities”](#)



- a. *Three projects in Italy led by 2f Water Venture are explored in relation to regulatory drivers and savings.*
  - b. Author: Paul Gagliardo (Senior Technical Fellow, Utilis)
  
- VII. **Article:** [“Satellite Leak Detection: A Data-Driven Business Case Analysis”](#)
  - a. *This study explores the concept of benchmarking and calculates a benchmark for traditional acoustic leak detection that can be compared against Utilis results.*
  - b. Author: Paul Gagliardo (Senior Technical Fellow, Utilis)
  
- VIII. **Article:** [“Detecting Leaks with Satellite Imagery”](#)
  - a. *This case study reviews twelve months of monthly data taken as part of a California Energy Commission grant program over Duarte, CA. The Utilis solution was shown to save energy via reducing pumped water leaks.*
  - b. Author: Paul Gagliardo (Senior Technical Fellow, Utilis)
  
- IX. **Article:** [“Proof through Pilot Testing”](#)
  - a. *This case study compares the results from traditional acoustic vs. satellite leak detection over the same area in the Prince William County Service Authority.*
  - b. Author: Paul Gagliardo (Senior Technical Fellow, Utilis)
  
- X. **Article:** [“Using Satellite Data to Keep Water at Bay”](#)
  - a. *This use study was prepared by a GIS customizer/integrator, Cityworks.*
  - b. Author: Chris Kulchak, POWER Engineers
  
- XI. **Article:** [“Satellite data complement traditional leak detection and repair programs”](#)
  - a. *This study used four deliveries at New Braunfels Utilities. Utilis was shown to be able to identify 4.1 leaks per crew day as compared with the traditional method of 0.06 leaks per day in 2018. This is a 70-times improvement in the program’s efficiency. The satellite program was shown to have a 95 percent lower cost per leak found, at \$678 versus \$14,130 for the traditional program.*
  
- XII. **Article:** [“Satellite Data to Detect Leaks in Oman”](#)
  - a. *This project found 2024 leaks in Oman with the yearly value of water loss savings of 7.26 OMR.*
  - b. Author: Paul Gagliardo, Senior Technical Fellow, Utilis

#### 4. CLIENT PROJECT SPECIFICS

During this service, Utilis will survey the following area of interest (AOI)\* (figure 1.1) and ~600 miles of main and service lines within the image boundaries.



Figure 1.1: *City of Oceanside AOI*

#### Utilizing Multiple Imagery

Often utilities deprioritize proactive leak detection and standard maintenance efforts due to resource constraints. In most cases utilities are forced to use limited resources for **Client** call-ins or work orders to find, dig, and repair. This results in falling further behind the curve and results in increased pipe breakage. In order to re-invest in proactive system maintenance and leak detection, Utilis provides a highly efficient means to survey points of interest and avoid blindly surveying an entire utility’s system of pipes. Multiple images and deliveries over time are recommended to keep up with the demands.

#### Multiple flyover images are important due to the following factors:

- A single image will identify 20-30 % of the leaks in an AOI on average, and it has been seen that additional images within a defined timeframe will add 20 - 25% more leaks within the same AOI, thus increasing the efficiency of the service.
- Multiple images will begin to identify clusters of leaks whereby identifying areas the **Client** can focus its efforts in the future.
- These clusters of leaks can be used for asset management planning purposes, e.g. capital improvement replacement planning.
- Leaks are continuously arising and enlarging, thus multiple images over the course of a year, or over a period of years, will continue to generate a significant number of leaks even in areas previously inspected.



**5. PROJECT BUDGET**

The budget for the Utilis satellite directed leak detection program consists of two parts: the cost of the satellite surveys and the cost of the field leak inspections. There are four satellite surveys proposed that cover the entire Oceanside system at a cost of \$30,000 each. In order to inspect significant portion of the LLL/POIs provided by the satellite surveys and maximize the lost water savings a total of 80 crew days are required at a cost of \$1,600 per day.

SATELLITE LEAK DETECTION SERVICE PRICING				
	PHASE 1		PHASE 2	
Delivery number	1	2	3	4
Miles of pipe analyzed per delivery	600 Miles	600 Miles	600 Miles	600 Miles
Utilis delivery package (GIS layer, leaks sheets, data form)	included	included	included	included
U-Collect, U-View licenses	included	included	included	included
Client territory setup: <ul style="list-style-type: none"> <li>Utilis Database and GIS files set up</li> <li>Dashboard, U-Collect &amp; U-View licenses and applications set-up</li> </ul>	included	N/A	N/A	N/A
Kick-off meeting \$5,000	included	N/A	N/A	N/A
Total Utilis Data Analysis	\$30,000	\$30,000	\$30,000	\$30,000
Field Leak Detection for pinpointing (sub-contracted and certified to use Utilis SAR technology)	-	\$1,600/day	-	\$1,600/day
Recommended Field Leak Detection**	-	25 days	-	25 days

OVERALL PROPOSED PROJECT BUDGET			
ITEM	UNIT COST	NUMBER	TOTAL
Satellite Survey	\$30,000/Service*	4	\$120,000
Field Inspection	\$1,600/Day	50**	\$80,000
<b>Total</b>			<b>\$200,000</b>

\*Price per delivery is based on a minimum of 4 delivers in 12 months cycle.

\*\*Price per day is fixed. Minimum of 5 days. Final number of field inspection days is recommended to maximize the lost water savings. Final number can be determined by Utility based on allocated budget.



**6. PROPOSED SCHEDULE**

ANNUAL / 12 MONTH CYCLE		
PHASE 1		
1	Client Database Territory Setup	Month 1
2	Image 1 Acquisition	Month 2
3	First Analysis Delivery	Month 2
4	Image 2 Acquisition	Month 3
5	Second Analysis Delivery	Month 3
6	I Acoustic Field Survey – 25 days	Month 4 -5
PHASE 2		
7	Image 3 Acquisition	Month 6
8	Third Analysis Delivery	Month 6
9	Image 4 Acquisition	Month 7
10	Fourth Analysis Delivery	Month 7
11	II Acoustic Field Survey – 25 days	Month 8-9
12	Final Cost/ Benefit analysis report	Month 10-11

# **Appendix E - Draft Resolution**

1 RESOLUTION NO.

2 RESOLUTION OF THE CITY COUNCIL OF THE CITY OF  
3 OCEANSIDE AUTHORIZING WATERSMART WATER AND  
4 ENERGY EFFICIENCY GRANT FISCAL YEAR 2021

5 WHEREAS, the United States Bureau of Reclamation (USBR) is soliciting  
6 applications for authorized projects for WaterSMART: Water and Energy Efficiency  
7 Grant (Program) Funding for Fiscal Year 2021 per Funding Opportunity Announcement  
8 No. BOR-DO-20-F001; and

9 WHEREAS, the City of Oceanside has 44,000 active water meters in the system  
10 and desires to implement a project to convert a portion of the meters to Advanced Meter  
11 Infrastructure; and

12 WHEREAS, the City of Oceanside is seeking grant funding to further fund  
13 portions of a design and construction of the Project; and

14 WHEREAS, the City of Oceanside has been awarded \$1,500,000 for the  
15 Advanced Meter Infrastructure for the Program for Fiscal Year 2020; and

16 WHEREAS, the City of Oceanside has prepared and submitted a grant  
17 application under this Program for Fiscal Year 2021 with an application due date of  
18 September 17, 2020;

19 WHEREAS, USBR has directed applicants to include in its application an official  
20 resolution adopted by the applicant's board of directors or governing body verifying 1)  
21 the identity of the official with legal authority to enter into an agreement, 2) the board of  
22 directors, governing body, or appropriate official who has reviewed and supports the  
23 application submitted, 3) the capability of the applicant to provide the amount of  
24 funding and/or in-kind contributions specified in the funding plan, and 4) that the  
25 applicant will work with Reclamation to meet established deadlines for entering into a  
26 grant or cooperative agreement.

27 NOW, THEREFORE, the City Council of the City of Oceanside does resolve as  
28 follows:

1 1. The City Manager or her designee is authorized to submit an application to the  
2 United States Bureau of Reclamation (USBR) to obtain a WaterSMART: Water and  
3 Efficiency Grant Funding for Fiscal Year 2021 per Funding Opportunity Announcement  
4 No. BOR-DO-20-F001; and

5 2. The City Council has reviewed and supports the application submitted on the  
6 17th day of September, 2020; and

7 3. The City of Oceanside is able to provide the minimum 50% funding match  
8 specified in the funding plan for the application; and

9 4. The Water Utilities Director of the City of Oceanside is hereby authorized and  
10 directed to prepare the necessary data, conduct investigations, file such application, and  
11 execute a grant agreement with the USBR in association with this application process.  
12 The City of Oceanside will work with the USBR to meet established deadlines required for  
13 entering into a cooperative agreement to obtain the aforementioned grant funding.

14 PASSED AND ADOPTED by the City Council of the City of Oceanside, California,  
15 this \_\_\_\_\_ day of \_\_\_\_\_, 2020, by the following vote:

16  
17 AYES:

18 NAYS:

19 ABSENT:

20 ABSTAIN:

21  
22 \_\_\_\_\_  
23 MAYOR OF THE CITY OF OCEANSIDE

24 ATTEST:

24 APPROVED AS TO FORM:

25  
26 \_\_\_\_\_  
27 City Clerk

25  
26 \_\_\_\_\_  
27 City Attorney



1 RESOLUTION NO. 20-R0611-1

2 RESOLUTION OF THE CITY COUNCIL OF THE CITY OF  
3 OCEANSIDE AUTHORIZING WATERSMART WATER AND  
4 ENERGY EFFICIENCY GRANT FISCAL YEAR 2021

5 WHEREAS, the United States Bureau of Reclamation (USBR) is soliciting  
6 applications for authorized projects for WaterSMART: Water and Energy Efficiency  
7 Grant (Program) Funding for Fiscal Year 2021 per Funding Opportunity Announcement  
8 No. BOR-DO-20-F001; and

9 WHEREAS, the City of Oceanside has 44,000 active water meters in the system  
10 and desires to implement a project to convert a portion of the meters to Advanced Meter  
11 Infrastructure; and

12 WHEREAS, the City of Oceanside is seeking grant funding to further fund  
13 portions of a design and construction of the Project; and

14 WHEREAS, the City of Oceanside has been awarded \$1,500,000 for the  
15 Advanced Meter Infrastructure for the Program for Fiscal Year 2020; and

16 WHEREAS, the City of Oceanside has prepared and submitted a grant  
17 application under this Program for Fiscal Year 2021 with an application due date of  
18 September 17, 2020;

19 WHEREAS, USBR has directed applicants to include in its application an official  
20 resolution adopted by the applicant's board of directors or governing body verifying 1)  
21 the identity of the official with legal authority to enter into an agreement, 2) the board of  
22 directors, governing body, or appropriate official who has reviewed and supports the  
23 application submitted, 3) the capability of the applicant to provide the amount of  
24 funding and/or in-kind contributions specified in the funding plan, and 4) that the  
25 applicant will work with Reclamation to meet established deadlines for entering into a  
26 grant or cooperative agreement.

27 NOW, THEREFORE, the City Council of the City of Oceanside does resolve as  
28 follows:

1 1. The City Manager or her designee is authorized to submit an application to the  
2 United States Bureau of Reclamation (USBR) to obtain a WaterSMART: Water and  
3 Efficiency Grant Funding for Fiscal Year 2021 per Funding Opportunity Announcement  
4 No. BOR-DO-20-F001; and

5 2. The City Council has reviewed and supports the application submitted on the  
6 17th day of September, 2020; and

7 3. The City of Oceanside is able to provide the minimum 50% funding match  
8 specified in the funding plan for the application; and

9 4. The Water Utilities Director of the City of Oceanside is hereby authorized and  
10 directed to prepare the necessary data, conduct investigations, file such application, and  
11 execute a grant agreement with the USBR in association with this application process.  
12 The City of Oceanside will work with the USBR to meet established deadlines required for  
13 entering into a cooperative agreement to obtain the aforementioned grant funding.

14 PASSED AND ADOPTED by the City Council of the City of Oceanside, California,  
15 this 7th day of October, 2020, by the following vote:

16  
17 AYES: WEISS, FELLER, KEIM, RODRIGUEZ, SANCHEZ

18 NAYS: NONE


19 ABSENT: NONE

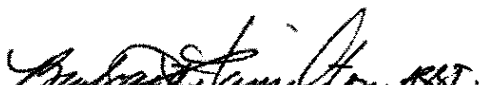
20 ABSTAIN: NONE

21  
22   
23 MAYOR OF THE CITY OF OCEANSIDE

24 ATTEST:

24 APPROVED AS TO FORM:

25  
26   
27 City Clerk

26   
27 City Attorney