Project Name:

City of Oceanside
Advanced Metering Infrastructure Phase I Project

Prepared For:

U.S. Department of the Interior - Bureau of Reclamation
WaterSMART Grants:
Water and Energy Efficiency Grants Fiscal Year 2019
Funding Opportunity Announcement No. BOR-DO-19-F004

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6.1 Executive Summary

Date: March 19, 2019
Applicant Name: City of Oceanside
City, County, State: Oceanside, San Diego, California
Project Name: City of Oceanside Advanced Metering Infrastructure Phase I Project
Funding Group: Group 2
Grant Funding Request: $1,500,000
Non-Federal Matching Funds: $7,371,924
Total Project Costs: $8,871,924
Est. Project Schedule: 7/2019 – 9/2022 (may include work completed and costs incurred between 7/2019 and grant award date which is anticipated in 9/2019, per this FOA)
Est. Duration from contract award date: Three years
Federal Facility Denotation: The Project is not located on a federal facility

Project Summary

The City of Oceanside (City, Oceanside) is responsible for providing reliable, high quality water to its 175,000 residents through approximately 44,500 metered connections. The City's Water Utilities Department has embraced advanced metering infrastructure (AMI) as a best management practice and proven method to reduce water consumption through water use efficiency, and requests funding from the United States Bureau of Reclamation (Reclamation) through its 2019 WaterSmart Water and Energy Grant (WEEG) Program to implement the "City of Oceanside Advanced Metering Infrastructure Phase I Project" (Project). The Project will begin implementation of the City's larger effort to install AMI meters and its related infrastructure throughout the City's service area. The Project scope includes: 1) Installation of AMI network and infrastructure components and retrofit of approximately 21,689 existing meters in the Phase I areas to AMI-compatible "smart meters" to connect nearly 49% of the City's meters to the AMI network, 2) A public outreach campaign to roll out the City's cloud-based "WaterSmart Analytics" customer engagement portal software (portal) and educate customers about the enhanced functionality and tools available through the online dashboard when paired with near real-time consumption data, and 3) An enhanced marketing campaign geared to inform customers about incentives available through the regional SoCalWaterSmart Rebate Program administered by Metropolitan Water District of Southern California (MWD). The Project aligns strongly with the objectives of Reclamations' WaterSmart WEEG Program, as it will result in a measurable savings of treated water and improved water flow management and tracking. AMI will provide the City and its customers access to real-time flow consumption data that will allow for the early identification of water leaks and line breaks, allowing customers to observe instantaneous usage data including abnormal consumption patterns. The Project will empower customers with the

ability to track daily water usage. The Project will amplify public outreach and awareness initiatives between the City and its customers.

6.2 Background Data

6.2.1 Source of Water Supply, Water Rights, Potential Water Supply Shortfall

MWD is Southern California's wholesale water agency, and San Diego County Water Authority (SDCWA) is the largest customer among MWD's 26-member agencies. MWD derives its water supply from the Colorado River via the Colorado River Aqueduct (CRA), and the State Water Project (SWP) via the California Aqueduct. In 1998, SDCWA entered into a transfer agreement with Imperial Irrigation District (IID) to purchase conserved agricultural water. Through the agreement, SDCWA received 70,000 acre-feet (AF) in from IID in 2010 and will receive an annually-increasing volume up to 200,000 AF by 2021 for 75 years. Through the 2003 Quantification Settlement Agreement (QSA) on the Colorado River, SDCWA also receives 77,700 AF per year of conserved water from lining of the All-American and Coachella Canals for 110 years (RWMG, 2013). In October 2015, SDCWA began purchasing and treating desalinated seawater from the Carlsbad Desalination Plant, which is operated by Poseidon Resources Group. This desalinated seawater is blended into SDCWA's treated water supply and delivered to SDCWA's member agencies. Of the SDCWA water supply purchased by the City, approximately 20% is treated and 80% is raw (untreated). Additional information regarding SDCWA's historical, current, and planned supplies is available in SDCWA's *2015 Urban Water Management Plan (2015 UWMP;* SDCWA, 2016). Approximately 90% of the City's water is purchased from the SDCWA. The remaining 10% is supplied by groundwater from the Mission Basin, a sub-basin of the San Luis Rey Valley Groundwater Basin (DWR Bulletin 118 Groundwater Basin No. 9-7). The Mission Basin is not adjudicated but is estimated to have a natural safe yield of 7,000 to 10,000 AFY. The basin is also shared with the local tribal nations. Brackish groundwater is pumped from the Mission Basin from wells located within the City and is treated at the Mission Basin Groundwater Purification Facility (MBGPF) with desalination technologies. The City does not currently use and does not plan to use self-supplied surface water as part of its water supply. The City also produces and distributes recycled water which is further described below in **Section 6.2.2**.

SDCWA supplies significant portion of the City's water which is sourced from SWP, CRA and local resources. The City's reliance on water from SDCWA makes it vulnerable to the potential impairment of any component of the imported water system. As a coastal city, the City is concerned about the potential impacts of climate change-related sea level rise affecting the Mission Basin. The City is located an area with limited rainfall in average years, and the potential for changes in precipitation patterns pose a threat in the City's ability to sustainably manage and utilize its local resources. A climate change vulnerability assessment included in the *San Diego*

Integrated Regional Water Management Plan (IRWM Plan; RWMG, 2013) concluded that climate change would result in a 164,000 AFY shortfall in imported water supply for the San Diego region.

6.2.2 Current Customers and Water Delivery System

The City is a water retailer, distributing and metering potable and recycled water to residential, commercial, agricultural, and dedicated irrigation customers. In Fiscal Year (FY) 17 the City's cumulative potable water use was 24,842 acre feet (AF). 275.1 AF were distributed through the recycled water system in FY17. **Table 6.2-1** shows potable water use by customer classification in FY17. The City's unaccounted for water was 8.2% in 2015 and 6.75% in both FY 16 and FY 17.

Table 6.2-1 FY17 Demands for Potable Water

Customer Classification	Description	Volume (AFY)	Percentage of Total
Single Family	Single family residential detached dwelling	10,366.2	59%
Multi-Family	More than one residential dwelling unit serviced by the meter: Duplex, townhome, condominium, apartments, mobile homes.	4,136.4	
Commercial	Non-residential domestic service	2,399.7	10%
Industrial	Businesses whose discharge to the wastewater system have high concentrations of BOD, TSS and /or ammonia.	719.6	3%
Landscape Irrigation	Urban landscapes on dedicated meters	4,587.5	18%
Agricultural Irrigation	Irrigation of commercially grown crops or other dedicated agricultural connections	928.8	4%
Accounted Losses		59.2	7%
Unaccounted Losses		1,644.6	0.2%
Total Potable Water Use		24,842	100%

Table 6.2-2 shows the number of accounts by customer classification in FY 17.

Table 6.2-2: FY 17 Account Classifications

User Type	Number of Accounts	%
Single Family	38,524	87.85
Multi-Family	2,050	4.67
Commercial	1,653	3.77
Industrial	12	0.03
Landscape	1,493	3.40
Agricultural Irrigation	119	0.27
Rural	3	0.01
TOTAL	**43,854**	**100**

The City's water distribution system includes 12 storage reservoirs located throughout the service area. SDCWA supplies both treated and raw imported water to the City through five aqueduct connections. Raw water is treated at the City's Robert A. Weese Water Filtration Plant (WFP) which discharges potable water directly into the City's distribution system in the southeastern sector of the City. These potable water sources are distributed to customers through 574 miles of pipelines extending throughout the City and ranging from two to 42 inches in diameter. The City plans to expand its recycled water system, currently comprised of 7.31 miles of pipeline and three metered connections, through increased deliveries to irrigation customers and development of an Indirect Potable Reuse (IPR) project. The IPR project will not only produce potable water but will also create recycled water and is expected to provide approximately 3,360 AFY of supplies to the recycled water system by 2020.

6.2.3 Current and Projected Water Demand

The City's 2015 Urban Water Management Plan (UWMP) (UWMP, 2016) includes the following projected water demands through the year 2040, by customer classification. FY17 actual demands were added to the UWMP's projected estimates, shown in **Table 6.2-3**. The 2015 UWMP includes demand projections that represented best estimates of population growth and water use. In reality, water demands remain lower than anticipated. Demand projections will most likely be adjusted downward in forthcoming planning documents such as the 2020 Water Master Plan and 2020 UWMP.

Table 6.2-3: Actual and Projected Demands for Potable Water

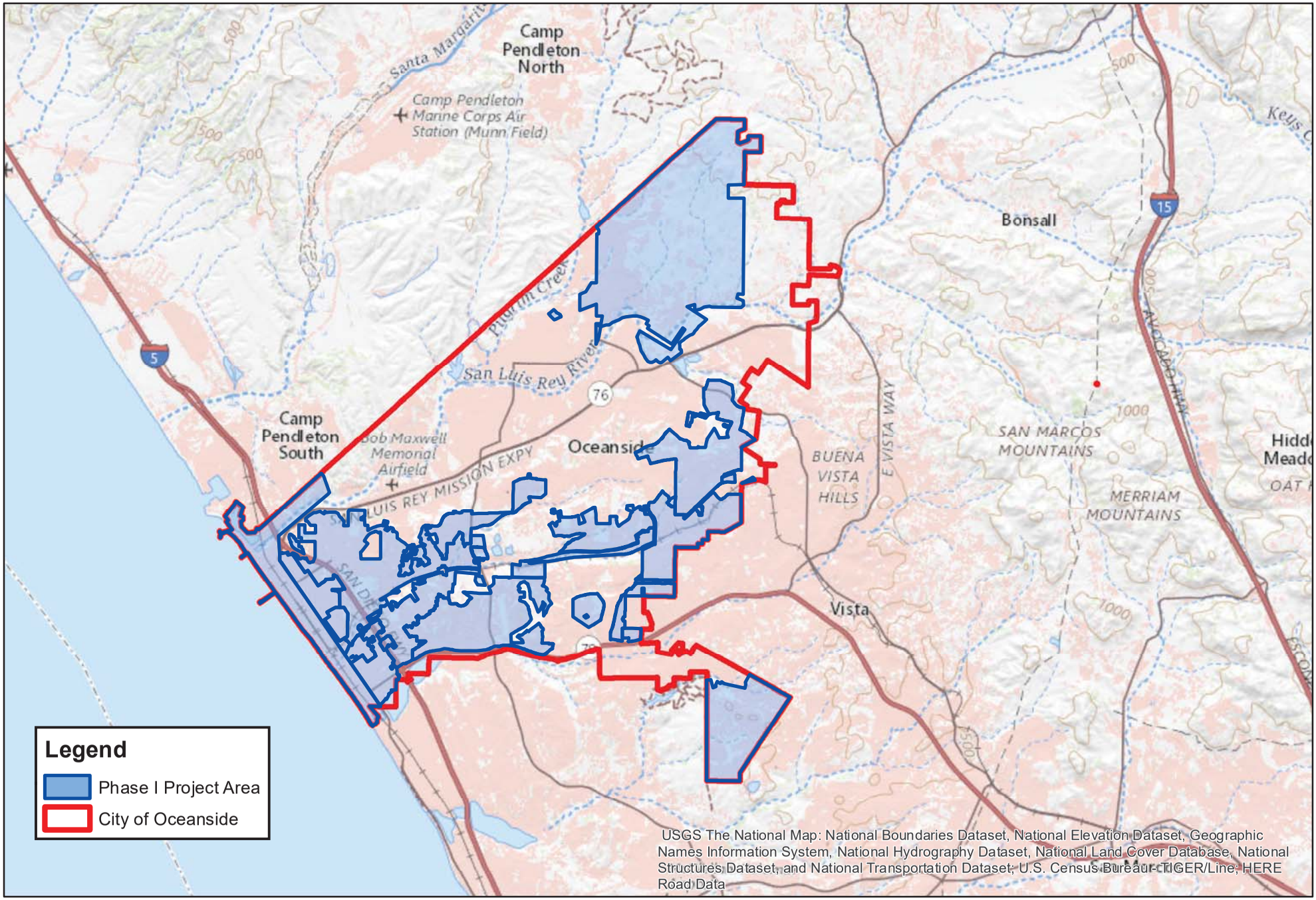
Use Type	2017	2020	2025	2030	2035	2040
Single Family	10,366	13,464	13,225	12,726	12,548	12,418
Multi-Family	4,136	4,405	4,246	4,039	3,959	3,886
Commercial	2,400	2,920	2,986	3,028	3,150	3,265
Industrial	720	809	850	880	928	975
Landscape	4,588	5,888	5,967	5,248	5,541	5,467
Agricultural Irrigation	929	1,889	1,888	1,895	1,895	1,895
Losses	1,704	1,953	2,053	2,097	2,109	2,131
TOTAL	**24,842**	**31,328**	**31,215**	**29,913**	**30,130**	**30,037**

6.3 Past Working Relationships with Reclamation

The City's MBGPF Demonstration Project was authorized in 1996 under 43 U.S.C. 390h-12m as a 3.0 million gallons per day (MGD) expansion of the Demonstration Project in Oceanside, California. Through 2012, Reclamation has awarded the City $3.35 million in federal cost-share grant dollars through Title XVI to plan, design and construct a portion of the Title XVI-authorized 3.0 MGD MBGPF expansion. In April 2016, the City applied for and was awarded $35,905 for the MBGPF Third Stage Reverse Osmosis Pilot Testing under Reclamation's Water Reclamation Research Program (FOA No. R16-FOA-DO-011). The pilot testing investigated adding a third stage reverse osmosis (RO) system to the MBGPF to recover up to 45% of the brine that was discharged to an ocean outfall. In July 2018, the City applied for and was awarded $2,626,500 for the MBGPF Well Expansion and Brine Minimization project under Reclamation's Desalination Construction Projects under the WINN Act (FOA No. BOR-DO-18-F012). This project will install additional groundwater extraction wells and brine minimization technology that will increase the recovery at the MBGPF.

6.4 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 6.4-1** for a Project Location Map. The Project will include installation of AMI smart meters and supporting infrastructure in Downtown Oceanside, the agriculturally intensive northwestern areas of the City, and southeastern boundary areas of the City limits.



Scale in Miles

0 1 2

Date of Exhibit: 3/15/2019
DigitalGlobe Aerial Image: 04/2013

USBR WaterSMART: Water and Energy Efficiency Grants FY 19

City of Oceanside Advanced Metering Infrastructure Phase 1 Project

Figure 6.4-1 Project Location Map

6.5 Technical Project Description

6.5.1 Project Description

The Project will jump start the City's long-planned and highly anticipated AMI initiative. The scope of work includes construction and integration of the AMI network, installation of approximately 21,689 smart meters, radio telemetry/antenna masts, and the integration of the AMI system with the existing customer interface platform (the online dashboard where customers view their water usage and bill). The Project will connect nearly 49% of all meters in the overall service area (approximately 21,689/44,500). The new AMI system will enable wireless transmission of water use data to the City and its customers via a web/cloud-based access portal on a near real-time basis (raw data will be collected every 15 minutes, which then may be averaged at an increment to be determined increment). Currently, water consumption data is collected predominantly through a manual, monthly meter read. A request for proposals (RFP) will be issued and competitive bid process will be conducted to hire the AMI vendor that will be responsible for providing a turnkey, fully-automated, two-way AMI system including all associated equipment and installation services. The Project includes implementation of a data collection network and software to manage the AMI system, enabling communication of data between the City and the smart meter endpoints and management of communication flow across the network. A meter data management system (MDMS) will be installed with the capability of providing detailed analytics and adaptive business intelligence as well as the ability to interface with the City's current billing system and portal. In addition, the Project will include an outreach campaign to brand the City's cloud-based "WaterSmart Analytics" software (portal) and educate customers on the portal's expanded AMI supported functionality. Finally, the Project will include an enhanced marketing campaign intended to encourage participation in landscape transformation and irrigation device incentives that, when installed, result in quantifiable water savings. These incentives are available to all qualified commercial and residential customers through the regional SoCalWaterSmart Rebate Program (socalwatersmart.com) operated by MWD. Up to five customer-oriented workshops will be delivered to provide in-depth training on the portal. In addition, the City's customer service representatives will be trained on functionality of the portal and methods of providing assistance to customers. The enhanced SoCalWaterSmart marketing campaign will distribute information about the rebate programs through the portal. Information will also be dispersed at the City-sponsored workshops. Materials and training curriculum for the workshops including presentations, flyers, and website content; as well as social media content to promote SoCalWaterSmart Rebate Program will be prepared.

Project Scope

- Installation of AMI network infrastructure and the retrofit of approximately 21,689 existing meters to AMI-compatible "smart meters".
- A public outreach and education campaign to introduce customers to the new WaterSmart Analytics software and inform customers about the enhanced functionality and tools available through the portal when paired with near real-time consumption data.
- An enhanced marketing campaign geared to inform customers about incentives available through the regional SoCalWaterSmart Rebate Program.

Table 6.5-1 lists the size and quantity of smart meters that will be installed as part of the Project.

Table 6.5-1: Meter Installation by Size and Quantity

Meter Size	Quantity
5/8	17,733
3/4	550
1	1,863
1-1/2	639
2	725
3	106
4	47
6	13
8	12
10	1
Total	**21,689**

6.5.2 Project Activities

Project Administration

Project administration for the grant includes all activities required to oversee, manage and report on the Project.

Design/Engineering/Environmental/Permitting

The City is investigating its need to prepare a Conditional Use Permit (CUP) to comply with City ordinances. The process for obtaining a CUP entails completing any required application and preparing relevant plans, environmental declarations/reports, maps, and community outreach plan(s). The City will file a Notice of Exemption (NOE), as applicable, to comply with CEQA/NEPA.

Construction Contracting

A RFP will be issued and a competitive bid process will be conducted to procure contract(s) for an AMI vendor(s) that will be responsible for providing a fully-automated, two-way AMI system, associated equipment, and installation services including but not limited to the following relevant elements:

- A data collection network and software integration to help manage the system, enabling communication of data between the City system and smart meter endpoints to manage the flow of communication across the network.
- A MDMS with the capability to provide detailed analytics and adaptive business intelligence to the City as well as the ability to interface with its current billing system and the portal.
- Smart meters, radio telemetry/antenna masts, and associated support costs for vendor to upgrade meter boxes, as needed (such as new meter lids, covers, dumpsters, trash receptacles, storage containers, portable restrooms).

Note: The City has already purchased the portal software and those costs are not part of the Project scope or work or budget. The integration and programming of the existing portal platform are included in the Project scope of work.

Construction Implementation

Implementation includes installation of approximately 21,689 smart meters, installation of the AMI network infrastructure and related appurtenances, planning and execution of the portal outreach and education campaign, and implementation of the enhanced SoCalWaterSmart marketing campaign by a vendor. It also includes installation and testing of the entire communications network to ensure that smart meters are properly connected to the existing City infrastructure and the AMI system is appropriately synching the cloud-based portal. Tasks associated with these efforts include:

- Installation, inspection, and connectivity testing of AMI infrastructure network to other nodes within the AMI system as well as to the City's existing communications network.
- Installation, inspection, and connectivity testing of smart meters to AMI system, and installation of any required upgrades to meter boxes.
- System integration, start up, and operations testing.
- Development of marketing materials and workshops required to execute portal outreach and education campaign.
- Planning and execution of enhanced SoCalWaterSmart marketing campaign, including development of collateral materials such as social media content, flyers, website enhancements.

6.5.3 Anticipated Project Schedule

Table 6.5-2 below shows the anticipated Project schedule.

Table 6.5-2: Anticipated Project Schedule

Anticipated contract approval	September 2019
Project Administration	September 2019 – September 2022
Environmental/Cultural Resources Review	November 2019 – September 2020
Construction Contracting & Construction Implementation	July 2019 – September 2022

6.6 Evaluation Criteria

6.6.1 Evaluation Criterion A - Quantifiable Water Savings

Municipal Metering Project

The proposed Project is considered a municipal metering project according to the WaterSmart WEEG FOA and includes additional supporting water use efficiency elements. Water savings from the Project will be achieved by developing the AMI infrastructure, connecting the portal to the AMI system, and conducting an outreach and education campaign to encourage customer use of the portal. Water savings are realized through the devices that are installed at customer properties in the Phase I Project area during the Project (2019-2022), and by promoting the SoCalWaterSmart Rebate Program. The City believes that as customers interface with the portal to gain a greater understanding of their consumption patterns by comparing against their own past consumption and consumption of similar households/businesses, they will be motivated to implement water use efficiency measures. Customers will also be informed of leaks and breaks or unusual consumption patterns on a real-time basis through alarms and the data accessible through the portal, allowing for more expeditious repair/correction of water waste than prior to Project implementation. As detailed in this section, estimated water savings for the Project is 23,667 AF.

Determining Annual Average Water Savings from the Project

Note: The following assumptions are referenced and further discussed in this section:

Total # of meters in City	44,500
Total # of smart meters to be installed	21,689
Smart meters as a % of total meters in City (=21,689 meters/44,500 meters)	49%
Total water supplied to City in FY 17	24,842
Total estimated water supplied to smart meters (49% x total water supply)*	12,173
% of system water loss in FY 17 & 18	6.75%
% of recoverable water losses	4.5%
% water savings derived from implementation of the portal	5%

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

Project Element	Water Savings (AFY)	Lifetime Water Savings (AFL)
1. Estimated water savings from avoided water loss of due to installation of 21,689 smart meters to the AMI system:	548	(548 AFY x 20 Years) = 10,960
2. Estimated water savings generated from customer interface with the portal:	609	(609 AFY x 20 Years) = 12,180
3. Estimated water savings generated from customer participation in SoCalWaterSmart Rebate Program:	44	527
TOTAL estimated water savings from the Project:	1,201	23,667

The section below provides a detailed discussion of the assumptions and AFY calculations used to quantify estimated water savings resulting from implementation of the Project.

Determining current distribution system losses

The City found that water loss accounted for 6.75% of total water supplied in FYs 17 and 18. A copy of Water Audit Reports for both years are provided in Appendix B. AWWA Water Loss Audit methodology was used to calculate loss. This percentage of water loss is used as the basis to estimate water savings from the reduction in water loss.

Support/Documentation and Assumptions Regarding Estimated Water Savings

Estimated water savings generated from reduction in non-revenue/unaccounted for water loss:

Connection of 21,689 smart meters to the AMI system enables the City and its customers to receive alarms and notification of major and minor leaks along with abnormal use patterns quickly, resulting in a quantifiable reduction in water use. Several independent studies quantify water savings from reduced water loss and are the basis for water savings assumptions for the Project. After implementing AMI, a case study conducting in the City of Santa Maria showed that non-revenue water loss was reduced by 67%, as reported in WaterWorld Magazine (Godwin 2011). A 2013 report by the US EPA found public water systems could reduce water loss in their distributions systems by 75% (EPA 2013).

To calculate estimated water savings from avoided water loss, the more conservative number of 67% is used with respect to reductions in loss among the 21,689 newly installed smart meters. Water savings from reduced water loss is calculated as:
$(12{,}173\ AFY\ flowing\ through\ 21{,}689\ meters\ * 6.75\%) * 67\% = 548\ AFY$ X 20 years (manufacturer warranty on smart meter is assumed to be 20 years).

Estimated water savings generated from connecting the AMI system to the portal and increasing customer use of the portal: A study done for East Bay Municipal Utility District (East Bay MUD) showed that AMI, coupled with the same WaterSmart Analytics software (WaterSmart.com) that the City owns, was estimated to provide an average water savings of 5%. The study results suggest that water savings accrue as a result of the social norming that occurs when customers gain knowledge and understanding of their own consumption patterns, enabled through the use of the cloud-based portal and accessibility to real time water use data. Furthermore, end-users are further encouraged to take steps to achieve greater water use efficiency when they can compare their current water to historic use, other similar users, and high efficiency users. Currently, the portal displays data that is fed from the City's billing system, but this data is based upon monthly meter reads. When the Project is complete, near-real time data will be fed to the portal from the new AMI system, giving customers an accurate and timely picture of their water use. This expanded understanding of water use may empower end-users down a path that results in the adoption of additional water efficiency measures, including those incentivized through the SoCalWaterSmart Rebate Program.

Estimated water savings that result from the provision of real-time AMI data and social norming information newly accessible to customers via the portal are calculated as follows:
$(12{,}173\ AFY\ flowing\ through\ 21{,}689\ smart\ meters * 5\% = 609\ AFY$ x 20 years) (No studies were found to support the length of the portal's useful life; therefore 20 years will be assumed, in line with the useful life of the AMI system).

Estimated water savings generated from customer participation in SoCalWaterSmart Rebate Program (FY 19-21): Projections of water savings were obtained from reports generated by the member agency SoCalWaterSmart dashboard. Reports were generated in March 2019 showing the City's FY 19 year-to-date (YTD) participation in the rebate program. Water savings estimates for the Project are based on projected FY 19 participation, multiplied by three years (FY19-21), multiplied by .5 (assumes conservative participation levels). Estimated water savings associated with the Project are based on rotating nozzle and weather-based irrigation controller (WBIC) rebates issued to City customers through the rebate program and are as follows:

Total Quantity of Rebates Issued	Average Annual Water Savings	Water Savings over life of Project
1,163	44 AFY	527 AFL

Note: devices differ in length of useful life.

Installation of Distribution Main Smart Meters

The Project does not include installation of distribution main smart meters.

Types and Quantities of Meters to be Installed

The make and model of the AMI smart meters will be determined with the selection of a contractor. The City will be installing a total of 21,689 smart meters. Meter breakdown by size and quantity is shown in **Table 6.5-1,** included in the previous section.

Actual Water Savings Verification Upon Project Completion

The City will use the AWWA method for computing water losses on an annual basis, which will quantify reduction in leaks (water loss). A sample set of accounts will be selected to compare water consumption for a set period of time before and after properties have been retrofitted with smart meters and customers have received access to the portal. Before and after data may also be compared against control groups who did not receive AMI upgrades in an attempt to further quantify savings and changes in water use as a result of the Project. Water savings created by installation of irrigation devices incentivized by the SoCalWaterSmart Rebate Program will be calculated using the water savings values accepted by MWD and applied to the actual number of rotating nozzle and WBIC devices that were rebated to City customers between FYs 19 and 21.

6.6.2 Evaluation Criterion B—Water Supply Reliability

The Project Addresses Specific Reliability Concerns

The City currently purchases approximately 90% of its potable water supply from the SDCWA, of which 11% is supplied by the SWP and 72% is supplied by the 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 23,667 AF over the course of the Project's 20-year service life. 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. Through implementation of the Project, the City will be able to reduce its purchases of water from the SDCWA, thereby reducing demands imported supplies, including those from the MWD via CRA, SWP via the Bay Delta. The groundwater basin from which the City pumps is subject to the Sustainable Groundwater Management Act and conservation measures, such as those that will be realized through implementation of the Project, will help achieve sustainable groundwater management goals.

Drought conditions are currently waning. However, 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 empower behavior modification as we compare our consumption patterns to our neighbors and larger community – all translating to the Project's quantifiable water savings while reducing reliance on imported and local water resources - making those supplies available for other uses, or to remain in-stream. Water retailers throughout the region which are supplied with water 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 SWP and Colorado River Basin will help entities such as Reclamation meet their obligations to deliver water to projects or partners supplied by the SWP and Colorado River Basin.

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

The Project will make more water available for in-stream flows for the sources of the Sacramento Bay-Delta and Colorado River Basin. By reducing demand on these source supplies, the conserved water will remain at its source which will help maintain in-stream flows and overall ecosystem health. The Project will provide more water to the natural environment and to species reliant on water from these sources. 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. The result of this and other diversions is a decrease in flows to support the Lower Colorado River ecosystem. The 2004 Lower Colorado River Multi-Species Conservation Program protects 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 local survival of those 17 non-listed species. 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, thereby supporting the health of the river and restoring and enhancing habitat for all those 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 all sectors (residential, commercial, agricultural, irrigation) as AMI will be extended to the mix of smart meter sizes listed in the previous section. The Project will also have benefits for the local Indian tribes in the City's service area. The City encompasses the San Luis Rey Band of Luiseño Indian tribal lands. The San Luis Rey Band of Luiseño Indians have water rights within the Mission Groundwater Basin. As the City conserves water, more water to stay in the groundwater basin, improving the quality and quantity of water available for the tribe. The Project will benefit the tribes by increasing sustainability and diminishing reliance on imported supplies.

A recent geospatial analysis found that a population of approximately 16,500 people lived within disadvantaged communities (DACs), and total of 32% of the City's service area qualified as DAC by geographical location. 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% median household income 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. On a regional scale, more water would be made available to other parts of the State, including tribes and rural and economically disadvantaged communities, by 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 of the proposal. Please see **Section 6.6.4** 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 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 installing water efficient devices. By reducing water consumption and demand for imported water supplies, a water-related crisis or conflict such as that experience in 2015 and 2016 in California (resulting in mandated cutbacks of 25% State-wide and 20% for the City) can be deferred and/or avoided. The City will promote participation in MWD's regional SoCalWaterSmart Rebate Program through the Project's enhanced marketing campaign, described above in **Section 6.5**. Participation in the rebate program results in quantifiable water savings accrued from the installation of water savings devices (incentivized by the rebate program) on customers' properties. The enhanced portal will foster collaboration and interaction amongst customers and the City as end-users gain a greater sense of water consumption, and a sense of how it compares to their neighbors, water-efficient users, and to themselves over time.

6.6.3 Evaluation Criterion C—Implementing Hydropower

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

6.6.4 Evaluation Criterion D—Complementing On-Farm Irrigation Improvements

Agricultural irrigation and related agricultural practices comprise approximately 4% of the potable water demands for the City. Deployment of AMI technology and full utilization of the portal will assist current and future on-farm improvements by giving agricultural customers access to near real-time data. The Environmental Quality Incentives Programs (EQIP) offered by local Natural Resources Conservation Districts (NRCDs) has preliminary requirements for participation which include having access to robust water usage data. Mission Resources Conservation District (MRCD) is the local NRCD for the City. MRCD has completed 14 irrigation evaluations (technical assistance) to growers in the City's service area in the last five years. Irrigation evaluations provide information about flow rate and uniformity distribution of the existing irrigation system and are a predecessor to an agricultural grower participating in EQIP. To date, these irrigation evaluations have led to six conservation plans being developed, three of which resulted in EQIP grants. Additional data provided by AMI also helps inform on-farm improvements that are considered part of a grower's irrigation water management best management practices, recognized by USBR. Such practices include the use of 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%. Using a conservative estimate of 5% reductions due to SNB efficiency programming enabling by enhanced access to data through AMI and the portal, a water savings of 43 AFY (.05 water savings x .04 water to agriculture customers x 24,842 AFY used in FY17) could be realized in the City's service area.

There has been marked interest by agricultural water users in the City's service area to have access to near real-time water use data that AMI offers. AMI-generated data provides the information to enable growers to identify leaks and line breaks swiftly and react to abnormal consumption patterns. In addition, this near real-time data gives a grower the ability to determine the amount of water delivered to a crop. This irrigation data enables the grower to accurately deliver the right amount of water to a crop by comparing actual water use against a 'water budget' that calculates weather data, evapotranspiration and plant factor variables. AMI allows growers to document water usage, a requirement in the acquisition of additional certifications, such as sustainability certifications. Additional discussions with local farmers have

indicated that by allowing the automation of irrigation practices, AMI technology would enable a shift in irrigation scheduling that complements the City's production and distribution system operations.

6.6.5 Evaluation Criterion E—Department of the Interior Priorities

Creating a Conservation Stewardship Legacy Second Only to Teddy Roosevelt

The increasing demand coupled with the at times unpredictable water supply in California due to complex sources and water rights has caused the State of California, Department of Water Resources, water utilities, environmental organizations, and other key stakeholders to develop a set of urban best management practices for water conservation.

The City has worked as a part of it long range planning efforts to seek ways to meet ongoing and future water demands and make its supply more reliable. The Project is part of this ongoing effort. These planning efforts are reliant utilizing the best available science, and comes from a variety of local, regional, statewide, and national sources to identify best management practices for managing its water resources and planning for the future. One of these planning measures is the Urban Water Management Plans. These plans are required by the Urban Water Management Planning Act California Water Code (CWC) Division 6, Part 2.6, which required urban water providers to adopt Urban Water Management Plans every five years. This requirement 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 Urban Water Management Plan states different demand management measures planned for use in the City's service area. AMI is specifically called out in the latest plan as one of the 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 best management practices for efficiently managing the City's water supply and adapting to any unforeseen changes in the environment. The City forecasts an increase from current water demands through 2040 as shown in **Table 6.2-3**. The water conservation efforts brought about by the recent drought will most likely end as people's attitudes and water use patterns change since the official declaration of the drought ended in 2017 by former Governor Brown. This shift, combined with anticipated population increase, are some of the drivers for water demand increasing. This will require the City to be more efficient with its use of water as balances demand increases and reliability of its supply. Conserving more water will assist in relieving cyclical drought conditions over time and will result in more water being available 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 furthest places for water to be delivered from the Colorado River Basin and the

SWP. 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 takes into account the SWP and does not factor in the energy requirements for importing water from the Colorado River Basin to Southern California. Therefore, any reduction in water demand from the City as a result of this Project will therefore reduce energy demands from pumping water to the City and make it available for other uses.

Restoring Trust with Local Communities

The Project will allow the City to be a better neighbor to those it shares resources with by reducing its demand from water from already taxed sources: the SWP and Colorado River Basin. While this is not entering a direct dialogue with its neighbors, it demonstrates an initiative to improve relationships in the region by lessening its need for water, a critical resource that many others also need in the area and who also have the same limited sources for this water.

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 their existing system with AMI technology benefits the entire region through early leak detection, reducing demand and allowing more water to be available to others. This early leak detection will also allow for better maintenance to be performed, since the system will be able to identify areas in which maintenance is needed and also where it can be deferred until a later time.

6.6.6 Evaluation Criterion F—Implementation and Results

6.6.6.1 Project Planning

Several planning efforts provide support for the Project. In 2016, the City updated their *Water Conservation Plan* (City of Oceanside, 2016b) which identified water conservation measures to implement in order to comply with SBx7-7. The Water Conservation Plan identified the top water users within the City to be residential and dedicated irrigation customers, comprising 78% of all water consumers. Recommended water conservation measures included aggressive water conservation programs, extended recycled water phases, and AMI. The Water Conservation Plan identified AMI as an effective tool in reducing the City's unaccountable losses of water within the system by detecting leaks and improving meter efficiency. The City's customers will benefit through improved leak detection and notification. The City also updated the UWMP in 2016 and remain in compliance with the Urban Water Management Planning Act in the California Water Code. The UWMP guidelines require a specific set of demand management measures (DMMs) to be reported on in the UWMPs, including Water Waste Prevention Ordinances, Metering, Conservation Pricing, Public Education and Outreach, Programs to Assess and Manage Distribution System Real Loss, and 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 identified AMI technology as one of the measures used to help them meet conservation measures. The City's UWMP can be found at the following link: https://www.ci.oceanside.ca.us/civicax/filebank/blobdload.aspx?blobid=42608

The State of California produces a strategic plan for managing and developing the water supply for current and future need in its California Water Plan. This document outlines collaborative planning framework for elected officials, agencies, tribes, water and resource managers, businesses, academia, stakeholders, and the public to develop findings and recommendations and make informed decisions for California's water future. The 2013 State of California Water Plan outlines smart metering as a top Best Management Practice (BMP), see Section 3: Urban Water Use Efficiency. The State Water Plan can be found at the following link: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/California-Water-Plan/Water-Plan-Updates/Files/Update-2013/Water-Plan-Update-2013-Volume-3.pdf.

The City is a stakeholder in the 2013 IRWM Plan (RWMG, 2013) and the Project would directly and indirectly address many of the Plan recommendations, including to Improve Water Supply and Address Climate Change. The 2013 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. The 2013 IRWM Plan Objective to Improve Water Supply focuses 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 objective to Address Climate Change focuses on adapting to and mitigating against climate change vulnerability with targets of increasing local supplies, implementing "no regret" adaptation strategies, and implementing mitigation strategies that decrease emissions of greenhouse gases. The proposed Project will help improve local supply reliability by reducing demands and will result in reductions in energy use and greenhouse gas emissions. Three key recommendations are also addressed below:

- A web-based customer access will provide an increase in stakeholder involvement by providing tools for water use management. (Plan Challenge #4)
- Public education and awareness will lead to better water management through the web-based portal and include additional opportunities to provide water conservation messages. (Plan Challenge #5)
- Long term sustainability of regional water supplies will be achieved through more hands-on water management tools. (Plan Challenge #11)

Lastly, the reduced water consumption that results from the Project aligns with the State's SBx7-7. The State of California's Water Plan indicates that AMI systems are best management practices

to help reduce water use. The State of California Water Plan cites the Pacific Institute and Single-Family Water Use Study to show the significance of water loss due to residential leaks (averaging 7 to 10 gallons per capita per day [GPCD]). This study showed that if residential leaks could be identified and repaired earlier, the savings would be 6-7.5 GPCD.

6.6.6.2 Performance Measures

The City will use the AWWA method for computing water losses on an annual basis, which will inform the estimates of reduction in leaks at connections (the same methodology and assumption used to estimate water savings by the Project will be applied to actual water consumption data to evaluate actual water savings). A sample set of accounts will be selected to compare water consumption for a three-year average before against a one-year consumption period after properties have been retrofitted with smart meter and customers have received access to the portal. Before and after data may also be compared against control groups who did not receive AMI upgrades to further quantify savings and changes in water use as a result of the Project. Water savings created by installation of irrigation devices incentivized by the SoCalWaterSmart Rebate Program will be calculated using the water savings values accepted by MWD and applied to the actual number of rotating nozzle and WBIC devices that were rebated to City customers between FY 19 and 21. In addition to the water conservation measures outlined above, the City will be able to provide statistics regarding the number of AMI units installed and what classification of customers they serve.

6.6.6.3 Readiness to Proceed

The City is the singular entity completing the Project which is located entirely within the City's service area. The City employs many skillful and talented staff who have been a part of the planning process for AMI implementation. The applicant has shown, through its past successful projects with Reclamation, a willingness to work with Reclamation and welcomes the opportunity to further its collaboration through funding and implementation of the Project. An AMI feasibility study was completed by the City, and Capital Improvement Program funding has been designated for the Project. The City is currently preparing a RFP to hire a vendor to manage and construct the AMI system. The City will complete all required environmental and cultural resources reviews and acquire all applicable permits connected with the Project in a timely manner.

The City will file a NOE, as applicable, to comply with CEQA/NEPA. The City is investigating its need to prepare a CUP to comply with City ordinances. The process for obtaining a CUP entails filling out various applications and forms, preparing plans, environmental reports, and maps; and preparing and executing a community outreach plan.

In 2017, the City completed its work with an outside consultant who prepared an AMI assessment. The consultant and their prepared report analyzed the current operations, meter hardware and equipment, systems and software, and staffing. The report found that the City of

Oceanside was well informed of the technology and well equipped to proceed with an AMI project.

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

An environmental compliance estimate was determined by consultations and discussions internally with City staff, researching the related, and consulting with/ researching what other agencies about their own AMI implementation

6.6.7 Evaluation Criterion G— Nexus to Reclamation Project Activities

The City receives a large portion of its water from sources that ultimately originates from the SWP and the Colorado River Basin. The Colorado River is a Reclamation Project. The Project will help increase water supply through its conservation measures that will ultimately benefit the SWP and Colorado River Basin and therefore help a Reclamation Project.

The Project is neither on Reclamation lands nor does it involve Reclamation facilities.

The Project is not located in the same basin as a Reclamation project or activity.

The Project will help to reduce local water demands, which will result in less water being imported from the SWP and the Colorado River Basin. The SWP draws water from the Sacramento Bay-Delta, where multiple Reclamation projects are located. Through the Project's reduction of demand, more water will stay in the Delta, which will then benefit the Reclamation projects there. Improvements to the overall health of the Delta also benefit Reclamation project activities that depend on the Delta.

The Project may help Reclamation meet trust responsibilities to Tribes to the extent that by reducing demands on SWP and Colorado River Aqueduct imports, the Project will help improve conditions on water resources and reliability. These improvements to the water supply could then in turn benefit Reclamation and the Federal government in meeting its obligations as a part of the trust in tribal treaty rights, lands, assets, and resources to the tribes.

6.6.8 Evaluation Criterion H— Additional Non-Federal Funding

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

$$\frac{\$7{,}371{,}924\ (\text{Non} - \text{Federal Funding})}{\$8{,}871{,}924\ (\text{Total Project Cost})} = 83.1\%\ \text{Cost Share}$$

The percentage of non-federal funding will be 83.1%. This is greater than the required 50% match.

7 Project Budget

7.1 Funding Plan & Letters of Commitment

The City of Oceanside along with funds from MWD used to issue rebates to City of Oceanside customers participating in the SoCalWaterSmart Rebate Program will provide the non-Reclamation share of the Project costs. The cost breakdown is shown in **Table 7.1-1** below. No additional funding commitments are included.

Table 7.1-1: Summary of Non-Federal and Federal Funding Sources

FUNDING SOURCE	PERCENT OF PROJECT	FUNDING AMOUNT
Non-Federal Entities		
City of Oceanside	80.4%	$7,130,020
SoCalWaterSmart Rebate Program (MWD operating funds)	2.7%	$241,904
Non-Federal Subtotal:	83.1%	$7,371,924
Other Federal Entities		
N/A	0%	
Other Federal Subtotal:	0%	
Requested Reclamation Funding:	16.9%	$1,500,000
TOTAL PROJECT FUNDING:	100%	$8,871,924

7.2 Budget Proposal

The proposed budget breakdown by funding source for the Project is provided in **Table 7.2-1**.

Table 7.2-1: Total Project Cost Table

SOURCE	AMOUNT
Costs to be reimbursed with the requested Federal funding	$1,500,000
Costs to be paid by the City and MWD	$7,371,924
Value of third-party contributions	$0
TOTAL PROJECT COST	$8,871,924

The proposed budget for the Project is provided in **Table 7.2-2**.

Table 7.2-2: Budget Proposal

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	TOTAL COST
	$/Unit	Quantity		
Salaries and wages				**$0**
N/A				$0
Fringe benefits by $ or %				**$0**
N/A				$0
Travel				**$0**
N/A				$0
Equipment				**$0**
N/A				$0
Materials and Supplies				**$0**
N/A				$0
Contractual/construction				**$8,871,924**
AMI Network Infrastructure, Software, and Professional Services	$393,125	1	Lump Sum	$393,125
MDMS and Professional Services	$169,250	1	Lump Sum	$169,250
Program Management, Business Process, and Integration Services	$825,000	1	Lump Sum	$825,000
Meter Box Lids	$35	21,689	Units	$759,115
Water Meter Endpoints (5/8"-2")	$90	21,510	Units	$1,935,900
Water Meter Endpoints (3"-10")	$145	179	Units	$25,955
5/8x 3/4" Meters	$105	17,733	Units	$1,861,965
3/4" Meters	$105	550	Units	$57,750
1 " Meters	$150	1,863	Units	$279,450
1.5" Meters	$350	639	Units	$223,650
2" Meters	$185	725	Units	$134,125
3" Meters	$1,855	106	Units	$196,630
4" Meters	$3,795	47	Units	$178,365
6" Meters	$5,335	13	Units	$69,355
8" Meters	$5,955	12	Units	$71,460
10" Meters	$6,350	1	Units	$6,350
Installation Services, Equipment, Software	$1,242,398.43	1	Lump Sum	$1,422,575
SoCalWaterSmart Rebates	$208	1163	Rebates	$241,904
Education and Outreach Initiatives	$160	125	Hours	$20,000
Environmental and Regulatory Costs				**$0**
N/A				$0
Third-Party Contributions				**$0**

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	TOTAL COST
	$/Unit	Quantity		
N/A				$0
Other				**$0**
N/A				$0
TOTAL DIRECT COSTS				**$8,871,924**
Indirect Costs				**$0**
N/A				$0
TOTAL ESTIMATED PROJECT COSTS				$8,871,924

7.3 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

The vast majority of the requested budget is contractual and construction costs for the Project. The City is currently developing a RFP for the implementation of the AMI project. This grant seeks funding for implementation of Phase I of the overall AMI project. The RFP seeks an entire turnkey system, inclusive of all necessary materials and systems needed for implementation of the AMI system, as described in this proposal. Budget estimates included in this proposal are based upon the City's recently completed AMI Feasibility Study. The study utilized recent market quotes from manufacturers and suppliers, as well as the study consultant's database, which reflected pricing from related recent projects. The City also provided independent pricing inputs for the study as well. These numbers were combined to create a conservative, blended estimate and incorporated into the Project's cost estimates. Detailed cost estimate background information can be seen in Appendix D.

Proposed costs for a consultant to assist with the education and outreach initiative is set at $20,000 (125 hours at $160/hour).

The MWD issued rebates through its SoCalWaterSmart Rebate Program is estimated at $241,904.

The total of all these items combined is a total of $8,871,924 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 **$8,871,924**. Proposed funding sources for the Project include MWD, the City and Reclamation. The City is requesting $1,5000,000 from Reclamation to fund the Project. This request represents **16.9%** of the total project cost. No other federal funding has been requested or received for the Project.

8 Environmental & Cultural Resources Compliance

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 service meters to provide real-time meter readings and leak detection notifications. Earth-disturbing work would be minimal and would include replacing existing water meters. The meter replacement is not considered a “project” under CEQA/NEPA regulations. The AMI towers will be covered in the Project NOE.

- *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, these species are unlikely to be located within the AMI installation sites (customer meter boxes). Given the small-scale and temporary nature of work of activities associated with the Project, listed species or designated critical habitat would not 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).

- *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 of it being 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 would not modify or affect individual features of an irrigation system. The Project is centered around upgrades to water meters 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 would not modify or affect any buildings, structures, or features. Therefore, cultural resources would not be affected as a result 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). The Project would not result in significant ground-disturbing activity that would pose a significant threat to archaeological sites.

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

The meter replacements and WaterSmart Analytics software (portal) that would be funded through the Project would be available to all City customers in the City's service area, which includes both low-income and minority populations. Given that the meter replacements would be distributed throughout the City's service area, any potential impacts or benefits from program implementation would also be distributed throughout the service area. WaterSmart Analytics, a software services company, offers Customer Assistance Programs (CAPs) that address affordability issues (i.e., delinquent payments leading to service disconnections) that disadvantaged communities face – which may be applicable to the Project and end-users using the portal. No disproportionately high and adverse effects would occur on low income or minority populations in the City's service area. In fact, the program may benefit such disadvantaged customers due to increased leak detections and having better access to their water use data, resulting in water conservation and therefore 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?*

A Sacred Lands File search was conducted for the North San Diego Water Reuse Coalition (NSDWRC)'s 2015 Program Environmental Impact Report (PEIR; OMWD, 2015), which the City participates in, through the Native American Heritage Commission. The search revealed 21 Native American ground and/or individuals within the project area. These lands and sites would not be impacted as a result of 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. Therefore, the program would not contribute to the introduction, continue existence, or spread of noxious weeds or non-native invasive species. In addition, the Project has the possibility to introduce customers to conservation programs in the region that encourage native and drought resistant plant landscaping, culminating in benefits related to Reclamation's efforts.

9 Required Permits or Approvals

Through its existing meter replacement program, the City has determined that only a NOE will be required to implement the Project. No additional permitting work is necessary for this project, however a need for a CUP will be researched. Funding is not being requested for this task and costs are not included in the budget.

10 Letters of Project Support

The City has received three letters of support for the Project from the Oceanside Chamber of Commerce, the San Diego Regional Climate Collaborative, and the Institute for Local Government, which can be found in Appendix C.

11 Official Resolution

Due to timing of board meetings the City was unable to pass an official resolution prior to the submission deadline for this grant application. On April 10, 2019 it is anticipated that the City Council will pass a Resolution authorizing the City to apply for a 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)
- 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 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.

13 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 DUNS is 073370678.

14 Disclosure of Lobbying Activities

The City has completed and executed Standard Form LLL (SF-LLL) the "Disclosure of Lobbying Activities" form, which is included in Attachment A

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.

Godwin, A. 2011. Advanced Metering Infrastructure: Drivers and Benefits in the Water Industry. https://www.waterworld.com/articles/print/volume-27/issue-8/editorial-features/special-section-advanced-metering-infrastructure/advanced-metering-infrastructure-drivers-and-benefits-in-the-water-industry.html

Olivenhain Municipal Water District (OMWD), 2015. 2015 Program Environmental Impact Report.

Regional Water Management Group (RWMG), 2013. 2013 San Diego Integrated Regional Management Plan.

San Diego County Water Authority (SDCWA), 2016. 2015 Urban Water Management Plan.

United States Environmental Protection Agency (EPA). 2013. Water Audits and Water Loss Control for Public Water Systems. https://www.epa.gov/sites/production/files/2015-04/documents/epa816f13002.pdf

16 Appendices

Appendix A – Completed SF Forms

Appendix B – City of Oceanside Water Loss Audit Reports

Appendix C – Letters of Support

Appendix D – Background Cost Estimate Data

Appendix E – Draft Resolution

Appendix A – Completed SF Forms

OMB Number: 4040-0004
Expiration Date: 12/31/2019

Application for Federal Assistance SF-424

* 1. Type of Submission:
- [ ] Preapplication
- [x] Application
- [ ] Changed/Corrected Application

* 2. Type of Application:
- [x] New
- [ ] Continuation
- [ ] Revision

* If Revision, select appropriate letter(s):

* Other (Specify):

* 3. Date Received: 03/18/2019

4. Applicant Identifier:

5a. Federal Entity Identifier:

5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:

7. State Application Identifier:

8. APPLICANT INFORMATION:

* a. Legal Name: City of Oceanside

* b. Employer/Taxpayer Identification Number (EIN/TIN): 95-1688570

* c. Organizational DUNS: 0733706780000

d. Address:

* Street1: 300 N. Coast Hwy
Street2:
* City: Oceanside
County/Parish:
* State: CA: California
Province:
* Country: USA: UNITED STATES
* Zip / Postal Code: 92054-2824

e. Organizational Unit:

Department Name: Water Utility

Division Name: Water

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

Prefix: Ms.
* First Name: Lindsay
Middle Name:
* Last Name: Leahy
Suffix:

Title: Principal Water Engineer

Organizational Affiliation:

* Telephone Number: 760-435-5913
Fax Number:

* 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:**

Department of the Interior, Bureau of Reclamation

11. Catalog of Federal Domestic Assistance Number:

15.507

CFDA Title:

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

*** 12. Funding Opportunity Number:**

BOR-DO-19-F004

* Title:

WaterSMART: Water and Energy Efficiency Grants for fiscal year (FY) 2019

13. Competition Identification Number:

Title:

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 I 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: CA-049 * b. Program/Project: CA-049

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

Add Attachment | Delete Attachment | View Attachment

17. Proposed Project:

* a. Start Date: 07/01/2019 * b. End Date: 09/30/2022

18. Estimated Funding ($):

* a. Federal	1,500,000.00
* b. Applicant	7,371,924.00
* c. State	0.00
* d. Local	0.00
* e. Other	0.00
* f. Program Income	0.00
* g. TOTAL	8,871,924.00

*** 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: Ms. * First Name: Lindsay

Middle Name:

* Last Name: Leahy

Suffix:

* Title: Principal Water Engineer

* Telephone Number: 760-435-5913 Fax Number:

* Email: lleahy@oceansideca.org

* Signature of Authorized Representative: Completed by grants.gov upon submission * Date Signed: 03/18/2019

OMB Number: 4040-0008
Expiration Date: 01/31/2019

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	$	$	$
2. Land, structures, rights-of-way, appraisals, etc.	$	$	$
3. Relocation expenses and payments	$	$	$
4. Architectural and engineering fees	$	$	$
5. Other architectural and engineering fees	$	$	$
6. Project inspection fees	$	$	$
7. Site work	$	$	$
8. Demolition and removal	$	$	$
9. Construction	$ 8,871,924	$	$ 8,871,924
10. Equipment	$	$	$
11. Miscellaneous	$	$	$
12. SUBTOTAL *(sum of lines 1-11)*	$	$	$
13. Contingencies	$	$	$
14. SUBTOTAL	$	$	$
15. Project (program) income	$	$	$
16. TOTAL PROJECT COSTS *(subtract #15 from #14)*	$ 8,871,924	$	$ 8,871,924

FEDERAL FUNDING

17. Federal assistance requested, calculate as follows: (Consult Federal agency for Federal percentage share.) Enter the resulting Federal share.	Enter eligible costs from line 16c Multiply X 16.9 %	$ 1,500,000

ASSURANCES - CONSTRUCTION PROGRAMS

OMB Number: 4040-0009
Expiration Date: 01/31/2019

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 statue(s) under which application for Federal assistance is being made; and (j) the requirements of any other nondiscrimination statue(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.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL	TITLE
Completed on submission to grants.gov	Principal Water Engineer
APPLICANT ORGANIZATION	DATE SUBMITTED
City of Oceanside	03/18/2019

DISCLOSURE OF LOBBYING ACTIVITIES

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

Approved by OMB
4040-0013

1. * Type of Federal Action:
- [ ] a. contract
- [x] b. grant
- [ ] c. cooperative agreement
- [ ] d. loan
- [ ] e. loan guarantee
- [ ] f. loan insurance

2. * Status of Federal Action:
- [ ] a. bid/offer/application
- [x] b. initial award
- [ ] c. post-award

3. * Report Type:
- [x] a. initial filing
- [ ] b. material change

4. Name and Address of Reporting Entity:

[x] Prime [ ] SubAwardee

** Name:* City of Oceanside

** Street 1:* 300 N Coast Hwy *Street 2:*

** City:* Oceanside *State:* CA: California *Zip:* 92054

Congressional District, if known:

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

6. * Federal Department/Agency:
Bureau of Reclamation

7. * Federal Program Name/Description:
WaterSMART: Water and Efficiency Grants for fiscal year (FY) 2019

CFDA Number, *if applicable:* 15.507

8. Federal Action Number, *if known:*

9. Award Amount, *if known:*
$

10. a. Name and Address of Lobbying Registrant:

Prefix: ** First Name:* Charmayne *Middle Name:*

** Last Name:* Anderson *Suffix:*

** Street 1:* 1901 Pennsylvania Ave NW Suite 700 *Street 2:*

** City:* Washington DC *State:* DC: District of Columbia *Zip:* 20006

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

Prefix: ** First Name:* Charmayne *Middle Name:*

** Last Name:* Anderson *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:** Completed by grants.gov upon submission

***Name:** *Prefix:* Ms. ** First Name:* Lindsay *Middle Name:*

** Last Name:* Leahy *Suffix:*

Title: Principal Water Engineer **Telephone No.:** **Date:** 03/18/2019

Federal Use Only:

Authorized for Local Reproduction
Standard Form - LLL (Rev. 7-97)

Appendix B – City of Oceanside Water Loss Audit Reports

CA-NV AWWA Water Loss Technical Assistance Program

Wave 4 Water Audit Level 1 Validation Document

Validator Provided

Audit Information:

Utility: Oceanside PWS ID: 3710014

System Type: Potable Audit Period: Calendar 2016

Utility Representation: Teresa Gomez, Christopher Tapia, Robert Gutierrez, Chuck Reuck

Validation Date: 5/4/2017 Call Time: 9am Sufficient Supporting Documents Provided: Yes

Validation Findings & Confirmation Statement:

Key Audit Metrics:

Data Validity Score: 57 Data Validity Band (Level): Band III (51-70)

ILI: 0.72 Real Loss: 10 (gal/conn/day) Apparent Loss: 16 (gal/conn/day)

Non-revenue water as percent of cost of operating system: 7.3%

Certification Statement by Validator:

This water loss audit report has been Level 1 validated per the requirements of California Code of Regulations Title 23, Division 2, Chapter 7 and the California Water Code Section 10608.34.

All recommendations on volume derivation and Data Validity Grades were incorporated into the water audit.

Validator Information:

Water Audit Validator: Reinhard Sturm / Isabel Szendrey (support) Validator Qualifications: Contractor for CA-NV AWWA Water Loss TAP

CA-NV AWWA Water Loss Technical Assistance Program

Wave 4 Water Audit Level 1 Validation Document

Validator Provided

Audit Information:

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Validator Information:

Water Audit Validator: Reinhard Sturm / Isabel Szendrey (support) Validator Qualifications: Contractor for CA-NV AWWA Water Loss TAP

#	AWWA Water Audit Input	Code	Final DVG	Basis on Input Derivation	Basis on Data Validity Grade
1	Volume from Own Sources	VOS	2	Supply meter profile: There are 3 finished water meters (2 active) from RO plant supplied by 8 wells. VOS input derived from: SCADA archive. Comments: Input derivation from supporting documents confirmed. Exclusion of non-potable volumes confirmed.	Percent of own supply metered: 100% Signal calibration frequency: Has been done but not in last 5 years, therefore occasional testing does not apply and a grade of 2 was selected. Volumetric testing frequency: None. Volumetric testing method: None Percent of own supply volumetrically tested: None Comments: No additional comments.
2	VOS Master Meter & Supply Error Adjustment	VOS MMSEA	3	Input derivation: Zero utilized as input in absence of available test data. Net storage change included in MMSEA input: No. Comments:No additional comments.	Supply meter read frequency: Continuous. Supply meter read method: Automatic logging via SCADA telemetry. Frequency of data review for trends & anomalies: Continuous Storage levels monitored in real-time: Yes. Comments:No additional comments.
3	Water Imported	WI	5	Import meter profile:There are 3 treated water interconnections with meters and 2 raw water interconnections with meters. The raw water is treated at the Robert Weese WFP which has 2 finished water meters. Comments:Imported volume was revised to include the metered import volume instead of an adjusted volume based on billing adjustments. Exclusion of non-potable volumes confirmed. No supporting documentation for SDCWA calibration efforts provided – chose 5 to reflect that a DVG of 6 the frequency or tests and results are a required criteria.	Percent of import supply metered: 100% Signal calibration frequency: Annual. Volumetric testing frequency: None. Volumetric testing method: None Percent of import supply volumetrically tested: None Comments:No additional comments.
4	WI Master Meter & Supply Error Adjustment	WI MMSEA	3	Input derivation: Zero utilized as input in absence of available test data. Comments:No additional comments.	Import meter read frequency: Continuous. Supply meter read method: Automatic logging via SCADA telemetry. Frequency of data review for trends & anomalies: Continuous Comments:No additional comments.
5	Water Exported	WE	n/a	Export meter profile:There are 4 export interconnections – 1 is a constant export with continuous metering and 3 are intermittent or emergency interconnections with positive displacement meters not monitored. The	Percent of export supply metered: 100% Signal calibration frequency: Annual for the one continuous export meter. None for the other intermittent meters.

				export volume was not included because the interconnection is located upstream from the meter used to report the WI. Comments:Input derivation from supporting documents confirmed. Exclusion of non-potable volumes confirmed. Exclusion from BMAC input confirmed.	Volumetric testing frequency: None. Volumetric testing method: None Percent of export supply volumetrically tested: None Comments:No additional comments.
6	WE Master Meter & Supply Error Adjustment	WE MMSE A	1	Input derivation: Zero utilized as input in absence of available test data. Comments:No additional comments.	Export meter read frequency: 1 Export meter is continuously monitored. The other 3 are not read on a regular basis. Export meter read method: Automatic logging via SCADA telemetry. Frequency of data review for trends & anomalies: Continuous Comments:No additional comments.
7	Billed metered	BMAC	4	Customer meter profile: Age profile: PD meters averaging 13-16 years Reading system:Most manual, almost 10% touch read. Read frequency:Monthly. Comments:Lag-time correction is not employed in input derivation. Input derivation from supporting documents confirmed. Exclusion of non-potable volumes confirmed.	Percent of customers metered: 100% Small meter testing policy: Reactive - complaint based or flagged-consumption testing only. Number of small meters tested/year:Very few, as needed Large meter testing policy:None. Number of large meters tested/year:Reactive, based on complaints or consumption anomaly Meter replacement policy:Upon failure only. Number of replacements/year:As needed Billing data auditing:Standard billing QC, plus review of volumes by use type each billing cycle. Auditor performs sampling review on select accounts each month. Comments:
8	Billed unmetered	BUAC	n/a	Profile: All customers are metered Input derivation:n/a Comments:n/a	Policy for metering exemptions: n/a Comments:No additional comments.
9	Unbilled metered	UMAC	n/a	Profile: All customers are billed Input derivation: n/a Comments:n/a	Policy for billing exemptions: n/a Comments:No additional comments.
10	Unbilled unmetered	UUAC	5	Profile: Operational flushing and fire department usage. Comments:Volumes from flushing activities are tracked. Custom California default of 0.25%xWS utilized.	Comments:Default grade applied.
11	Unauthorized	UC	5	Comments:Default input applied.	Comments:Unauthorized consumption by inactive accounts is

	consumption				tracked by billing system.
12	Customer metering inaccuracies	CMI	3	See BMAC comments regarding meter testing & replacement activities. Input derivation: Rudimentary estimate. Comments:No additional comments.	Characterization of meter testing: Limited (upon request AND consumption flag only). Characterization of meter replacement: Limited (upon failure only). Comments:No additional comments.
13	Systematic data handling errors	SDHE	5	Comments:Default input applied.	Comments:Default grade applied.
14	Length of mains	Lm	7	Input derivation: Totaled from GIS based map. Hydrant leads included: No. Comments:Include hydrant leads in total for future audits.	Mapping format: Digital. Asset management database:In the process of being implemented. Map updates & field validation:Accomplished through normal work order processes. Comments:No additional comments.
15	Number of service connections	Ns	7	Input derivation: Detailed query from billing system to analyze unique record count. Basis for database query: Location or other premise-based ID. Comments:No additional comments.	CIS updates & field validation: Accomplished through normal meter reading processes. Estimated error of total count within: 3%. Comments:No additional comments.
16	Ave length of cust. service line	Lp	10	Comments:Default input and grade applied, as customer meters are typically located at the property boundary given California climate.	
17	Average operating pressure	AOP	7	Number of zones, general profile: 20 pressure zones Typical pressure range: Varies widely. Input derivation: Inferred from observations of pressure readings in field or review of pressure measurements. Comments:No additional comments.	Extent of static pressure data collection: Hydrant pressures taken during routine system flushing and/or hydrant testing. Characterization of real-time pressure data collection: Basic - telemetry or pressure logging at boundary points (supply locations, tanks, PRVs, boosters). Hydraulic model: In place and calibrated within the last 5 years. Comments:No additional comments.
18	Total annual operating cost	TAOC	10	Input derivation: From official financial reports. Comments:Confirmed costs limited to water only.	Frequency of internal auditing:Annually. Frequency of third-party CPA auditing:Annually. Comments:No additional comments.
19	Customer retail unit cost	CRUC	5	Input derivation: For residential accounts, sewer charges are based on water meter readings, but not volumetrically. For commercial accounts sewer revenues are volumetrically based. Sewer revenues for commercial	Characterization of calculation: Weighted average composite of all rates. Input calculations have notbeen reviewed by an M36 water

				accounts were incorporated into the calculation. Comments:No additional comments.	loss expert. Comments:No additional comments.
20	Variable production cost	VPC	7	Supply profile: Own sources and import supply. Primary costs included: Treatment chemicals and supply & distribution power. Secondary costs included: Equipment wear & tear, maintenance, materials and supplies. Comments:No additional comments.	Characterization of calculation: Primary costs plus some but not all applicable secondary costs. Input calculations have not been reviewed by an M36 water loss expert. Comments:No additional comments.

Key Audit Metrics

(~) VALIDITY Data Validity Score: 57 Data Validity Band (Level): Band III (51-70)

(#) VOLUME ILI: 0.72 Real Loss: 9.67(gal/conn/day) Apparent Loss: 16.16(gal/conn/day)

($) VALUE Annual Cost of Apparent Losses: $2,694,917 Annual Cost of Real Losses: $735,035

Infrastructure & Water Loss Management Practices:

Infrastructure age profile: Oldest part of the system for 1926 with majority built in 1980's-1990's Infrastructure comments: The range in age of the distribution system is very wide, which may likely result in the distribution system also having a wide range of water loss levels. When looked as a whole, the distribution system may appear to have low water loss levels, but these results may mask high loss levels in the older areas of the system.

Estimated main failures/year:5-10 Estimated service failures/year:40-60

Extent of proactive leakage management: Use of leak correlators for passive leak detection

Other water loss management comments:No additional comments.

Comments on Audit Metrics & Validity Improvements

The Infrastructure Leakage Index (ILI) of 0.72 describes a system that experiences leakage below the modeled technical minimum for its system characteristics.

While this system may experience low volumes of leakage, the ILI after level 1 validation indicates that advanced validation is warranted before conclusions can be made regarding the system's leakage. At least one of the following scenarios may contribute to this result:

- **Water Supplied (both Own Source and Imported Water) may be understated**. This can occur if supply meters are under-registering more significantly than is currently reflected in the Master Meter Error & Supply Adjustment (MMSEA). This can also occur if the supply volumes include uncorrected inaccuracies in the data archives due to data gaps or SCADA formula errors.
- **Authorized consumption may be overstated.** This can occur if sales volumes have not been pro-rated to align consumption with dates of actual use instead of the dates of meter reads. This can also occur if the BMAC input includes any non-potable volumes or duplication/exclusion of potable volumes.
- **The estimate of average operating pressure may be too high**, thereby overestimating the technical minimum volume of leakage for the system.

The Data Validity Score falling within Band III (51-70) suggests that next steps may be focused simultaneously on improving data reliability and evaluating cost-effective interventions for water & revenue loss recovery. Opportunities to improve the reliability of audit inputs and outputs include:

- Improved understanding of Supply Meter (Own and Import) Master Meter Error: consider adopting or increasing the rigor of a source meter volumetric testing and calibration program, informed by the guidance provided in AWWA Manual M36 – Appendix A.
- Temporal alignment of Billed Metered Authorized Consumption with Water Supplied: consider pro-rating the first and last months of the audit period to better align consumption with actual dates of use, and using read date as basis for reporting.

- Improved estimation of CMI: consider a customer meter testing program which tests a sample of random meters whose stratification (by size, age, or other characteristics) represents the entire customer meter stock.

When the CA-NV AWWA Water Audit Validator (WAV) program comes online after this year, is the utility planning on having a staff member become certified to perform the Level 1 Validation for future audits? Unsure.

CA-NV AWWA Water Loss Technical Assistance Program

Wave 4 Water Audit Level 1 Validation Document

Utility Provided

Water System Name: Oceanside **Water System ID Number:** 3710014 **Water Audit Period:** Calendar 2016

Water Audit & Water Loss Improvement Steps:

Steps taken in preceding year to increase data validity, reduce real loss and apparent loss as informed by the annual validated water audit:

Began an active leak detection program using correlations. Acquired a mobile, calibrated tank to perform meter accuracy testing on customer meters in the field. Implemented reservoir evaluations and installation of influent and effluent metering (stages).

Certification Statement by Utility Executive:

This water loss audit report meets the requirements of California Code of Regulations Title 23, Division 2, Chapter 7 and the California Water Code Section 10608.34 and has been prepared in accordance with the method adopted by the American Water Works Association, as contained in their manual, *Water Audits and Loss Control Programs, Manual M36, Fourth Edition* and in the Free Water Audit Software version 5.

CARI DALE	WATER UTILITIES DIRECTOR		9/29/17
Executive Name (Print)	Executive Position	Signature	Date

Level 1 Validation Certificate

This document verifies that the Level 1 Validation process was completed. The session details and audit review outcomes are included here.

This certificate is required for submission – alongside the Level 1 validated water audit software file – to the California Department of Water Resources.

Call Date: 9/20/2018

Water Supplier

Supplier Name:	City of Oceanside
Supplier Participants:	*Teresa Gomez, Isaac Alvarez, Christopher Tapia, Chuck Reuck*

Validator

Validator:	Kevin Burgers, Water Systems Optimization
Validator Qualifications:	Water Audit Validator Certificate from the AWWA California Nevada Section

Key Audit Metrics

Data Validity Score:	69	
ILI:	1.12	
Real Loss:	14.95	gal / conn / day
Apparent Loss:	11.88	gal / conn / day
Non-Revenue Water as Percent of Cost of Operating System:	6.2%	

Certification Statement by Validator

This water loss audit report has been Level 1 validated per the requirements of California Code of Regulations Title 23, Division 2, Chapter 7 and the California Water Code Section 10608.34.

All recommendations on volume derivation and Data Validity Grades were incorporated into the water audit. ☒

Level 1 Validation – Water Supplier Confirmation

This document confirms participation in and endorsement of the Level 1 Validation as completed.

This acknowledgement is required for submission – alongside your Level 1 validated water audit software file – to the California Department of Water Resources.

Water Supplier Name:	City of Oceanside
Water Supplier Public Water System ID:	CA3710014
Water Audit Period:	FY 2017/18

Water Audit & Water Loss Improvement Steps

Steps taken in the audit period timeframe to increase data source accuracy, reduce real losses, and/or reduce apparent losses, as informed by the water audit.

Exhaustive efforts were taken to implement a meter testing and calibration testing program. Accuracy with volume from own sources was further defined by using the total from the effluent meters that empty into the distribution system rather than the total from the groundwater well intake.

Certification Statement by Water Supplier Executive:

This water loss audit report meets the requirements of California Code of Regulations Title 23, Division 2, Chapter 7 and the California Water Code Section 10608.34 and has been prepared in accordance with the method adopted by the American Water Works Association, as contained in their manual, *Water Audits and Loss Control Programs, Manual M36, Fourth Edition* and in the Free Water Audit Software version 5.

Executive Name (print):	Cari Dale
Executive Position:	Water Utilities Director
Signature:	
Date	09/28/2018

Level 1 Validation Summary Notes

This document includes detailed notes about utility practices as reviewed during third-party level-one water audit validation.

This document is not a required submission to the California Department of Water Resources. It is meant to provide background and documentation of the validation process.

Call Information

Utility	Validator
Utility Name: City of Oceanside	Validator: Kevin Burgers, Water Systems Optimization
Utility Participants: Teresa Gomez, Christopher Tapia, Chuck Reuck, Isaac Alvarez	Validator Qualifications: Water Audit Validator Certificate from the AWWA California Nevada Section
Call Date: 9/20/2018	

Validation Call Notes

Audit Input	Grade	Audit Input Notes	Data Validity Grade Notes
Volume from Own Sources	3	Source Meter Profile: 8 ground water wells provide water to RO WTP. There are 2 active meters for effluent in the WTP. Derivation: SCADA reads from production meters as archived. Comments: Input derivation from supporting documents confirmed. Exclusion of non-potable volumes confirmed.	Approximate Percent of Volume Metered: 100% Approximate Percent Tested and/or Calibrated: 0% Calibration Frequency: Has been done but not in last 5 years. Volumetric Testing Frequency: None. Volumetric Testing Method: n/a. Comments: No additional comments.
Volume from Own Sources Master Meter and Supply Error Adjustment	8	Derivation: Total change in storage volume over the audit period. Change in Storage Considered: Yes. Comments: No additional comments.	Source Meter Read Method: Automatic logging via SCADA telemetry. Source Meter Read Frequency: Continuous. Data Review Practices: Each business day. Real-Time Storage Level Monitoring: Yes. Comments: No additional comments.
Water Imported	7	Import Meter Profile: There are 4 treated water interconnections with meters and 2 raw water interconnections with meters. The raw water is treated at the Robert Weese WFP which has 2 finished water meters. Derivation: Totalization of volumes per redundant meter reads by utility. Comments: Input derivation from supporting documents confirmed. Exclusion of non-potable volumes confirmed.	Approximate Percent of Volume Metered: 100% Approximate Percent Tested and/or Calibrated: n/a. Calibration Frequency: Monthly. Volumetric Testing Frequency: None. Volumetric Testing Method: n/a. Comments: Limiting criteria for DVG is availability of testing/calibration documentation.

Water Imported Master Meter and Supply Error Adjustment	8	Derivation: Left blank in absence of available test data. Comments: San Diego CO Water Authority is the wholesaler	Import Meter Read Method: Automatic logging via SCADA telemetry. Import Meter Read Frequency: Continuous. Data Review Practices: Monthly. Comments: No additional comments.
Water Exported	n/a		
Water Exported Master Meter and Supply Error Adjustment	n/a		
Billed Metered Authorized Consumption	7	Derivation: 44k total meters from which 39k are manually read. Customer Meter Profile: Read Frequency: Monthly. Reading Technology: Mixture of manual and touch read Age Profile: PD meters averaging 13-16 years Comments: Lag-time correction is not employed in input derivation. Input derivation from supporting documents confirmed. Exclusion of non-potable volumes confirmed.	Approximate Percent Metered: 100% Small Meter Testing Practices: Reactive testing plus limited sampling occurs on 450 meters annually. Number of Small Meters Tested: 450/ year Large Meter Testing Practices: Targeted testing is conducted annually for high volume meters. Number of Large Meters Tested: Uncertain General Replacement Practices: Based on throughput threshold per statistical testing program results. Consider customer disputes and preparing the network for an eventual AMI implementation. Billing Data Review: Standard billing QC, plus review of volumes by use type each billing cycle. Financial auditor performs sampling review on select accounts each month. Comments: No additional comments.
Billed Unmetered Authorized Consumption	n/a		
Unbilled Metered Authorized Consumption	n/a		
Unbilled Unmetered Authorized Consumption	5	Profile: Operational flushing and fire department usage. Comments: 0.25% x WS default applied	Comments: Default grade applied.
Unauthorized Consumption	5	Comments: 0.25% default input applied.	Comments: Default grade applied.
Customer Metering Inaccuracies	5	Derivation: Rudimentary estimate of 2%. Comments: No additional comments. *See BMAC comments regarding meter testing & replacement activities.	Customer Meter Testing: Routine (proactive), but not fully representative. Customer Meter Replacement: Limited (upon failure only). Comments: No additional comments.
Systematic Data Handling Errors	5	Comments: 0.25% default input applied.	Comments: Default grade applied.

Length of Mains	8	Derivation: Totaled from GIS based map. Hydrant Laterals Included: Yes. Comments: No additional comments.	Map Format: Digital. Asset Management Systems: In place and integrated with GIS system. Map Update Process: Accomplished through normal work order processes. Comments: No additional comments.
Number of Service Connections	8	Derivation: Detailed query from billing system to analyze unique record count. Basis for Query: Meter ID - non-premise based. Comments: Maintenance department support this information. Count came trough an SQL analysis. Every meter is read monthly regardless if the account is active or not.	Field Validation: Accomplished through normal meter reading processes. Estimate of Error: 2%. Comments: There are written policies and a new program is in place with internal auditing in a monthly basis.
Average Operating Pressure	5	How Pressure is Maintained: There are 26 pressure zones Pressure Range: Varies widely within an average of 60 psi. Minimum pressure of 35psi with a 400psi maximum. Derivation: Inferred from observations of pressure readings in field or review of pressure measurements. Comments: No additional comments.	Pressure Data Collection: Hydrant pressures taken during routine system flushing and/or hydrant testing. Real-Time Monitoring: Basic - telemetry or pressure logging at boundary points (supply locations, tanks, PRVs, boosters). Hydraulic Model: In place and calibrated within the last 5 years. Comments: No additional comments.
Annual Operating Cost	10	Derivation: From official financial reports. Comments: Confirmed costs limited to water only, and water debt service included.	Auditing Practices: Annually by a third party CPA. Comments: No additional comments.
Customer Retail Unit Cost	9	Rate Structure: Tiered rate structure Derivation: Weighted average based on consumption by each rate. Sewer charges are based on water meter readings. Sewer revenues are incorporated into calculation. Comments: No additional comments.	M36 Review: Weighted average composite of all rates. Input calculations have not been reviewed by an M36 water loss expert. Comments: No additional comments.
Variable Production Cost	7	Primary Costs: Own sources and import supply. Secondary Costs: Equipment wear & tear, maintenance, materials and supplies Comments: Pumping depreciation was not included. It includes labor (we suggested to not be considered).	M36 Review: Primary costs plus some but not all applicable secondary costs. Input calculations have not been reviewed by an M36 water loss expert. Comments: No additional comments.

Infrastructure & Water Loss Management Practices:

Infrastructure age profile: Oldest part of the system for 1926 with majority built in 1980's-1990's

Infrastructure replacement policy (current, historic): The range in age of the distribution system is very wide, which may likely result in the distribution system also having a wide range of water loss levels. When looked, the distribution system may appear to have low water loss levels, but these results may mask high loss levels in the older areas of the system.

Estimated main failures/year: 5-10 Estimated service failures/year: 40-60

Extent of proactive leakage management: Use of leak correlators for passive leak detection

Other water loss management comments: No additional comments.

Appendix C – Letters of Support

OCEANSIDE
CHAMBER OF
COMMERCE

March 1, 2019

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

Dear Commissioner Burman:

The Oceanside Chamber of Commerce is writing to express support for the City of Oceanside, California's application to the U.S. Department of the Interior (DOI) for *WaterSMART: Drought Response Program: Drought Resiliency Projects for Fiscal Year 2019* (Funding Opportunity Announcement [FOA] No. BOR-DO-19-F003). This vital funding will assist the City in providing 100 Acre-Feet of recycled water through six miles of pipeline in the downtown area of Oceanside.

The City of Oceanside's project consists of performing a condition assessment of existing pipeline, conducting as-needed point repairs of the pipeline, adding access manways as well as customer connections to the recycled water pipeline. In addition, the use of recycled water in the community makes use of a precious resource that would otherwise be discharged to the ocean as well as reduces the demand on the Colorado River and the Delta, helping to support water flows in these courses and associated habitat.

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 imported water deliveries and strongly supports the approach of the City of Oceanside.

In conclusion, we ask for full and fair consideration, as permitted under law, of the City of Oceanside's application for DOI WaterSMART Water and Energy Efficiency funding. If you have any questions, please contact me at 760-722-1534 ext. 107.

Sincerely,

Scott M. Ashton, CEO
Oceanside Chamber of Commerce

March 4, 2019

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

Dear Commissioner Burman:

I am writing on behalf of the San Diego Regional Climate Collaborative in strong support of 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 2019* (Funding Opportunity Announcement [FOA] No. BOR-DO-19-F004). This project allows Oceanside to manage precious water resources efficiently and provides an important contribution to our region's climate adaptation and mitigation efforts.

The San Diego Regional Climate Collaborative is a network of public agencies that advances comprehensive solutions to facilitate climate change planning across San Diego County. As one of our key member agencies, Oceanside's climate planning solutions are valuable on a local and regional level. In particular, The Automated Metering Infrastructure project speaks directly to two of our three primary focus areas as a regional collaborative: Climate-smart water management and energy efficiency. We would like to recognize this project's clear alignment with the focus areas we see as vital to climate change planning in San Diego.

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. We ask for full consideration of the city of Oceanside's application for DOI WaterSMART Water and Energy Efficiency funding and its effort to ensure that water supplies are being used efficiently while impact on the planet is reduced. If you have any questions, please do not hesitate to contact us.

Sincerely,

Christiana Debenedict

Interim Director,
Diego Regional Climate Collaborative

INSTITUTE FOR LOCAL GOVERNMENT℠

Promoting Good Government at the Local Level

February 25, 2019

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 2019* (Funding Opportunity Announcement [FOA] No. BOR-DO-19-F004). This vital funding would deploy Automated Metering Infrastructure throughout a portion of Oceanside in North San Diego County.

The City of Oceanside has been a stellar member of the Institute for Local Governments' Beacon Program since June of 2016. In that time, the city has earned two awards for its Sustainability Best Practices, including six activities that address responsible water-related activities.

The City of Oceanside's project outlined in its application consists of replacing water meters with remote reading capabilities and combining these real-time reads with a customer portal, capable to notifying customers of water use anomolies, high usage as well as suspected leaks. In addition, the remote reading capabilities negate the need to physically send staff to take the meter reading, reducing Greenhouse Gas Emissions. This will greatly save the city time, money and contribute to water efficiency and the reduction of greenhouse gas emissions, which are all goals of the Beacon Program. 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 approach of the City of Oceanside.

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 that ensure that water supplies are efficiently used.

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 funding. If you have any questions, please contact me at 916-658-8274

Sincerely,

Karalee Browne

Karalee Browne, Manager, Institute for Local Government Sustainable Communities Program

Appendix D – Background Cost Estimate Data

Appendix I – Capital Cost Estimate

Table I.2: CapEx

Water AMI / MDM					
	Quantity	Price	Total	Cost Start	Cost End
AMI					
AMI Head End Software License Fee	1	$ 40,000	$ 40,000	1/1/2018	1/31/2018
Network Infrastructure (Collectors, Repeaters, etc.)	1	$ 225,000	$ 225,000	1/1/2018	6/30/2018
AMI Water Meters, Registers, Endpoints & Lids					
Water Meter Lids - Replace	38,041	$ 30.00	$ 1,141,230	1/1/2018	12/31/2019
Hand Held Programmer	4	$ 6,000.00	$ 24,000	1/1/2018	1/31/2018
Water Meter Endpoints (5/8"-2")	43,605	$ 75.00	$ 3,270,375	1/1/2018	12/31/2019
Water Meter Endpoints (Compound 3"-10")	239	$ 120.00	$ 28,680	1/1/2018	12/31/2019
5/8 x 3/4 inch	34,450	$ 85.00	$ 2,928,250	1/1/2018	12/31/2019
3/4 inch	348	$ 85.00	$ 29,580	1/1/2018	12/31/2019
1 inch	2,389	$ 124.00	$ 296,236	1/1/2018	12/31/2019
1 1/2 inch	1,116	$ 295.00	$ 329,220	1/1/2018	12/31/2019
2 inch	1,302	$ 408.00	$ 531,216	1/1/2018	12/31/2019
3 inch	127	$ 1,565.00	$ 198,755	1/1/2018	12/31/2019
4 inch	69	$ 3,200.00	$ 220,800	1/1/2018	12/31/2019
6 inch	21	$ 4,500.00	$ 94,500	1/1/2018	12/31/2019
8 inch	19	$ 5,025.00	$ 95,475	1/1/2018	12/31/2019
10 inch	3	$ 5,359.00	$ 16,077	1/1/2018	12/31/2019
Retrofit Registers	4,000	$ 55	$ 220,000	1/1/2018	12/31/2019
AMI Meter Installation (Labor)					
Water Meter Exchange (5/8"-1")	37,187	$ 40.00	$ 1,487,480	1/1/2018	12/31/2019
Water Meter Exchange (1 1/2")	1,116	$ 125.00	$ 139,500	1/1/2018	12/31/2019
Water Meter Exchange (2")	1,302	$ 200.00	$ 260,400	1/1/2018	12/31/2019
Water Meter Exchange (3")	127	$ 425.00	$ 53,975	1/1/2018	12/31/2019
Water Meter Exchange (4")	69	$ 500.00	$ 34,500	1/1/2018	12/31/2019
Water Meter Exchange (6"-10")	43	$ 1,150.00	$ 49,450	1/1/2018	12/31/2019
Water Meter Retrofit	4,000	$ 25.00	$ 100,000	1/1/2018	12/31/2019
MDMS + Customer Portal Software					
MDMS Software License Fee	1	$ 50,000	$ 50,000	1/1/2018	6/30/2018
Professional Services					
AMI Vendor	1	$ 75,000	$ 75,000	1/1/2018	12/31/2018

MDMS Vendor	1	$ 100,000	$ 100,000	1/1/2018	12/31/2018
Program Mgt, Business Process/Change Mgt, Systems Integration	10%		$ 1,203,969.90	1/1/2018	12/31/2019
Other Utility Costs / Contingency					
Contingency	10%		$ 1,324,367	1/1/2018	12/31/2019
Sales Tax	8%	$ 9,424,394	$ 730,391	1/1/2018	12/31/2019
TOTAL WATER AMI CAPEX			**$ 15,298,426**		

Table I.2: OpEx

Water AMI / MDM					
	Quantity	Price	Total	Cost Start	Cost End
AMI Operations / Hosting Fees					
AMI Network Operations Fee	1	$ 5,000	$ 5,000	1/1/2019	N/A
Annual AMI Headend System Hosting Fee (SaaS)	1	$ 100,000	$ 100,000	1/1/2019	N/A
MDMS / Portal Support and Hosting Fees					
Annual MDMS / Portal Hosting Fee (SaaS)	1	$ 150,000	$ 150,000	1/1/2019	N/A
Other	1	$ -	$ -	1/1/2019	N/A
Utility Costs					
AMI System Technician (Fully-Burdened)	1	$ -	$ -	1/1/2020	N/A
Data Analyst (Fully-Burdened)	1	$ -	$ -	1/1/2020	N/A

Appendix E – Draft Resolution

RESOLUTION NO.

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF OCEANSIDE AUTHORIZING WATERSMART WATER AND ENERGY EFFICIENCY GRANT FISCAL YEAR 2019

WHEREAS, the United States Bureau of Reclamation (USBR) is soliciting applications for authorized projects for WaterSMART: Water and Energy Efficiency Grant (Program) Funding for Fiscal Year 2019 per Funding Opportunity Announcement No. BOR-DO-19-F004; and

WHEREAS, the City of Oceanside has 45,000 active water meters in the system and desires to implement a project to convert a portion of the meters to Advanced Meter Infrastructure; and

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

WHEREAS, the City of Oceanside is preparing a grant application under this Program for Fiscal Year 2019 with an application due date of March 19, 2019;

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

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

1. The City Manager or her designee is authorized to submit an application to the United States Bureau of Reclamation (USBR) to obtain a WaterSMART: Drought Resiliency Grant Funding for Fiscal Year 2019 per Funding Opportunity Announcement No. BOR-DO-19-F004; and

2. The City Council has reviewed and supports the application submitted on the 19th day of March, 2019; and

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

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

PASSED AND ADOPTED by the City Council of the City of Oceanside, California, this _____day of _____, 2019, by the following vote:

AYES:

NAYS:

ABSENT:

ABSTAIN:

_____
MAYOR OF THE CITY OF OCEANSIDE

ATTEST:

_____
City Clerk

APPROVED AS TO FORM:

_____
City Attorney

INSTITUTE FOR LOCAL GOVERNMENT℠

Promoting Good Government at the Local Level

February 25, 2019

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 2019* (Funding Opportunity Announcement [FOA] No. BOR-DO-19-F004). This vital funding would deploy Automated Metering Infrastructure throughout a portion of Oceanside in North San Diego County.

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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 that ensure that water supplies are efficiently used.

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 funding. If you have any questions, please contact me at 916-658-8274

Sincerely,

Karalee Browne

Karalee Browne, Manager, Institute for Local Government Sustainable Communities Program

1400 K Street, Suite 205 • Sacramento, CA 95814 • 916.658.8208 Fax 916.444.7535 • www.ca-ilg.org

Climate Collaborative
SAN DIEGO REGION

MAR 15'19 PM 2:29

March 4, 2019

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

Dear Commissioner Burman:

I am writing on behalf of the San Diego Regional Climate Collaborative in strong support of 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 2019* (Funding Opportunity Announcement [FOA] No. BOR-DO-19-F004). This project allows Oceanside to manage precious water resources efficiently and provides an important contribution to our region's climate adaptation and mitigation efforts.

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Sincerely,

Christiana Debenedict

Interim Director,
Diego Regional Climate Collaborative

OCEANSIDE
CHAMBER OF
COMMERCE

March 1, 2019

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

Dear Commissioner Burman:

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In conclusion, we ask for full and fair consideration, as permitted under law, of the City of Oceanside's application for DOI WaterSMART Water and Energy Efficiency funding. If you have any questions, please contact me at 760-722-1534 ext. 107.

Sincerely,

Scott M. Ashton, CEO
Oceanside Chamber of Commerce

928 North Coast Highway • Oceanside, California 92054

phone (760) 722-1534 • fax (760) 722-8336 • www.oceansidechamber.com