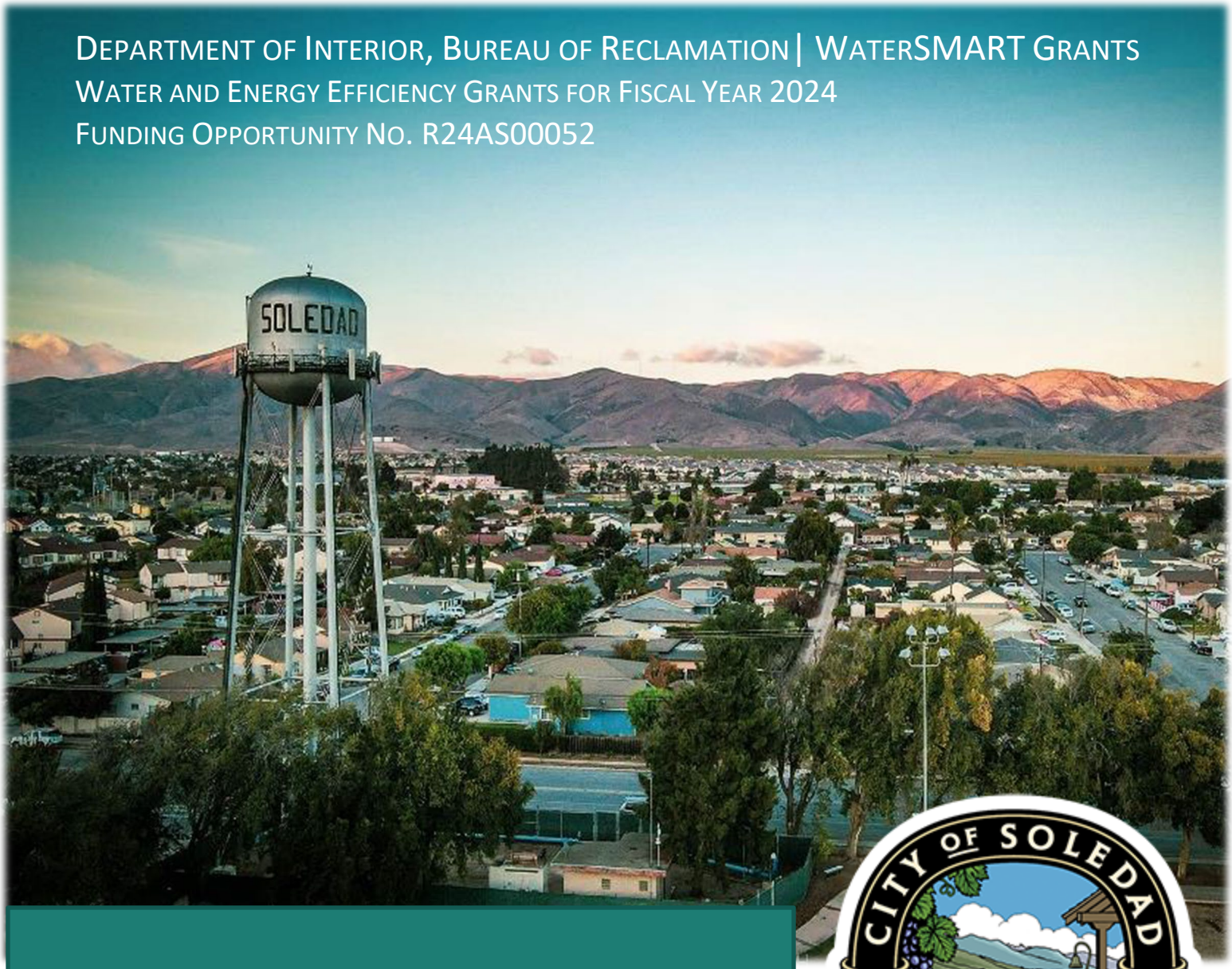
DEPARTMENT OF INTERIOR, BUREAU OF RECLAMATION | WATERSMART GRANTS
WATER AND ENERGY EFFICIENCY GRANTS FOR FISCAL YEAR 2024
FUNDING OPPORTUNITY NO. R24AS00052



CITY OF SOLEDAD

SOLEDAD SMART METERING AND WATER USE EFFICIENCY PROJECT

FUNDING GROUP II

Project Contact Information
City of Soledad
248 Main Street
Soledad, CA 93960
Don Wilcox, Director of Public Works
dwilcox@cityofsoledad.com
(831) 223-5176

February 22, 2024

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Mandatory Federal Forms

The following forms were submitted electronically via grants.gov:

- SF-424 Application for Federal Assistance
- SF-424C Budget Information – Construction Programs
- SF-424D Assurances – Construction Programs
- Project Abstract Summary

Section 1: Technical Proposal and Evaluation Criteria

Executive Summary

Date: February 22, 2024
Applicant Name: City of Soledad
City: Soledad
County: Monterey County
State: California
Project Length of Time: 3 years
Estimated Completion Date: December 2027
Located on a Federal Facility: No

The City of Soledad (City), located in the Salinas Valley of Monterey County, provides water to more than 24,000 residents. As a California city with an agriculture-based economy, water efficiency is critical to its daily operations and longevity. With nearly 4,400 total water connections throughout the city, Soledad is proposing to upgrade to advanced metering infrastructure (AMI) systems in pursuit of improving water conservation and efficiency. The proposed work would include replacing or upgrading approximately 3,500 existing non-AMI meters with ultrasonic flowmeters equipped with AMI cellular technology (smart meters). This upgrade would also include implementation of a new subscription service customer portal. These smart meters would be installed at single-family residences, multi-family housing units, schools, commercial customers, parks, and other municipal connections throughout the City of Soledad. These advanced meters, in conjunction with the customer portal service, offer the City and its customers highly accurate meter readings to enhance water consumption data, and priority alarms for continuous leak and reverse flow events. Ultrasonic flowmeters will provide highly accurate readings that AMI can send through wireless signals in real-time, allowing residents and Soledad utility staff to track water use hourly, daily or weekly, making it easier to achieve conservation targets and detect leaks. Benefits to utility customers include real-time information about water usage and more accurate water bills. To ensure residents are prepared to interpret and harness this new data, the City will provide information via social media, utility bills and more, prior to project implementation.

By shortening leak duration, improving meter accuracy and promoting conservation, the proposed AMI smart meters will allow the City to effectively manage precious water resources and save approximately 244 acre-feet per year (AFY). AMI technology will also save an estimated 181,007 kilowatt hours per year (kWh/Y) of energy and 126.5 metric tons of greenhouse gas (GHG) emissions. The cost for installation of 3,500 new smart water meter systems is $2,805,063 with a Federal share of $1,402,531.

The Soledad Smart Metering and Water Efficiency Project supports the Water and Energy Efficiency goals of the Bureau of Reclamation (BOR) through both water savings and increased reliability. Furthermore, it enhances the BOR's mission to manage, develop and protect water and related resources in an environmentally friendly and economically sound manner. The project leverages the money and resources of the City's ratepayers to conserve water and increase efficiency, and it offsets groundwater pumping in a Sustainable Groundwater Management Act (SGMA) basin with a potential risk of future water conflict.

Project Location

The City of Soledad in Monterey County, California provides water services for approximately 24,000 residents within 4.6 square miles of the City's limits. The project location is within the City's water service area, approximately 25 miles southeast of the City of Salinas and five miles southwest of Pinnacles National Park in the Gabilan Mountain Range. The city is oriented along Highway 101 which runs along the southwestern boundary of the city. The entire project area lies upon the Forebay Subarea of the Forebay Aquifer Subbasin, which is part of the Salinas Valley Groundwater Basin Sustainability Agency (SVGBSA) and within 2.5 miles of the Salinas River. The SVGBSA is managed through SGMA due to the scarcity of resources along with high agricultural demand as well as nitrate contamination and seawater intrusion. The proposed meters will be installed at homes and commercial buildings across the city, benefiting the two disadvantaged census tracts that cover the entire city. The approximate latitude of the center is 36°43' N and the longitude is 121°33' W.

Figure 1 – Regional Location of Soledad

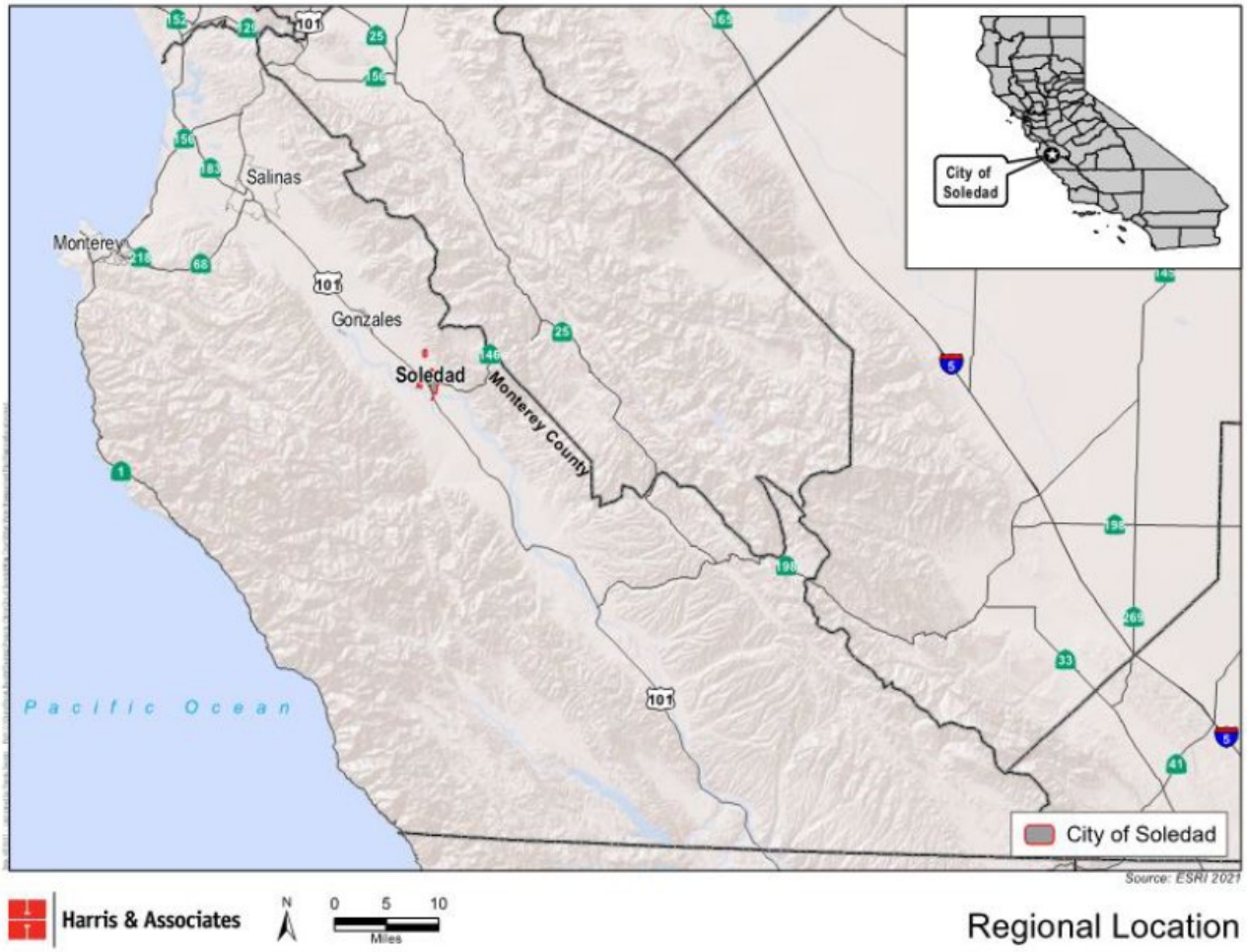
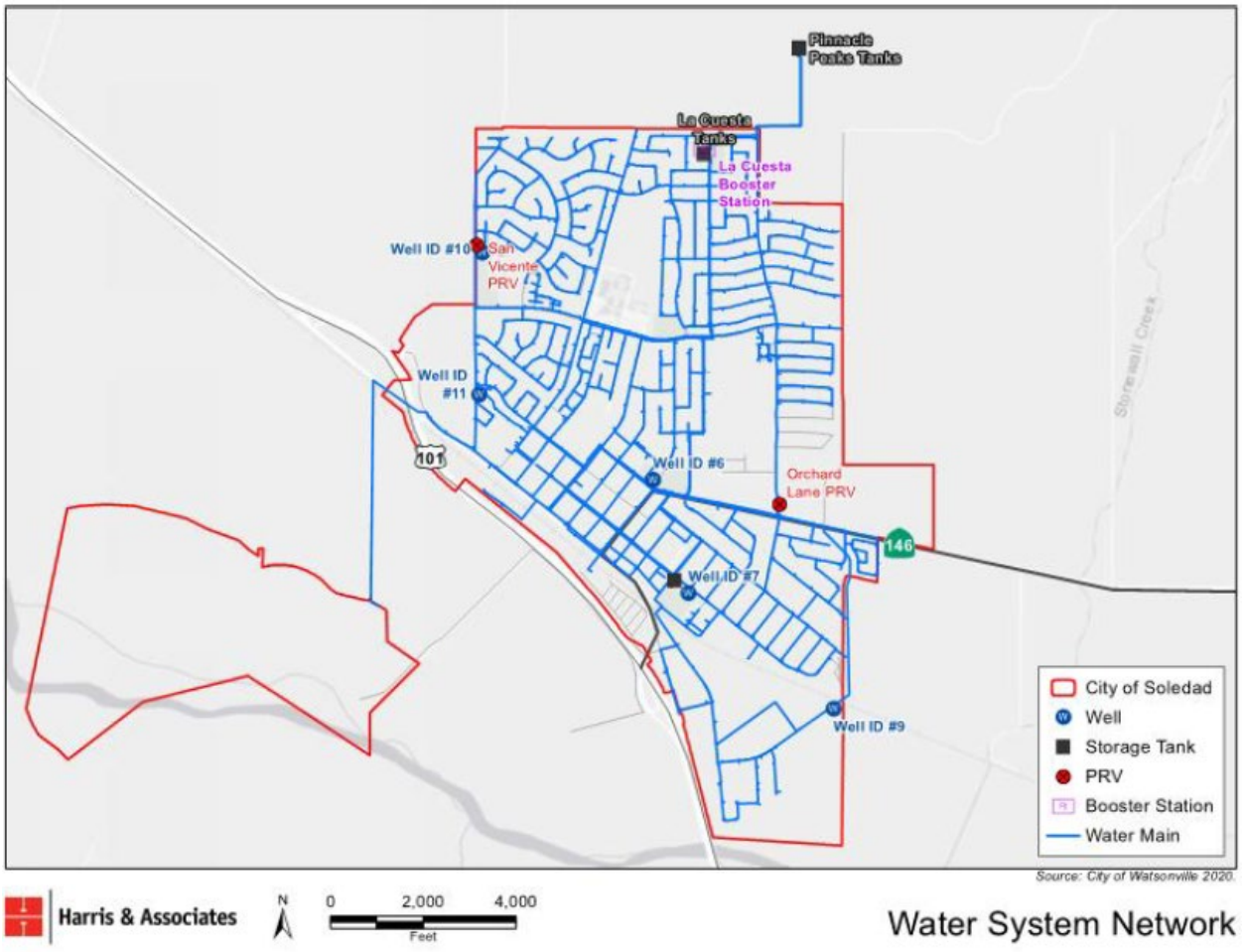


Figure 2 - City of Soledad Water Service Area and System Network



Technical Project Description

The City of Soledad currently provides potable water to its customers through 4,382 metered connections. In 2020, the City began the transition from automatic meter reading (AMR) systems, which operate on a mobile network, to advanced metering infrastructure (AMI), which operates on a fixed network. The majority of the existing AMR systems use Neptune T-10 meters and were installed around 2003. Currently, 882 meters have been upgraded with AMI cellular technology (fixed network), while 3,500 connections remain unchanged.

The Soledad Smart Metering and Water Efficiency Project proposes to replace and upgrade the remaining 3,500 AMR meters with ultrasonic flowmeters and AMI cellular technology (smart meters), which would include a compatible subscription service customer portal, or customer information service (CIS). Meters will range in size from 5/8-inch to 8-inches in size. The implementation of this project will consist of installing smart meters that communicate over a cellular network to a software application that remotely collects the meter reads, notifications, and events. Hourly readings will be provided on a daily basis and distributed to customers

through a new CIS customer portal. The City is considering Neptune Technology Group (Neptune) water meters for the project but will assess their needs and select a manufacturer and model upon award. The City intends to release a Request for Proposals (RFP) to select a vendor for installation of the new meters and AMI systems. Desired features of the selected meters include:

- Real-time web-based monitoring
- Advanced data analytics
- Data alerts of the non-revenue water
- Real-time anomaly detection and load limiting
- Significant water savings
- Flexible billing cycle

Implementation of smart metering systems will require acquisition of the meter and AMI components followed by installation. This process will take over two years to complete and most of the labor will be covered by the City's own operations staff. To install the new AMI meters, the technician will remove the old non-AMI meters and then replace the meter with an ultrasonic unit. This unit will have an adapter that connects the reading mechanism to a cellular endpoint. The endpoint is responsible for collecting the metered water usage and then transmitting it to a central data storage point. This technology includes a subscription service that manages the transmitted data and makes it usable by both the utility and the customer.

To ease the conversion to AMI, customer outreach will be conducted prior to implementation to ensure customer awareness, encourage conservation, and explain how to interpret water use data. Informational material will be distributed through the City's social media accounts, primary website, and utility bills. New meters will be installed annually over the 3-year grant performance period. The City conducts monthly meter tests to track which meters are performing below the accepted level. These monthly records will dictate which meters are replaced the following year. This will ensure that inadequate meters are replaced quickly and do not remain in use, maximizing water savings during project implementation. The water used in Soledad is from a Sustainable Groundwater Management Act (SGMA) basin with limited resources, so conservation is critical. The City will use AMI technology to oversee water usage in the system through the interactive online management tools provided as a service with the AMI-compatible meters.

Figure 3 - How AMI Works

Source: Tata & Howard, Advanced Metering Infrastructure (AMI)

Evaluation Criteria

Evaluation Criteria A - Quantifiable Water Savings

1) Describe the amount of estimated water savings. For projects that conserve water, please state the estimated amount of water expected to be conserved (in acre-feet per year) as a direct result of this project.

The proposed installation of 3,500 ultrasonic meters with AMI cellular technology will produce 244 AFY in water savings.

2) Describe current losses: Please explain where the water that will be conserved is currently going and how it is being used. Consider the following:

- Explain where current losses are going (e.g., back to the stream, spilled at the end of the ditch, seeping into the ground)?
- If known, please explain how current losses are being used. For example, are current losses returning to the system for use by others? Are current losses entering an impaired groundwater table becoming unsuitable for future use?
- Are there any known benefits associated with where the current losses are going? For example, is seepage water providing additional habitat for fish or animal species?

The City of Soledad continues to grapple with the loss of unmetered volumes of water. These losses have a huge negative impact on the City's operational revenues, as well as groundwater supplies, which have been impacted by contamination and overpumping. Soledad exclusively relies on groundwater extracted through five (5) currently active wells within the Forebay Aquifer, a subbasin of the Salinas Valley Groundwater Basin. As such, water is typically lost in two ways:

1. As a result of delayed leak detection in transmission/distribution mains, storage tanks, and service connections (real losses).
2. As a result of inefficient metering and systematic data handling errors, which leads to unauthorized consumption (apparent losses).

Soledad's American Water Works Association (AWWA) Water Loss Audits from 2018-2022 report that the City's total water supply ranged from 2,073 AF to 2,264 AF, with total water loss ranging from 136 AF to 276 AF, or 7-13% of the water supply. Table 1 below provides a breakdown of the water losses for 2018-2022 according to AWWA Audits.

Table 1: Soledad's Annual Reported Distribution System Losses

Calendar Year	Volume of Water Loss* (AF)	Total Water Supply (AF)	System Loss Percent
2018	136.11	2,073	7%
2019	209.63	2,124	10%
2020	179.65	2,264	8%
2021	276.78	2,152	13%
2022	164.56	2,076	8%
Average:	**193.35**	**2,137.8**	**9%**

**Water Loss includes apparent and real losses. Source: 2020 Urban Water Management Plan (Table 4-5) and 2021-2022 AWWA Water Loss Audit Reports.*

Water lost from leakages through mains, storage tanks or connections (i.e., real losses) are most likely infiltrating back into the ground or flowing into a storm drain to the Salinas River and eventually the Pacific Ocean. Lost water that infiltrates into the ground, may re-enter the Salinas Valley Basin for future use, while water that drains into the Salinas River may provide additional flow, improving riparian habitat for species that rely on the River, including steelhead and Chinook salmon. Water lost through apparent losses, such as unauthorized consumption and metering inaccuracies, is likely used by customers then returned to the sewer and wastewater treatment system. A portion of Soledad's wastewater is recycled and used for irrigation at local schools.

3) Describe the support/documentation of estimated water savings. Please provide sufficient detail supporting how the estimate was determined, including all supporting calculations.

Soledad's 2020 Urban Water Management Plan (UWMP) utilizes data from the City's AWWA Water Loss Audit reports for the years 2016-2020. Because UWMPs are updated every 5 years, the City used the AWWA Audits for 2021 and 2022 for more recent data, as seen in Table 1. This data demonstrates that the average total water loss from 2018-2022 was 193 AFY. However, this is the average for the entire Soledad water system, including all 4,382 meters. With these inputs, we can infer that an average individual meter experienced a total loss (apparent and real) of .045 AFY (193 AFY/4,382 meters). Therefore, it can be estimated that the 3,500 meters to be replaced during the proposed project experienced an average of 158 AFY in total water loss between 2018-2022 (3,500 meters x .045 AFY). Upgrading these to smart meters ensures accurate meter reading and eliminates apparent losses, while AMI's ability to record readings hourly and provide real-time data will also significantly improve leak detection and repair, resulting in the elimination of real losses as well. Therefore, the proposed AMI project will provide approximately 158 AFY in savings from recovered water losses.

One more factor to consider when quantifying the water savings of this AMI Project is consumer conservation. When used in collaboration with an compatible customer portal, AMI

provides an amazing opportunity for customers to monitor their water usage at-will, rather than wait more than 30 days for their utility bill, as with current AMR technology. This user-friendly portal also allows customers to compare their own usage to that of similar households to encourage water conservation. The customer education and outreach involved with project implementation will empower users to conserve water and detect leaks by utilizing their real-time water usage data. One study published in the *Journal of the Association of Environmental and Resource Economists* in 2015 found that households using CIS and AMI technology for social comparisons reduced water consumption by 5%. Soledad's average total water supply for 2018-2022 was 2,138 AFY. Since the 3,500 meters included in this project represent 80% of all the meters in the service area, it can be estimated that those meters consumed 1,710 AFY (.80 x 2,138 AFY). Customer conservation will save around 5% of this amount for an additional **86 AFY** in savings (.05 x 1,710 AFY). Therefore, the Soledad Smart Metering and Water Use Efficiency Project is expected to produce a total of **244 AFY** in water savings.

Recovered Water Loss + Consumer Conservation = Total Water Savings

(158 AFY + 86 AFY = 244 AFY)

4) Municipal Metering

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

The proposed smart meter project will achieve water savings by recovering water losses and increasing water conservation through customer education and use of real-time data. Installation of ultrasonic meters and AMI technology will reduce water loss from metering inaccuracies and leaks, while providing customers with the data they need to use water more efficiently and conserve.

Both the 2021 and 2022 AWWA Audit Report state that total apparent losses were about 29 AFY, including 19 AFY from customer metering inaccuracies, 5 AFY from unauthorized consumption, and 5 AFY from systematic data handling errors. Recovery of these apparent losses is an essential consideration when calculating water savings, as these can be reduced nearly completely with the implementation of smart metering and ultrasonic meters. Meter testing in 2022 found that the City's Neptune T-10 5/8-inch meters (largely represented by single-family residences) had an average efficiency of 84%, while 1-inch meters (generally assigned to higher volume consumers, like commercial, industrial, multi-family or irrigation facilities) had an average efficiency of 94%. Ultrasonic flowmeters measure with 99% accuracy, effectively eliminating loss from metering inaccuracies. Ideally, the meters selected for this project will have load limiting capabilities in addition to real-time anomaly detection. Using machine learning at the edge, smart meters with these capabilities can detect anomalies in real-time and initiate load limiting directly to prevent unauthorized consumption. Lastly, the proposed modern cellular technology and compatible software system minimize

human interference and data handling errors, improving the overall system metering efficiency. Apparent losses like these account for about 20% of total water losses.

Real losses account for the remaining 80% of total water losses and include leaks throughout the water system up to the point of customer consumption (customer meter). These real losses were 248 AFY in 2021 and 136 AFY in 2022. Leakage sources are typically the distribution mains, storage tanks, valves (faucets, water bibs, etc.), broken or cracked pipes, hot water heaters, and irrigation systems. Enabled with AMI's hourly readings and real-time anomaly detection, leaks at these sources will be identified by the AMI soon after they occur and the City will be notified right away. This allows the customer and/or City staff to respond to and repair the leak quickly, avoiding further leakage and significant water loss. The current system lacks this constant communication and allows more than 30 days to pass before a leak is identified. If the new meters have load limiting capability, leaks can be limited immediately upon detection. Upon completion of this project, every meter within Soledad will be equipped with AMI technology, allowing the City to track water use patterns throughout the service area and detect leaks that may be occurring in distribution mains, not just at customer connections. For these reasons, the proposed project is expected to recover a significant portion of real losses from leaks throughout the water system. Combined, the recovery of both apparent and real losses (i.e., total water losses) will produce a water savings of **158 AFY**.

Another way to conserve water is to provide customers with real-time, informative data that is easy to access and comprehend. Allowing customers to visually see their usage helps them better understand the City's water goals and helps them realize their contribution in achieving those goals. The proposed new CIS will present data in a way that is user-friendly and easy to digest. To prepare customers to use their data effectively, Soledad will educate customers on how to read and interpret the water usage data, and a line of communication will remain open if there are ever any questions. This education will also inform customers about their impact on the drought and the importance of water conservation in California. This will result in a behavioral change that could make significant strides in water conservation, around 5% savings according to a study titled *Social Comparisons, Household Water Use, and Participation in Utility Conservation Programs: Evidence from Three Randomized Trials* by D.A. Brent, J.H. Cook and S. Olsen (2015). Consumer conservation will be approximately **86 AFY**.

Altogether, the proposed smart metering project will nearly eliminate water losses and lead to customer conservation for a total water savings of **244 AFY**. Detailed calculations are included in Evaluation Criteria A.3. Documentation of estimated water savings and system losses are based on data collected by the City of Soledad using the AWWA's Free Water Audit Software as part of the annual audits for 2016-2022 (the 2021 and 2022 AWWA Water Loss Audit reports can be found in Appendix A). 2016-2020 AWWA Audit data was collected from the City's 2020 UWMP, while 2021 and 2022 data was taken directly from the AWWA Audit worksheets. This is due to the fact that the UWMP is updated every five years, and the current version does not contain data past 2020.

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

The City of Soledad calculated current system losses with AWWA's Free Water Audit Software in accordance with California Department of Water Resources guidelines for the purposes of completing annual water loss audits. These audits indicate that roughly 80% of water loss is from unmetered leaks, which can be addressed through real-time water use monitoring and anomaly detection. The other 20% is largely represented by metering inaccuracies. Meter efficiency testing revealed that the meters at single-family connections have an average efficiency of 84%, indicating there is potential to increase meter efficiency approximately 16% with new and enhanced meters.

The potential for reductions in water use by individuals was determined to be approximately 5% based on the previously mentioned *Journal of the Association of Environmental and Resource Economists* study by Brent, Cook and Olsen. Conservation on the consumer's end will be fostered by the user-friendly customer portal that displays hourly data in an easy-to-digest manner. Through this portal, customers will also be able to set a usage threshold and they will automatically be notified via email or text message if consumption rises above that limit. The State of California has proven that customer outreach and public education are effective methods of increasing water conservation, especially during times of drought. The City of Soledad intends to utilize this knowledge by educating its customers and conducting outreach to ensure consumers understand how to interpret water use data and why conservation is critical, especially in California. Customer education, accessible water use data and the incentive to reduce their water bills will have a great impact in water conservation.

c. For installing end-user water service meters, e.g., for a residential or commercial building unit, refer to studies in the region or in the applicant's service area that are relevant to water use patterns and the potential for reducing such use. In the absence of such studies, please explain in detail how expected water use reductions have been estimated and the basis for the estimations.

Soledad is a member of many regional planning groups which provide proactive management of water resources at both the groundwater and consumer levels. The Salinas Basin Valley Groundwater Sustainability Agency (SVBGSA) is the larger entity under the Sustainable Groundwater Management Act, and Soledad is a primary agency using the Forebay Aquifer Subbasin. Under the rules of the stipulated judgements put forth for management of the Basin, Soledad must comply with and participate in efforts to conserve the groundwater resources therein. As an urban water supplier with more than 3,000 connections, Soledad must complete an Urban Water Management Plan every five years. The UWMP provides information specific to the City's water use and plan for conservation, including a Water Shortage Contingency Plan. It is contained within the Integrated Regional Water Management Plan (IRWMP) for the Greater Monterey County Region, which is one of the foundational documents formed by water management agencies within the greater Monterey County

region to meet regulatory requirements and aid in guiding effective regional and local decision-making.

According to data in the 2020 Soledad UWMP (Table 4-1), single-family residences accounted for 59% of water demand in 2020, while multi-family residences accounted for 12%, institutional/governmental connections accounted for 10%, commercial accounted for 6%, other connections accounted for 5%, and the remaining 8% represented water losses, as seen in Figure 4 below. The high percentage of residential demand (71%) suggests that consumer conservation will have a notable impact on water savings.

Figure 4: Demands for Potable Water – 2020 Actual

Use Type	Volume (AF)	Percent of Total Demand
Single Family (residential)	1,333.98	59%
Multi-Family (residential)	275.82	12%
Institutional/Governmental	219.04	10%
Commercial	125.54	6%
Landscape	79.15	3%
Other Potable (hydrant)	24.52	1%
Other Potable (authorized unbilled)	22.78	1%
Industrial	3.78	<1%
Losses	179.65	8%
Total	**2,264.26**	**100%**

Source: 2020 Soledad Urban Water Management Plan, Table 4-1

The UWMP attributes water losses to a several factors:

1. Metering inaccuracies
2. Unauthorized consumption
3. Systematic data handling errors
4. Physical water losses from leaks

The potential for reducing current water use is an integral purpose of Soledad's Smart Metering and Water Efficiency Project. Ultrasonic meters will significantly improve metering accuracy, while real-time data and accompanying AMI capabilities will reduce water loss from leaks and unauthorized consumption. Complementary software and data handling system will minimize systematic data handling errors. Soledad is eager to recover current losses and believes that updating meters with ultrasonic meters and AMI technology is the most effective means of recovering water losses and reducing water demand simultaneously.

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

Estimates were obtained for the full system meter replacement with Neptune brand meters. These meters varied in size and therefore model number. This estimate was meant to provide

the City with planning values for the system to determine the feasibility of the project. A similar alternative meter may be selected in the procurement phase of the project. This decision will be based on the needs of the City and what each manufacturer can offer to ensure the implementation of the project is the most well suited to the system and its customers. The City will require 3,500 meters.

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

Upon completion of the smart metering project, the amount of water savings will be verified by reviewing historical water usage data prior to implementation of the AMI system and comparing it with water usage data after implementation for a minimum of two years. Soledad annually conducts system water audits by comparing the total volume of billed water use to the total supply entering the system. AWWA Water Loss Validation Audits will be utilized to monitor quantified water losses, including the breakdown of losses due to leakages, meter inaccuracies, theft, etc. Through annual comparison of metered data, Soledad can identify patterns of water use to determine if losses have decreased and water has been conserved by consumers.

Evaluation Criteria B - Renewable Energy

Evaluation Criterion B.2: Increasing Energy Efficiency in Water Management

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

- If quantifiable energy savings is expected to result from the project, please provide sufficient details and supporting calculations. If quantifying energy savings, please state the estimated amount in kilowatt hours per year.

Quantifiable energy savings are expected to result from the annual water savings associated with replacing the proposed 3,500 meters with ultrasonic meters and AMI technology. To calculate energy savings, we multiplied the water savings in acre-feet per year by the energy intensity (EI) the Soledad water consumes to pump groundwater into their supply system. According to the 2020 Urban Water Management Plan (UWMP), the City relies exclusively on groundwater pumping, which has an EI of 741.83 kWh/AF.

$$244\ \frac{AF}{Y} \times 741.83\ \frac{kWh}{AF} = 181{,}006.5\ \frac{kWh}{Y}$$

With the installation of 3,500 meters, the quantifiable energy savings is 181,006.5 kWh/Y.

- How will the energy efficiency improvement combat/offset the impacts of climate change, including an expected reduction in greenhouse gas emissions.

The direct relationship between energy consumption and greenhouse gas (GHG) emissions indicates that improved energy efficiency will reduce greenhouse gas emissions. The United States Environmental Protection Agency (EPA) created a Greenhouse Gas Equivalencies Calculator which converts the amount of energy savings in kWh avoided to GHG emissions reduced. To calculate emissions avoided, the EPA reports the following emission factor using data from 2021:

1,540.1 lbs CO2/MWh × 1 metric ton/2,204.6 lbs × 0.001 MWh/kWh = 6.99 × 10-4 metric tons CO2/kWh

Multiplying the previously calculated energy savings by the emission factor of electricity reductions results in the corresponding GHG emissions avoided:

$$181{,}006.5\ \frac{kWh}{Y} \times 6.99 \times 10\text{-}4 \text{ metric tons } CO_2/\text{kWh} = \mathbf{126.5 \text{ metric tons } CO_2}$$

- If the project will result in reduced pumping, please describe the current pumping requirements and the types of pumps (e.g., size) currently being used. How would the proposed project impact the current pumping requirements and energy usage?

The project will result in reduced pumping and energy usage from water conserved by the installation of AMI meters. Groundwater is currently supplied by four active pumps which include one 50 HP (horsepower) pump, two 150 HP pumps, and one 200 HP pump. In 2022, the City supplied 2,076 AF of water to the project area (2020 UWMP). The proposed project will conserve about 244 AFY by detecting leaks and promoting user conservation which will result in less annual pumping. Reducing annual pumping will also reduce energy consumption associated with pumping. Dividing the water saving associated with the installation of AMI meters by the current annual pumping requirements shows that the project will relieve about 11.8% of groundwater pumping.

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

Energy saving estimates originate from the point of diversion.

- Does the calculation include any energy required to treat the water, if applicable?

The EI reported in the City of Soledad's 2020 UWMP includes the energy required to treat water in the original calculation.

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

The current meter infrastructure requires City staff to conduct automated meter readings (AMR) every month. This requires driving a minimum of 38 miles around the City to collect readings, accumulating to 456 miles annually. Replacing current AMR infrastructure with AMI will eliminate the need for vehicle miles driven for meter reading purposes and reduce GHG emissions.

The City currently conducts meter readings with one fleet vehicle, a 2019 Dodge Ram which has fuel efficiency of about 20 miles per gallon citywide. Travelling 456 miles, the City's vehicle consumes about 22.8 gallons of fuel each year. The EPA's Greenhouse Gas Equivalencies Calculator states that 8.89×10^{-3} metric tons of CO_2 is emitted per gallon of motor gasoline burned. To calculate CO_2 emissions, gallons of fuel consumed are multiplied by 8.89×10^{-3} metric tons. The proposed project will reduce 456 vehicle miles driven and consequently reduce GHG emissions by an additional **0.203 metric tons of CO_2** per year.

$$(456 \text{ miles} / 20 \text{ mpg}) \times 8.89 \times 10^{-3} \text{ metric tons of } CO_2 = \mathbf{0.203 \text{ metric tons of } CO}$$

According to the City's 2020 Urban Water Management Plan (UWMP 2020), the meter system requires re-reading if a significant increase in water usage is detected. In 2020 this resulted in an estimated 14 visits per month due to water leaks. The proposed project will simultaneously eliminate the need for meter readings, reduce the need for frequent meter visits, and improve leak detection which will likely result in greater reductions in GHG emissions.

- Describe any renewable energy components that will result in minimal energy savings/production (e.g., installing small-scale solar as part of a SCADA system).

This project does not have a renewable energy component.

Evaluation Criteria C – Other Project Benefits

Resilience and Sustainability Benefits. Will the project address a specific water and/or energy sustainability concern? Please address the following:

• Explain and provide detail of the specific issue(s) in the area that is impacting water resilience and sustainability. Consider the following:

- Describe recent, existing, or potential drought or water scarcity conditions in the project area.
- Is the project in an area that is experiencing, or recently experienced, drought or water scarcity?
- Describe any projected increases to the severity or duration of drought or water scarcity in the project area. Provide support for your response (e.g., reference a recent climate informed analysis, if available).

The primary water sustainability concern that this project addresses is potential future water shortages due to climate change and severe drought. As climate change progresses, precipitation and groundwater replenishment will become increasingly sporadic and unreliable, while water demand increases. Drought concerns are further exacerbated by projected future

demand increases. Expected future demand will continue to increase over the coming decades and is anticipated to reach over 3,700 acre-feet by 2045, compared to the 2,264 acre-feet demand of 2020. Conservation in the Basin has been extensive in response to the ongoing drought. However, in accordance with the community's General Plan, development in the area continues to add further demand to the water supply. Soledad's water supply must be sustainability managed, as 100% of it is pumped from the Forebay Subbasin.

•Explain and provide detail of the specific issue(s) in the area that is impacting energy sustainability, such as reliance on fossil fuels, pollution, or interruptions in service.

The City of Soledad currently relies on fossil fuel energy sources. While the City is planning to shift towards renewable energy sources, projects that conserve energy complement the City's sustainability goals to decrease reliance on fossil fuels.

•Please describe how the project will directly address the concern(s) stated above.

The Phase 1 AMI project will decrease reliance on fossil fuels and improve energy sustainability by improving energy efficiency. Installing 3,500 AMI meters will reduce the City's annual energy consumption by about 181,007 kWh.

•Will the project directly result in more efficient management of the water supply? For example, will the project provide greater flexibility to water managers, resulting in a more efficient use of water supplies?

The proposed project will improve management of the water supply by preventing meter inaccuracies, conserving water, and detecting leaks. Demand management is a key strategy in the City's plan to manage water resources and ensure water service reliability during average years and drought years. Currently, all water meter connections are monitored monthly, resulting in gaps in data and waiting periods up to 30 days before leaks are detected and resolved. AMI systems will track water usage in real-time, providing meaningful water use data to the City and customers. The Smart Meters will also provide key trends in water usage to help customers adjust their water usage to be more efficient. More frequent readings will also set a more accurate baseline for customers, leading to easier and quicker detection and solution of anomalies in water use.
Soledad has made great strides in water conservation over the past decade. The City surpassed the 2020 target set by the California Water Conservation Act of 2009, reaching a 26% reduction from the baseline per-capita water use established in 2010. Although, as drought conditions continue to challenge the region, the City is looking for new ways to reduce water demand and conserve groundwater. AMI technology will provide new tools that empower customers to make better decisions about their water use. AMI is proving to be an effective solution around the world for educating consumers about their water consumption and the impact such conservation would have in reducing expenses. This enhanced meter has the potential to yield reductions in water use and increase conservation awareness by all customer groups served and ultimately, contribute to the sustainable and efficient management of the water supply.

•Please address where any conserved water as a result of the project will go and how it will be used, including whether the conserved water will be used to offset groundwater pumping, used

to reduce diversions, used to address shortages that impact diversions or reduce deliveries, made available for transfer, left in the river system, or used to meet another intended use.

- Indicate the quantity of conserved water that will be used for the intended purpose(s).
- Provide a description of the mechanism that will be used, if necessary, to put the conserved water to the intended use.

The 244 AFY of water that is conserved through the proposed project will supplement the groundwater in the Forebay Aquifer Subbasin of the Salinas Valley Groundwater Basin.
No additional mechanism will be needed to distribute the conserved water for its intended use. The conserved water will be used to enhance the current groundwater supply.

•Will the project assist States and water users in complying with interstate compacts? intended use.

The project will not assist States and water users in interstate compact compliance.

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

The project will contribute to preventing the depletion of groundwater levels in the Salinas Valley Groundwater Basin during times of water scarcity. Frequent droughts in California increase potential for a water-related crisis which can only be offset by water conservation efforts such as the AMI project. Conserving water and supplementing groundwater with water savings will help mitigate water crises in California.

Ecological Benefits. Please provide information regarding how the project will provide ecosystem benefits, including the following:

•Will the project benefit species (e.g., federally threatened or endangered, a federally recognized candidate species, a state listed species, or a species of particular recreational, or economic importance)? Please describe the relationship of the species to the water supply, and whether the species is adversely affected by a Reclamation project or is subject to a recovery plan or conservation plan under the Endangered Species Act (ESA).

Yes, the Salinas River is an important habitat for several special-status species. This project's ability to reduce Interconnected Surface Water (ISW) depletion and increase Salinas River surface flow will benefit the following species to some degree: South-Central California Coast steelhead (threatened), California red-legged frog (threatened), bank swallow (threatened), least Bell's vireo (endangered), San Joaquin kit fox (endangered), and Abbott's bushmallow (endangered). To our knowledge, none of these species are adversely affected by a Reclamation project.

The Salinas River, along with its major tributaries the Arroyo Seco, San Antonio River, and Nacimiento River, are all designated as critical habitat for steelhead. However, of these tributaries, only Arroyo Seco is not blocked by a major dam. The other two rivers are intensely regulated by the Nacimiento Dam and San Antonio Dam. Thus, the ability for the Salinas River

to retain its instream flow when its tributaries do not contribute much is crucial. This project will help the Salinas River do just that by maintaining a higher water level in the Forebay Aquifer Subbasin and reducing ISW depletion.

Depletion of ISW along the Salinas River due to groundwater pumping was estimated using the Salinas Valley Integrated Hydrologic Model (SVIHM1), as described in Section 5.5.2 of the Groundwater Sustainability Plan (GSP). Along the Salinas River, average depletion of ISW is estimated to be 9,300 AFY during peak conservation release period and 20,400 AFY during the non-peak period. A higher water level in the subbasin will maintain a more saturated intermediary zone, reducing infiltration from the Salinas River during peak and non-peak periods. Less ISW depletion will increase surface flows and support the riparian ecosystem along the Salinas River, including the aforementioned special-status species.

The City's AMI project will have no negative impacts to endangered, threatened, candidate species, or critical habitats. Conversely, the AMI project would only have positive impacts to species and habitats.

•Will water remain in the system for longer periods of time? If so, provide details on current/future durations and any expected resulting benefits (e.g., maintaining water temperatures or water levels, recreational benefits, etc.).

This proposed project will not alter the length of time water remains in the system.

•Will the proposed project reduce the likelihood of a species listing or otherwise improve the species status?

The proposed project will not affect the likelihood of a species listing.

•Please describe any other ecosystem benefits as a direct result of the project.

In addition to benefiting several endangered and threatened species, this project will also benefit and support the multitude of wildlife species that rely on Salinas River surface flows. As previously mentioned, the implementation of AMI technology will offset the pumping of approximately 244 acre-feet of groundwater annually, maintaining a higher water level in the Forebay Aquifer Subbasin and reducing infiltration from the Salinas River into the subbasin, leaving more surface water to support a healthy riparian ecosystem.

Climate Change. E.O. 14008 emphasizes the need to prioritize and take robust actions to reduce climate pollution; increase resilience to the impacts of climate change; protect public health; and conserve our lands, waters, oceans, and biodiversity.

•Describe how the project addresses climate change and increases resiliency. For example, does the project help communities adapt to bolster drought resilience?
intended use

The proposed AMI project is a drought resilient initiative that will address impacts of climate change by savings an estimated 244 acre-feet of groundwater per year through leak reduction and water conservation. AMI technology will empower the City and customers to monitor water usage in real-time, enabling both parties to reduce water consumption immediately following identification of excessive use. This will reduce water demand and production in the short and long term, extending water storage in the Forebay Subbasin and increasing availability during periods of drought.

Water conservation/water use efficiency is a key strategy for meeting future demand, especially amidst the prolonged drought conditions in California. Efficient water use is the most cost-effective way to achieve long-term conservation goals and to provide the water supply reliability needed to adapt to the longer and more intense droughts that climate change is causing in California. As climate change progresses, precipitation and groundwater replenishment will become increasingly sporadic and unreliable, while water demand will increase, particularly for agriculture. Installing smart meters will allow Soledad to pump and distribute groundwater more efficiently with less water lost in the process. Careful tracking of residential and commercial water use is essential to ensuring the longevity of the Forebay Aquifer Subbasin, especially through the climatic changes expected in oncoming years. Implementation of AMI technology is critical to gain accurate water use data and quantify water conservation and savings by reliably identifying leaks, excessive flows, and water theft. The identification and correction of these anomalies in addition to real-time water use tracking will help the City and customers further conserve and offset the pumping of 244 acre-feet of groundwater per year.

•Does the project seek to improve ecological resiliency to climate change?

The proposed project will improve drought resiliency by reducing water use by 244 AFY and encourage the community to track water use data. While it is not the direct intention of the project to enhance ecological resiliency to climate change, the project does accomplish this as a secondary benefit. The City uses local groundwater from the Forebay Aquifer Subbasin as the sole source of water supply. By conserving more water through the implementation of AMI, a higher water level in the Forebay Aquifer Subbasin is maintained, which better supports the ISW of the Salinas River above the subbasin.

•Does the proposed project seek to reduce or mitigate climate pollutions such as air or water pollution?

The project will mitigate GHG emissions associated with energy savings and reduced vehicle miles driven. Eliminating monthly vehicles travel to collect meter readings will reduce CO2 emissions by 0.203 metric tons every year. Reducing energy demands to pump groundwater by eliminating water losses will save energy and reduce an additional 126.5 metric tons of CO2 emissions annually. This results in a combined GHG reduction of 126.7 metric tons of CO2 emissions.

•Does the proposed project include green or sustainable infrastructure to improve community climate resilience?

Yes, the project will replace outdated water meters with AMI capable meters which will provide frequent and accurate water use data. The updated meters will improve community climate

resilience by rapidly detecting leaks and preventing excessive water loss. This conservation effort will bolster the community in the long run and prevent unnecessary water loss.

•Does the proposed project contribute to climate change resiliency in other ways not described above?

One of the benefits of real-time data and AMI infrastructure is that PWP customers can track their water usage to understand their precise consumption patterns. This will improve climate resiliency by bolstering communities to actively involve and become educated in conservation efforts.

Evaluation Criteria D – Disadvantaged Communities, Insular Areas, and Tribal Benefits

Subcriterion D.1. Disadvantaged Communities Will the project address a specific water and/or energy sustainability concern? Please address the following:

• Please use the White House Council on Environmental Quality's interactive Climate and Economic Justice Screening Tool (CEJST), available online at Explore the map Climate & Economic Justice Screening Tool (screeningtool.geoplatform.gov/ en/#17.59/36.63278/-105.181329) to identify any disadvantaged communities that will benefit from your project. The CEJST developed by the White House Council on Environmental Quality is a geospatial mapping tool that utilizes publicly available, nationally consistent data sets related to climate change, the environment, health, and economic opportunity to identify disadvantaged communities. In addition to identifying specific census tracts that are disadvantaged, the CEJST includes the lands of Federally recognized Tribes as disadvantaged communities. In addition, regardless of whether a Federally recognized Tribe has land, all Federally recognized Tribal entities are considered disadvantaged communities for the purposes of the Justice40 Initiative.[2]

The City of Soledad is split into two tracts (06053011102 and 06053011101) on the Climate and Economic Justice Screening Tool (CEJST), both of which are indicated as disadvantaged on the online tool. Both tracts are disadvantaged due to linguistic isolation and a low percentage of people over 25 years old with a high school diploma. The southwest tract also indicates a high percentile of low-income residents. Soledad City limits also include tract number 06053010900, which houses a Correctional Training Facility (CTF). Although the CEJST determines the CTF tract is disadvantaged, it is not part of the project location and will not be included in this justification.

• If applicable, describe how the proposed project will serve or benefit a disadvantaged community, identified using the tool. For example, will the project improve public health and safety by addressing water quality, add new water supplies, provide economic growth opportunities, or provide other benefits in a disadvantaged community?

According to US Census Data collected by the American Community Survey in 2020, the population of Soledad is 79% Hispanic and Latino. Historically, Latino communities in California have experienced greater economic disparities and structural challenges towards homeownership, educational opportunities, and economic stability. In the case of Soledad, the disadvantaged community is also burdened by linguistic isolation and limited

education according to the CEJST. The proposed AMI project will benefit the disadvantaged population in Soledad by making water use data accessible online where translation services are readily available.

The project will further benefit the City's disadvantaged communities by improving the cost efficiency of water services and improving access to water-use data. AMI technology is designed to detect leaks and track water usage. By digitizing and automating the data collection process, disadvantaged residents will be able to avoid expensive water leaks. Improved readings on water usage will also help residents conserve water and save on monthly water bills. In addition to everyday benefits, the long-term benefit of water conservation will improve climate resiliency and drought resistance in the City. Considering disadvantaged communities are often disproportionately affected by environmental hazards, such as drought, the improved metering system will lessen any future harm on residents. Grant funding for the metering project will allow the City to extend AMI benefits to disadvantaged residents.

Subcriterion D.2. Tribal Benefits

The Department is committed to strengthening tribal sovereignty and the fulfillment of Federal Tribal trust responsibilities. The President's memorandum, *Tribal Consultation and Strengthening Nation-to-Nation Relationships*, asserts the importance of honoring the Federal Government's commitments to Tribal nations. Address the following, if applicable:

- Does the proposed project directly serve and/or benefit a Tribe? Will the project increase water supply sustainability for an Indian Tribe? Will the project provide renewable energy for an Indian Tribe?
- Does the proposed project support Tribal led conservation and restoration priorities, and/or incorporate or benefit indigenous traditional knowledge and practices?
- Does the proposed project directly support tribal resilience to climate change and drought impacts or provide other Tribal benefits such as improved public health and safety through water quality improvements, new water supplies, increased renewable energy, or economic growth opportunities? Does the proposed project support Reclamation's Tribal trust responsibilities or a Reclamation activity with a Tribe?

The proposed project does not directly serve a Tribe therefore Tribal benefits are not applicable.

Evaluation Criteria E - Complementing On-Farm Irrigation Improvements

This criterion is not applicable to this project.

Evaluation Criteria F – Readiness to Proceed

- Identify and provide a summary description of the major tasks necessary to complete the project. **Note: Do not repeat the more detailed technical project description.**

The Soledad Smart Metering and Water Efficiency Project requires the following major tasks to be completed:

1. Project Management and Reporting – Sign grant agreement, select AMI Project Manager, grant administration
2. Environmental Review – CEQA process
3. Procurement and Implementation – Release RFP and award contract

4. Installation of ultrasonic meters and AMI System – Customer outreach and hardware and software installation
5. AMI Software Integration

A summary of the major tasks to be accomplished included in Table X below.

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

Soledad will be replacing existing water meters and endpoints with new AMI endpoints. The process of replacing these devices does not require any permits.

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

The selected vendor through the RFP process will provide the necessary information needed on the cellular AMI endpoints and meters in order to implement the project.

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

No new policies or administrative actions are required to implement the project. However, the new interface for the AMI meters will be a task added to the staff for the City. This will require less physical maintenance, but more clerical management.

- Describe the current design status of the project. If additional design work is required prior to construction, describe the planned process and timeline for completing the design work.

Project does not require design work.

- Please also include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates. Milestones may include, but are not limited to, the following: complete environmental and cultural compliance; mobilization; begin construction/installation; construction/installation (50% complete); and construction/installation (100% complete). Was the expected timeline for environmental and cultural compliance discussed with the local Reclamation regional or area office?

Table X: Outline of Estimated AMI Implementation Plan

Estimated Implementation Plan			
Task	**Phase**	**Start**	**Finish**
Task 1: Project Management and Reporting	Award Funding	December 2024	January 2025
	Select AMI Project Manager	January 2025	January 2025
	Grant Administration	December 2024	December 2027
Task 2: Environmental Review	CEQA Process	February 2025	February 2025
Task 3: Procurement and Implementation	RFP release, review of proposals, & award of contract	February 2025	July 2025

	Procure new meters, cellular communication endpoints, AMI software, and an integration system	July 2025	September 2025
	Prepare detailed implementation plan	August 2025	September 2025
Task 4: Installation of AMI System	Install new AMI meters	November 2025	December 2026
	Community outreach & customer communication/notification	December 2026	March 2027
Task 5: AMI Software Integration	Complete CIS & Billing software integration	February 2027	December 2027

Evaluation Criteria G - Collaboration

Up to **5 points** may be awarded for projects that promote and encourage collaboration among parties in a way that helps increase the sustainability of the water supply. Consider the following:

- Is there widespread support for the project? Please provide specific details regarding any support and/or partners involved in the project. What is the extent of their involvement in the process?

This project has widespread community support for water conservation in the region which dates back at least fifteen years. Per California Water Code (CWC) Sections 10610-10657, urban water suppliers are required to update its long-term resource planning document every five years. In 2020, the City updated it's 2020 Urban Water Management Plan (UWMP) to be compliant as well as address new requirements enacted by the California State Legislature since 2015. An approved UWMP was submitted to the Department of Water Resources in August 2021. The City prepared its first UWMP in 2006 and has since updated the plan every five years. As part of the latest update, the City started engaging the public starting in June 2021 and held a public hearing and encouraged public participation by posting a hearing notice, sending 60-day notice letters, and making the draft plan available to the public and local agencies. Local agencies consisted of two nearby municipalities, school district, state correctional facility, businesses, and water management agencies.

In 2019, local stakeholders, businesses, and public agencies came together to develop the Salinas River Long-Term Management Plan (SRLTMP), which included input from twenty-eight different stakeholder organizations that were involved in the planning of the SRLTMP. The Salinas River serves as the groundwater basin for the City of Soledad water utility.

In addition, as part of the development of this project application, the city engaged community members by developing a short survey that was posted on the City's website and social media. Approximately 29 members of participated in a recent survey indicating support for new water meters and improved technology for customers.

- What is the significance of the collaboration/support?

There is strong support from the City of Soledad City Council, Soledad water utility customers, Greater Monterey County IRWMP, and Water Awareness Committee of Monterey County. Support from regional agencies is significant because the new smart meters and updated meter technology will improve water monitoring efficiency that will benefit water resources within the groundwater basin.

Another significant element of this project is how the project is a joint effort between the City and each of its customers. The updated technology will provide the City with new tools to monitor water losses and managing water usage. The new customer portal will allow users to access near real-time water data to view water use and allow them to immediately adjust water usage, instead of waiting for their water bill to arrive.

- Will this project increase the possibility/likelihood of future water conservation improvements by other water users?

The project will greatly increase the likelihood of future conservation improvements by other water users. The new customer portal will directly facilitate reduced water consumption for Soledad water utility customers. In addition, the receipt of grant funding for this project, may also serve as a catalyst for other nearby cities, water districts, and supplier to implement similar smart meter and water efficiency improvements.

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

The proposed project affects multiple sectors and/or user including residential, recreational and municipal connections, such as local wineries and the Soledad swimming pool.

- Please attach any relevant supporting documents (e.g., letters of support or memorandum of understanding).

Letters of support are attached in Appendix B.

Evaluation Criteria H - Nexus to Reclamation

Describe the nexus between the proposed project and a Reclamation project or Reclamation activity. Please consider:

- Does the applicant have a water service, repayment, or operations and maintenance (O&M) contract with Reclamation?

- If the applicant is not a Reclamation contractor, does the applicant receive Reclamation water through a Reclamation contractor or by any other contractual means?

- Will the proposed work benefit a Reclamation project area or activity?

- Is the applicant a Tribe?

This criterion is not applicable to this project.

H.1 Environmental and Cultural Resource Considerations

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

The proposed AMI project will have minimal, if any, impact on the surrounding environment, including ground-disturbing activities. Replacement of the City's meters will occur within existing meter vaults and meter receiving assemblies and will not disturb the surrounding ground. Some disturbances will occur as needed for electrical conduit installation and other related activities, however, any ground that must be broken will be within existing streets or other manmade surfaces and will not have any known or significant impact on air, land, water, or wildlife habitat.

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

No, there are no known species listed or proposed to be listed as a Federal threatened or endangered species within the project area. There is no designated critical habitat in the project area. The special status species described in the Other Project Benefits Section reside within the Salinas River and are not expected to be affected by any activities associated with the proposed project. Conservation of groundwater will only help to enhance surface flow of the Salinas River.

- 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.

Although the Salinas River does flow through City boundaries where the project will occur, there are no anticipated impacts due to the nature of the project. Meter replacement will occur at existing infrastructure in a built environment.

- When was the water delivery system constructed?

Soledad's water system became active March 22, 1979.

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

No, the proposed project will not result in any modification of or effects to individual features of an irrigation system.

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

Los Coches Rancho is listed on the National Register of Historic Places and falls within City boundaries. Mission Soledad and the Mission Nuestra Senora de la Soledad Historic District are located in an unincorporated part of Soledad.

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

No, there are no known archeological sites in the proposed project area.

- Will the proposed project have a disproportionate and adverse effect on any communities with environmental justice concerns?

No, the proposed project will not have a disproportionately high and adverse effect on low income or minority populations. It is anticipated that AMI technology and the Customer App will allow customers to lower their water bills through real-time monitoring and decreased usage.

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

No, the proposed project will not have any impact on Tribal lands.

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

No, the proposed project will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area.

Budget Narrative

Funding Plan and Letters of Commitment

The City plans to utilize their local Water Enterprise Fund for their 50% project cost share. Funds will be available when the project is ready for implementation.

Table 7 Total Project Cost by Source

SOURCE	AMOUNT
Costs to be reimbursed with the requested Federal funding	$1,402,531
Costs to be paid by the applicant	$1,402,532
Value of third-party contributions	None
TOTAL PROJECT COST	$2,805,063

Table 8 Summary of Non-Federal and Federal Funding Sources

FUNDING SOURCES	AMOUNT
Non-Federal Entities	
City of Soledad Water Enterprise Fund	$1,402,532
Non-Federal Subtotal	**$1,402,532**
Federal Entities	
Bureau of Reclamation Grant for this proposal	$1,402,531
Federal Subtotal	**$1,402,531**

TOTAL	$2,805,063

Budget Proposal

Table 9 Budget

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	TOTAL COST
	$/Unit	Quantity		
Salaries and Wages				
Public Works Director	$79.96	10	Hour	$800
Public Works Manager	$61.13	200	Hour	$12,226
Assistant to the City Manager	$59.71	30	Hour	$1,791
Senior Water System Operator	$42.12	700	Hour	$29,484
Water System Operator	$39.97	3500	Hour	$139,895
Customer Service Utility Billing Technician	$29.83	900	Hour	$26,847
CATEGORY TOTAL				$211,043
Fringe Benefits				
Public Works Director	$19.99	10	Hour	$200
Public Works Manager	$15.28	200	Hour	$3,056
Assistant to the City Manager	$14.93	30	Hour	$448
Senior Water System Operator	$10.53	700	Hour	$7,371
Water System Operator	$9.99	3500	Hour	$34,965
Customer Service Utility Billing Technician	$7.46	900	Hour	$6,714
CATEGORY TOTAL				$52,754
Equipment				
5/8" X 3/4" Meter	$357.00	2803	EA	$1,000,671
3/4" Meter	$371.00	10	EA	$3,710
1" Meter	$435.00	526	EA	$228,810
1-1/2" Meter	$871.00	43	EA	$37,453
2" Meter	$1,035.00	77	EA	$79,695
3" Meter	$2,893.00	32	EA	$92,576
4" Meter	$3,861.00	5	EA	$19,305
6" Meter	$6,454.00	3	EA	$19,362
8" Meter	$9,966.00	1	EA	$9,966
CATEGORY SUBTOTAL				$1,491,548
Taxes				$137,968
CATEGORY TOTAL				$1,629,516
Contractual/Construction				

Support for Installation of AMI System	$80.00	1200	Hour	$96,000
Network hardware & Installation	$200,000.00	1	Each	$200,000
Software and system integration	$600,000.00	1	Each	$600,000
Environmental & Regulatory Compliance	$250.00	15	Hour	$3,750
CATEGORY TOTAL				$899,750
Third-Party Contributions				
None				$0
Other				
Develop Implementation Plan, bid documents and support installation	75	160	Hour	$12,000
CATEGORY TOTAL				$12,000
Total Direct Costs				
Indirect Costs				
N/A				
Total Estimated Project Costs				
PROJECT TOTAL				**$2,805,063**

Budget Narrative

The primary costs attributed to the project will come from the equipment, which is about $1.6 million. The City will order the equipment based on the needs of their water system and the customers. The brand that is reflected in this estimate is Neptune meters, but this is subject to change depending on availability and product offerings at the time of procurement.

In order to save money, the City is opting to rely mostly on their in-house staff to install the meters and address the customer service needs associated with the installations. This work will be another significant cost to the City and is reflected in their cost share for the overall project. The estimated amount for both the hourly rates and fringe benefits comes to $264k.

Even though the City would like to have as much of the work completed internally as possible, they recognize that the technological upgrade from non-AMI meters is a significant undertaking that will require the support of skilled contracted workers. The estimate the City has come up with includes technical support for the installation as well as the programming that will need to take place in order to integrate the new components and get the appropriate software programs up and running. The other phase of this project is setting up the customer service portal, which will function as an application that will be attached to each meter for use by the water users. The total technical support and programming costs are estimated to be about $900k.

Performance Measures

The following metrics will be used by the City of Soledad to measure performance against the project goals after implementation.

Performance Measure No. 1: Improved Tracking of Water Use through the System

- The current average usage by customers may not reflect actual use with a high amount of accuracy. After the new AMI technology is in place and the City is able to track usage with near 100 percent accuracy, this data will be used to improve system management and conservation efforts.
- Data from all customer meters before and after implementation of the smart meter technology will help to complete the analysis of how well the new meters are functioning as a water-saving and tracking tool for both the City and their customers.
- Water loss volumes are reported year-to-year. By comparing previous years' data to data after implementation, the City will be able to quantify the difference in unmetered water lost in previous years to an anticipated significant reduction in unmetered loss post-implementation.
- Over time, the amount of water consumed will decrease across the system. These reductions will be related to a decrease in customers' actual usage and a more robust ability to respond to leaks in the system. The values can be compared pre- and post-implementation to quantify the performance of the new meters.

Performance Measure No. 2: An Overall Reduction in Energy Use and Greenhouse Gas

- The City anticipates an overall reduction in system energy use to be commensurate with the actual reduction in the pumping of groundwater. For each acre-foot the City saves with AMI meters, there is an equivalent 741.83 kWh reduction energy consumption.
- The amount of driving that the City will require of its technicians will also reduce proportionally with the elimination of driving for monthly meter reading purposes. This value will be tracked in the monthly and yearly budget as "fuel expenses."

Performance Measure No. 3: Improved Conservation and Water Management

- The City is a member of several agencies where water consumption data is a critical factor in monitoring and reporting their specific performance in meeting measurable goals. Some examples include the safe yield for groundwater pumping under SGMA and the need to achieve the statewide GCPD of 117 gallons. A more accurate and reliable metering system will provide the City with the ability to track and analyze these metrics in meaningful and collaborative ways on the regional and state levels.

Section 2: Project Budget

Funding Plan and Letters of Commitment

The City plans to their local Water Enterprise Fund for their 50 percent project cost share. Funds will be available when the project is ready for implementation.

Table 1 Total Costs by Source

SOURCE	AMOUNT
Costs to be reimbursed with the requested Federal funding	$2,202,389
Costs to be paid by the applicant	$2,202,389
Value of third-party contributions	None
TOTAL PROJECT COST	$4,404,778

Table 2 Funding Sources

FUNDING SOURCES	AMOUNT
Non-Federal Entities	
City of Soledad Water Enterprise Fund	$2,202,389
Non-Federal Subtotal	$2,202,389
REQUESTED RECLAMATION FUNDING	$2,202,389

Budget Proposal

Table 3 Budget

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	TOTAL COST
	$/Unit	Quantity		
Salaries and Wages				
Public Works Director	$79.96	10	Hour	$800
Public Works Manager	$61.13	300	Hour	$18,339
Assistant to the City Manager	$59.71	30	Hour	$1,791
Senior Water System Operator	$42.12	1300	Hour	$54,756
Water System Operator	$39.97	6500	Hour	$259,805
Customer Service Utility Billing Technician	$29.83	1600	Hour	$47,728
CATEGORY TOTAL				$383,219
Fringe Benefits				
Public Works Director	$19.99	10	Hour	$200
Public Works Manager	$15.28	300	Hour	$4,585
Assistant to the City Manager	$14.93	30	Hour	$448

Senior Water System Operator	$10.53	1300	Hour	$13,689
Water System Operator	$9.99	6500	Hour	$64,951
Customer Service Utility Billing Technician	$7.46	1600	Hour	$11,932
CATEGORY TOTAL				$95,805
Equipment				
5/8" X 3/4" Meter	$357.00	5200	EA	$1,856,400
3/4" Meter	$371.00	19	EA	$7,049
1" Meter	$435.00	975	EA	$424,125
1-1/2" Meter	$871.00	79	EA	$68,809
2" Meter	$1,035.00	143	EA	$148,005
3" Meter	$2,893.00	60	EA	$173,580
4" Meter	$3,861.00	10	EA	$38,610
6" Meter	$6,454.00	5	EA	$32,270
8" Meter	$9,966.00	1	EA	$9,966
CATEGORY SUBTOTAL				$2,758,814
Taxes				$255,190
CATEGORY TOTAL				$3,014,004
Contractual/Construction				
Support for Installation of AMI System	$80.00	1200	Hour	$96,000
Network hardware & Installation	$200,000.00	1	Each	$200,000
Software and system integration	$600,000.00	1	Each	$600,000
Environmental & Regulatory Compliance	$250.00	15	Hour	$3,750
CATEGORY TOTAL				$899,750
Third-Party Contributions				
None				$0
Other				
Develop Implementation Plan, bid documents and support installation	75	160	Hour	$12,000
CATEGORY TOTAL				$12,000
Total Direct Costs				
Indirect Costs				
N/A				
Total Estimated Project Costs				
PROJECT TOTAL				$4,404,778

Budget Narrative

The primary costs attributed to the project will come from the equipment, which is about $3 million. The City will order the equipment based on the needs of their water system and the customers. The brand that is reflected in this estimate are the Neptune meters, but this is subject to change depending on availability and product offerings at the time of procurement.
In order to save money, the City is opting to rely mostly on their in-house staff to install the meters and address the customer service needs associated with the installations. This work will be another significant cost to the City and is reflected in their cost share for the overall project. The estimated amount for both the hourly rates and fringe benefits comes to $480k.
Even though the City would like to have as much of the work completed internally as possible, they recognize that the technological upgrade from non-AMI meters is a significant undertaking that will require the support of skilled contracted workers. The estimate the City has come up with includes technical support for the installation as well as the programming that will need to take place in order to integrate the new components and get the appropriate software programs up and running. The other phase of this project is setting up the customer service portal, which will function as an application that will be attached to each meter for use by the water users. The total technical support and programming costs are estimated to be about $900k.

Section 3: Environmental And Cultural Resources Compliance

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

The proposed AMI project will have minimal, if any, impact on the surrounding environment, including ground-disturbing activities. Replacement of the City's meters will occur within existing meter vaults and meter receiving assemblies and will not disturb the surrounding ground. Some disturbances will occur as needed for electrical conduit installation and other related activities, however, any ground that must be broken will be within existing streets or other manmade surfaces and will not have any known or significant impact on air, land, water, or wildlife habitat.

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

No, there are no known species listed or proposed to be listed as a Federal threatened or endangered species within the project area. There is no designated critical habitat in the project area. The special status species described in the Other Project Benefits Section reside within the Salinas River and are not expected to be affected by any activities associated with the proposed project. Conservation of groundwater will only help to enhance surface flow of the Salinas River.

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.

Although the Salinas River does flow through City boundaries where the project will occur, there are no anticipated impacts due to the nature of the project. Meter replacement will occur at existing infrastructure in a built environment.

When was the water delivery system constructed?

Soledad's water system became active March 22, 1979.

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

No, the proposed project will not result in any modification of or effects to individual features of an irrigation system.

Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places?

Los Coches Rancho is listed on the National Register of Historic Places and falls within City boundaries. Mission Soledad and the Mission Nuestra Senora de la Soledad Historic District are located in an unincorporated part of Soledad.

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

No, there are no known archeological sites in the proposed project area.

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

No, the proposed project will not have a disproportionately high and adverse effect on low income or minority populations. It is anticipated that AMI technology and the Customer App will allow customers to lower their water bills through real-time monitoring and decreased usage.

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

No, the proposed project will not have any impact on Tribal lands.

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

No, the proposed project will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area.

Section 4: Required Permits and Approvals

No permits or approvals are anticipated to be required in order to implement the project. All equipment will be attached to previously installed water meters and infrastructure. If any approvals become necessary, they will be handled by City of Soledad staff in an efficient and timely manner.

Section 5: Letters of Support

All statements of support from interested stakeholders are included in Appendix B.

1. Water Awareness Committee
2. Greater Monterey County Integrated Regional Water Management Program

Section 6: Official Resolution

Due to the timing of City Council meetings, the City is in the process of passing an official resolution authorizing this grant application. The City of Soledad City Council will pass a resolution prior to award announcements. Please the note the following:

- The resolution will verify the District's legal authority to enter into an agreement with the Bureau of Reclamation;
- The City Council has reviewed and supports submittal of this application;
- The capability of the City to provide the amount of funding specified in the funding plan; and
- The City will work cooperatively with the Bureau of Reclamation to meet established deadlines for entering into a cooperative agreement.

Appendices

Appendix A – Water Loss Reports
Appendix B – Letters of Support

Appendix B - Letters of Support

GREATER MONTEREY COUNTY

I R W M P

Big Sur Land Trust ◆ California State University Monterey Bay ◆ California Water Service Company ◆ Castroville Community Services District ◆ Central Coast Wetlands Group ◆ City of Salinas ◆ City of Soledad ◆ Elkhorn Slough National Estuarine Research Reserve ◆ Environmental Justice Coalition for Water ◆ Marina Coast Water District ◆ Monterey Bay National Marine Sanctuary ◆ Monterey One Water ◆ Monterey County Agricultural Commissioner's Office ◆ Monterey County Housing and Community Development Department ◆ Monterey County Water Resources Agency ◆ Resource Conservation District of Monterey County ◆ Rural Community Assistance Corporation ◆ Salinas Valley Basin Groundwater Sustainability Agency ◆ San Jerardo Cooperative, Inc.

February 16, 2024

US Bureau of Reclamation
Financial Assistance Operations Section
P.O. Box 25007, MS 84-27133
Denver, CO 80225

Re: Support for City of Soledad WaterSMART Water and Energy Efficiency Grant Application FY 2024: Soledad Smart Metering and Water Use Efficiency Project

Dear Sir or Madam,

On behalf of the Greater Monterey County Integrated Regional Water Management (IRWM) Region, it is my pleasure to submit this letter of support for the City of Soledad's grant application for WaterSMART Water and Energy Efficiency Grants for Fiscal Year 2024, to implement the Soledad Smart Metering and Water Use Efficiency Project.

The City of Soledad is projected to experience significant growth over the next 25 years. Projected climate change impacts, including more extreme and prolonged droughts, are expected further exacerbate the region's water supply challenges. In response, the City of Soledad is taking steps to improve water supply reliability through demand management measures. The proposed project will install ultrasonic AMI technology meters, allowing households, businesses, and commercial customers to receive real-time, high-resolution AMI data and advanced analytics. The new meters will improve current water management systems and provide a significant water savings, which will increase water supply availability. Although the City of Soledad has taken steps to replace outdated and inefficient water meters, there are still over 5,000 connections with outdated technology dating back to 2003. The new smart meters will allow customers to immediately address issues such as water leakage or overuse, thereby reducing water waste and improving water efficiency.

The City of Soledad is striving to make conservation a way of life. This project will allow the City to effectively monitor water consumption using real-time data. The City is ready to immediately implement this project should they be selected to receive a grant.

Thank you for your consideration of this important project. We urge the Bureau of Reclamation to award grant funding to the City of Soledad to help ensure reliable and sustainable water supplies.

Sincerely,

Susan Robinson

Susan Robinson, Program Director
Greater Monterey County Integrated Regional Water Management Program
srobinsongs@frontier.com

Water Awareness Committee

OF MONTEREY COUNTY, INC.

P. O. Box 3254
Salinas, CA 93912

February 20, 2024

Department of the Interior
Bureau of Reclamation
Financial Assistance Operations Section
P. O. Box 25007, MS 84-27133
Denver, CO 80225

TO WHOM IT MAY CONCERN:

This letter serves to express our strong support for the City of Soledad's grant application for the Department of Interior, Bureau of Reclamation Water SMART Water and Efficiency Grants for Fiscal Year 2024 program to implement the Soledad Smart Metering and Water Use Efficiency Project.

The City of Soledad is in Monterey County, California. Soledad is experiencing growth and it is projected to expand significantly over the next 25 years. As California stives to contend with periodic droughts, local communities such as Soledad must act to be prepared for this reality. Residents of Soledad are being asked to reduce their water use to meet these emergencies.

This proposed installation of smart meters will allow households, businesses, and commercial customers to receive real-time, high resolution AMI data and advanced analytics. This project will install ultrasonic AMI technology meters. The new meters will improve current water management systems and provide a significant water savings which increases water supply availability. Although the City of Soledad has taken steps to replace outdated and inefficient water meters, there are still over 5,000 connections with outdated technology dating back to 2003. The new smart meters will allow customers to immediately address issues such as water leakage or overuse, thereby reducing water waste and improving water efficiency.

The City of Soledad is striving to make conservation a way of like and this project will allow the city to effectively monitor water consumption using real-time data. The city is ready to immediately implement this project should they be selected to receive a grant. I respectfully ask for your kind consideration of this grant application.

Sincerely,

Richard Youngblood

Richard Youngblood

President

Water Awareness Committee

Of Monterey County, Inc.