# Westlands Advanced Metering Infrastructure Project - Surface Water Meters

**Request for Funding Opportunity No. R24AS00052**

**U.S. Department of the Interior, Bureau of Reclamation, Water Resources and Planning Office**

**WaterSMART – Water and Energy Efficiency Grants for Fiscal Year (FY) 2024 and FY 2025**

Westlands Water District

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# Executive Summary

*The executive summary should include:*

- *The date, applicant name, city, county, and state.*
- *Please indicate whether you are a Category A applicant or Category B applicant.*

*Applicant*

Westlands Water District (Westlands or District) is pleased to submit this application for the *WaterSMART – Water and Energy Efficiency Grants for Fiscal Year (FY) 2024 and FY 2025 Notice of Funding Opportunity (NOFO) No. R24AS00052,* under the Funding Group II (up to $2,000,000 in Federal funds for larger on-the-ground projects that may take up to three years to complete), on 22 February 2024, to assist in funding Westlands Advanced Metering Infrastructure Project - Surface Water Meters (Project). Westlands is a water district that was formed under California Water District Law in 1952 upon petition of landowners located within the District's proposed boundaries and therefore is a Category A applicant and meets the applicant eligibility requirement. Westlands is the largest agricultural water district in the United States, serving more than 600,000 acres of prime farmland located in western Fresno and Kings Counties, including the City of Huron, in California.

*Applicant and Service Area Background*

Formed in 1952, Westlands provides water to local farmers and conveys water to rural communities (population of approximately 15,000 people) on the west side of Fresno and Kings Counties, an area spanning approximately 614,700 acres, which includes approximately 357,000 irrigated acres. Westlands is a major agricultural production area of California and contains some of the richest farmland in the nation producing over 50 different crops. The major crops grown in the District are almonds, tomatoes, pistachios, and grapes. More than $2 billion in crops are grown in Westlands every year, generating more than $4.7 billion in farm-related economic activity each year, supporting over 35,000 jobs in the regional economy and feeding families in the San Joaquin Valley, across California and around the world. Farmers in Westlands produce approximately 3.5% of the country's fruit and nut crops and 5.4% of the country's vegetables and melons. Water supply reliability is critical for Westlands, its growers and the nearby rural communities.

- *A one-paragraph project summary that provides the location of the project, a brief description of the work that will be carried out, any partners involved, expected benefits, and how those benefits relate to the water management issues you plan to address.*

*Project Summary*

The Project will take place throughout Westlands water distribution system, which consists of 1,100 miles of distribution pipeline that delivers water to approximately 700 family-owned farms and to the small water systems in the communities of El Porvenir (also known as Three Rocks), Five Points, Cantua Creek, Turk, Calfax, O'Neil Farms, and the Naval Air Station Lemoore (NASL). Westlands continually invests in and updates this sophisticated system, which measures every drop of water and minimizes losses caused by seepage and evaporation. The Project entails

retrofitting 1,603 manually read surface water meters with advanced automated metering devices to incorporate into Westlands' regional advanced metering infrastructure (AMI) system. With the implementation of digital meters paired with AMI nodes, the Project would improve the following water management activities: (1) Increase data collection frequency, while reducing labor time and reducing mileage on District vehicles; (2) Know in real time if meters experience an issue with meter inaccuracy, that can contribute to overirrigation, causing the over application of water and alert field personnel immediately; (3) Dramatically improve accuracy at the lower flow rates commonly used for blending in years when the District has very little allocation; and (4) Be able to reconcile meter usage with headworks usage to identify laterals that could potentially have leaks.

The Project would increase water management efficiency and produce sustainable water savings offering the following benefits: **9,600 acre-feet per year (AFY)** of water savings and **20,223 kilowatt-hours per year (kWh/year)** of reduced energy consumption with associated greenhouse gas emissions reductions.

- *Length of time and estimated completion date for the proposed project (month/year).*

*Length of Project*

The length of the Project is expected to be 34 months, with an expected Project start date of September 2024 and an estimated completion date of June 2027.

- *Whether or not the proposed project is located on a Federal facility*

*Federal Facilities and Federal Lands*

Reclamation is Westlands' water provider. Westlands' full contract entitlement from Reclamation is approximately 1.196 million AF, but is subject to reductions depending upon hydrology and environmental restrictions. The District contains Reclamation facilities, including the San Luis Canal, Coalinga Canal, Pleasant Valley Pumping Plant the District's distribution system.

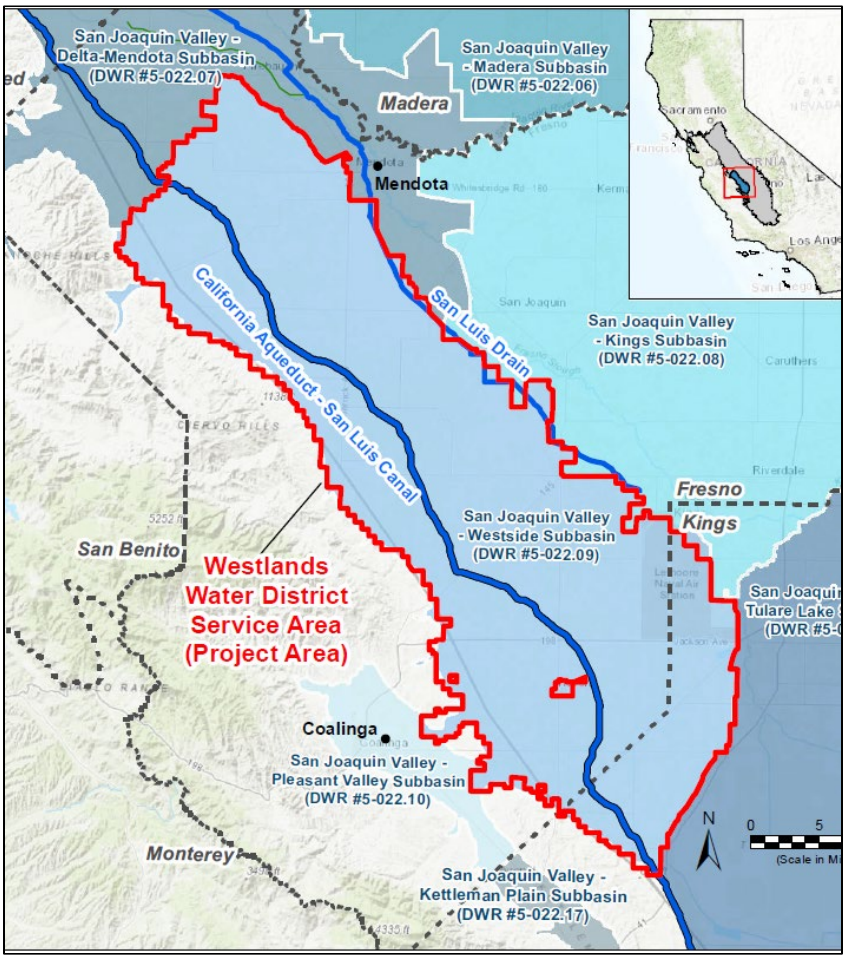
## Project Location

*Provide specific information on the proposed project location or project area, including a map showing the geographic location.*

The Project area includes the entire District's service area in Fresno and Kings County of California, including the City of Huron, in the Westside Subbasin of the San Joaquin Valley Groundwater Basin (California Department of Water Resources [DWR] Basin No. 5-022.09; Subbasin) (**Figure 1**). The Subbasin has been identified by DWR as a critically overdrafted subbasin with groundwater pumping being one of the factors that contributes to overdraft and declining water levels.

The Project's proposed instrumentation upgrades, retrofitting 1,603 meters, will take place along the 1,100 miles of the Westlands water distribution system (**Figure 3**), starting at approximately 36.79517°N, 120.477907°W (northernmost point of the distribution system), ending at 36.008794°N, 119.984973°W (southernmost point of the distribution system).

***Figure 1. General Overview of Westlands***



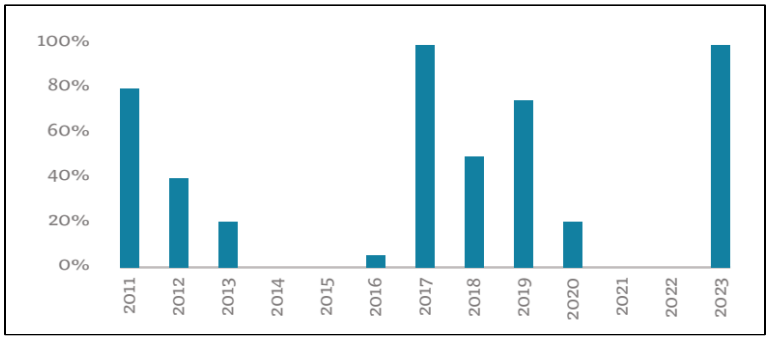
## Project Description

*Provide a more comprehensive description of the technical aspects of your project, including the work to be accomplished and the approach to complete the work.*

- *This description should provide detailed information about the project including materials and equipment and the work to be conducted to complete the project. Address any aspects of the project that reviewers may need additional information to understand.*

**Background Information:** Formed in 1952, Westlands provides water to local farmers and conveys water to rural communities (population of approximately 15,000 people) on the west side of Fresno and Kings Counties, an area spanning approximately 614,700 acres, which includes approximately 357,000 irrigated acres. Westlands delivers water throughout the entire District's boundary to approximately 700 family-owned farms and to the small water systems in the communities of El Porvenir (also known as Three Rocks), Five Points, Cantua Creek, Turk, Calfax, O'Neil Farms, and the Naval Air Station Lemoore (NASL). Westlands is a major agricultural production area of California and contains some of the richest farmland in the nation producing over 50 different crops. The major crops grown in the District are almonds, tomatoes, pistachios, and grapes. More than $2 billion in crops are grown in Westlands every year, generating more than $4.7 billion in farm-related economic activity each year, supporting over 35,000 jobs in the regional economy and feeding families in the San Joaquin Valley, across California and around the world. Farmers in Westlands produce approximately 3.5% of the country's fruit and nut crops and 5.4% of the country's vegetables and melons. Water supply reliability is critical for Westlands, its growers and the nearby rural communities.

***Figure 2. Westlands Surface Water Allocation % by Year***

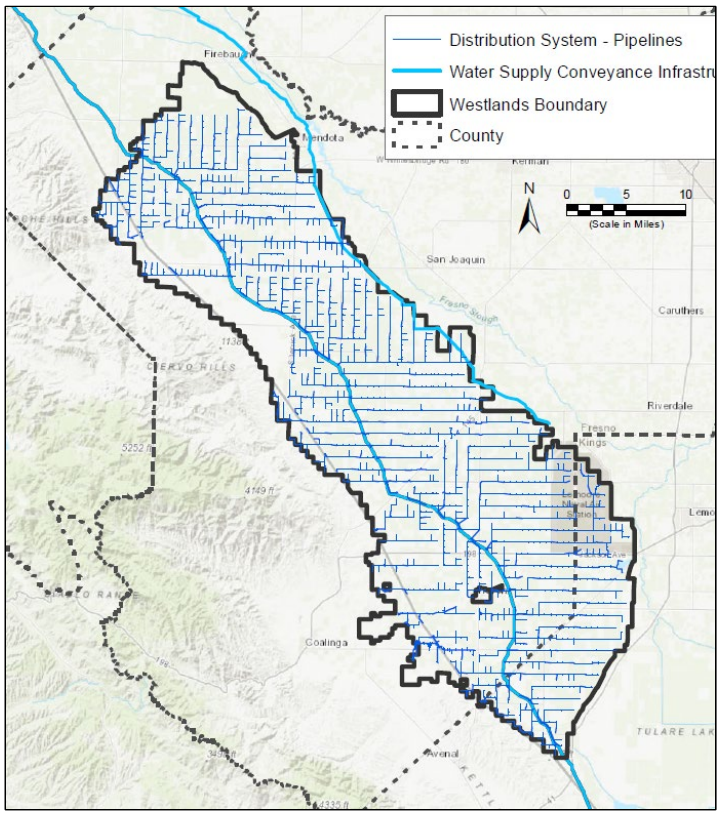



**Water Rights & Source of Water Supply:** The District is a Central Valley Project (CVP) contractor with water service contracts for 1,196,948 acre feet (AF). Westlands receives water from the San Luis Unit of the CVP, which is operated by the United States Bureau of Reclamation (USBR). Major conveyance CVP facilities used for delivering water to the District include the Delta Mendota Canal (DMC) and San Luis Canal (SLC). Water is delivered directly to lands in the San Luis Unit or is stored temporarily in San Luis Reservoir (SLR) for later delivery. As shown in **Figure 2,** Westlands CVP surface water allocations vary drastically year to year, so in addition to the CVP supply landowners in the District rely on groundwater, water transfers, and temporary water acquisitions to supplement the CVP supply. Furthermore, to help manage the extreme swings in water allocations from year to year, farmers in Westlands implement robust water efficiency measures, utilizing innovative water

conservation technology, and change their crops or fallow fields to mitigate the impacts of low water allocation years.

**Project Details:** Westlands is among the few, if not the only, agricultural water agencies in the world that distributes water through an entirely enclosed system. Westlands' water distribution system is comprised of approximately 1,100 miles of buried pipeline and is outfitted with over 2,400 water meters. Westlands continually invests in and updates this sophisticated system, which measures every drop of water and minimizes losses caused by seepage and evaporation. In 2021 Westlands began the first phase of implementing Westlands Advanced Metering Infrastructure Project, which included installing approximately 760 groundwater meters in the District with advanced automated metering devices and establishing a regional network of twenty-one base stations, giving the District the ability to receive data from any proposed meters with a strong and stable connection.

***Figure 3. Project Location***




The Project is the second phase of Westlands Advanced Metering Infrastructure Project and entails retrofitting 1,603 manually read surface water meters with advanced automated metering devices to incorporate into Westlands' regional advanced metering infrastructure (AMI) system throughout Westlands' water distribution system (**Figure 3**). The planned upgrades include the following: Replacing 150 mechanical meters with advanced automated meters, installing 1,453 digital conversion kits to convert existing mechanical meters into digital meters with the necessary output to pair with the AMI nodes, and incorporating the 1,603 meters into the Westlands regional AMI system.

The Project will include three main Tasks as described below.

- *Task 1 Project Management & Grant Administration:* Perform administrative responsibilities associated with the Project including but not limited to schedule management, budget tracking and management, coordinating with relevant agencies regarding Project execution, and managing consultants/contractors. Administer and track any contracts with consultants or other agencies and retain consultants (as needed) to implement the Project. Task 1 will also include required grant administration activities

including but not limited to executing the grant agreement and any amendments thereto, administering grant funds, preparing invoices and appropriate backup documentation, and any other grant-required items.

- *Task 2 Environmental/Permitting:* Westlands will work with the appropriate consultants to prepare any necessary environmental documentation (e.g., California Environmental Quality Act [CEQA] documentation) and prepare applications for and obtain any required permit(s).
- *Task 3 Construction/Installation:* Westlands will purchase all necessary equipment (meters, conversion kits, install 150 advanced automated meters, install 1,453 digital conversion kits, and incorporate the 1,603 meters into the Westlands regional AMI system.

**Project Needs:** Westlands conducted a Mechanical/Digital Meter Comparison Study (**Appendix A**) on four types of Water Specialties meters to ensure the most efficient and best suited meters are selected for the Project and included in the development of the budget as part of this proposal. As described in the comparison study, Westlands services and calibrates approximately 500 of the 2,429 active distribution meters every year. Many of the current distribution meters are mechanical meters and at times may experience gross under reporting or complete meter failure due to worn out mechanical parts. The most common mechanical issues are stripped or cracked gear, broken or frozen bearing, and broken drive shaft or drive cable. Inaccuracy is not always noticed immediately due to the meters being read manually only twice a month. After the meter readings are collected, the readings are then sent to the District's Customer Accounting Department and compared with the water orders. If the usage seems moderately/highly inaccurate then field personnel are notified to check the meter. This can take up to a couple of weeks to process, all the while the meter is potentially reporting inaccurately or worst-case scenario, completely failed. With the implementation of digital meters paired with AMI nodes the District would:

1. Increase data collection frequency, while reducing labor time and reducing mileage on District vehicles.
2. Know in real time if meters experience an issue with meter inaccuracy, that can contribute to overirrigation, causing the over application of water and alert field personnel immediately.
3. Dramatically improve accuracy at the lower flow rates commonly used for blending in years when the District has very little allocation.
4. Be able to reconcile meter usage with headworks usage to identify laterals that could potentially have leaks.

Overall, the Project will increase efficiency in servicing damaged meters, help identify infrastructure failures sooner, increase water management efficiency, and provide an overall water savings.

## Evaluation Criteria

*Evaluation Criterion A—Quantifiable Water Savings (25 Points)*

*Up to **25 points** may be awarded for this criterion. This criterion prioritizes projects that will conserve water and improve water use efficiency, supporting the goals of E.O. 14008. Points will be allocated based on the quantifiable water savings expected as a result of the project. Points will be allocated to give greater consideration to projects that are expected to result in more significant 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.* Please include a specific quantifiable water savings estimate; do not include a range of potential water savings.

The Project will not only conserve water but will also improve water use efficiency by more accurately reporting and tracking Westlands' water deliveries. Water supply saving estimates have been determined using the historical average number of meter issues reported every year, the average length of time that the faulty meters are recording data inaccurately or not at all, the average amount of water delivered through the faulty meters during the downtime and the average inaccuracy of the current mechanical meters. It is estimated that the amount of water expected to be conserved as a direct result of the Project is approximately **9,600 acre-feet per year (AFY).**

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:*

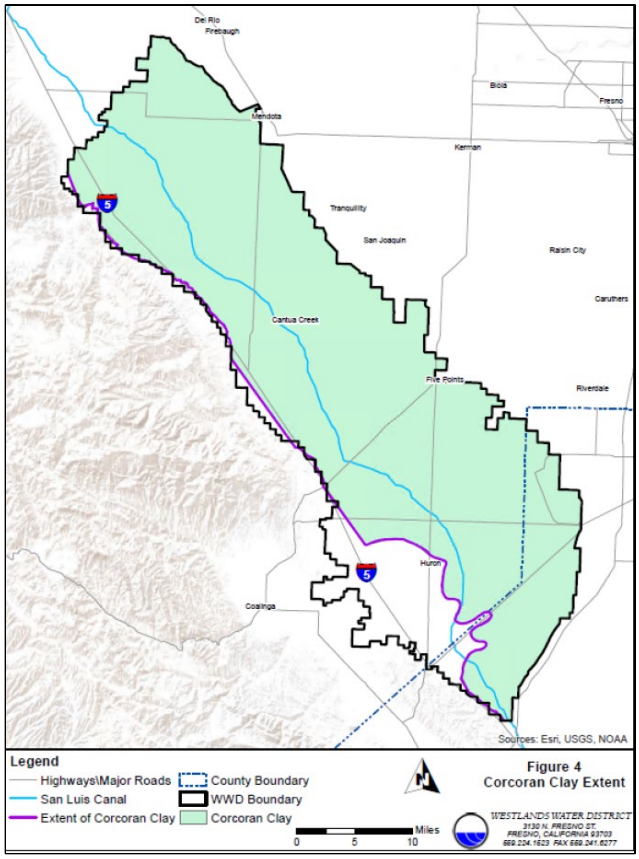
- *Explain where current losses are going (e.g., back to the stream, spilled at the end of the ditch, seeping into the ground)?*

Current losses are due to inaccurate meter readings and leaks within the meters due to worn-out mechanical parts that can lead to over application of water. Furthermore, with the larger inaccuracy of the mechanical meters it is harder to identify possible leaks within the District's distribution system. Details regarding current water losses can be found in the following sections and details about the inaccuracy of the different types of meters can be found in Westlands Mechanical/Digital Meter Comparison study found in **Appendix A**.

- *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?*

If water losses are due to a meter leak, then the water losses currently seeping into the aquifers below. As shown in **Figure 4**, the Corcoran Clay is present in most of the District. The Corcoran Clay restricts percolation into the Lower Aquifer, where 85% of the groundwater is extracted by water users within the District.

***Figure 4. Corcoran Clay Extent***




*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?*

As described above, the current losses percolate into the Upper Aquifer and Lower Aquifer depending on the location of the leak. Only fifteen percent of the District's groundwater pumping occurs from the Upper Aquifer (**Figure 4**). Therefore, there are no known benefits from the associated water loss.

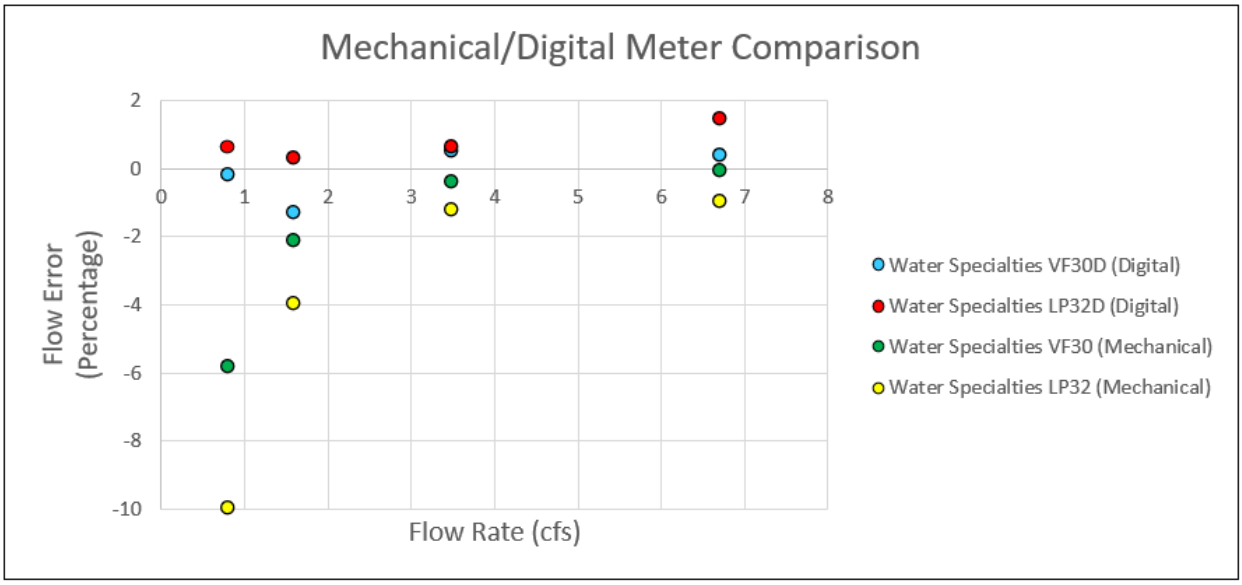
3) ***Describe the support/documentation of estimated water savings.*** *Please provide sufficient detail supporting how the estimate was determined, including all supporting calculations.*

The water savings that result from the proposed Project would decrease the amount of water lost from inaccurate meters that result in over deliveries, overirrigation and potentially overpayment. The Projects enables the District to efficiently deliver water which results in an estimated water savings of **9,600 AFY**. Based on studies of other AMI systems, advanced metering infrastructure implementation reduces the total amount of delivered and applied water which results in efficient water management.

The District conducted a Mechanical/Digital Meter Comparison Study (**Appendix A**), that summarizes the current difficulties the District faces with the mechanical meters and determines which type of meter (mechanical and digital meters) produces the most favorable accuracy results for the District's water distribution system and needs. Currently Westlands personnel responds to an average of 500 metering issues every year. With the meters being read manually only twice a month and the time that it takes to process, analyze and identify a problem based on the manual measurements, it is assumed that the meter can easily undergo 14 days of inaccurate readings/deliveries. Based on the District's water distribution system and meter specifications, the average surface water meter has a capacity of 9 cubic feet per second (cfs). Based on these assumptions an average total water delivered per meter during the 14-day period of inaccurate readings/deliveries is approximately 249 AF. With 500 metering issues a year, the District delivers an average of 124,740 AFY with inaccurate readings/deliveries. Based on the meter comparison (**Figure 5**) the mechanical meters (current meters within the District) have an average inaccuracy

of 7.7%. It is estimated that the District could be potentially overdelivering 9,600 AFY during the times of inaccurate readings/deliveries. Digital meters have less potential for meter inaccuracies and failure due to the elimination of almost all mechanical parts. Retrofitting the District's currently mechanical meters to digital meters will result in eliminating the over deliveries, specifically during the long down time to address the current meters' issues, which will potentially result in a **9,600 AFY water savings**.

***Figure 5. Mechanical/Digital Meter Comparison***




***Please address the following questions according to the type of infrastructure improvement you are proposing for funding.***

(1) ***Irrigation Flow Measurement:*** *Irrigation flow measurement improvements can provide water savings when improved measurement accuracy results in reduced spills and over- deliveries to irrigators. Applicants proposing municipal metering projects should address:*

a. *How have average annual water savings estimates been determined? Please provide all relevant calculations, assumptions, and supporting data.*

As described above, the annual water savings estimates are calculated as being 7.7% of the total amount of water delivered through the faulty meters (124,740 AFY) during the periods of inaccurate readings/deliveries. The 7.7% is based on the average inaccuracy of the mechanical meters currently installed throughout the District's water distribution system.

b. *Have current operational losses been determined? If water savings are based on a reduction of spills, please provide support for the amount of water currently being lost to spills.*

Current operational losses are due to inaccurate meter readings that can lead to over deliveries and overapplication of water, as described in detail the bullet points above. Mechanical meters that may be damaged, inoperable, or broken can impact reading accuracy by greater than ±7.7 percent.

In addition to replacing the mechanical meters with digital meters with better accuracy, the meters will be incorporated into Westlands regional AMI network. Based on the AMI studies, like the Evaluation of the East Bay Municipal Utility District's Pilot of WaterSmart Home Water Reports, the AMI system results in water savings that result from improved water use management. After looking at the different AMI studies that have been implemented, there are a variety of benefits the AMI systems produce. Having all meters incorporated into the AMI network will benefit customers by providing the customer access to their respective meter databases. The District's water user can actively improve their water management efficiency. The water users would also be able to notice if there is a discrepancy from the usual amount of water they use. If they notice it is much higher than the owner expected, the user knows there must be something wrong. In addition, the AMI system can detect early leaks and send notifications to the customer. The early leak detection system saves time, money, and most importantly, water.

c. *Are flows currently measured at proposed sites and if so, what is the accuracy of existing devices? How has the existing measurement accuracy been established?*

Measurements of flows, accuracies, and supporting documentation, including the District's meter Comparison Study (**Appendix A**), are discussed above in sections (a) and (b).

d. *Provide detailed descriptions of all proposed flow measurement devices, including accuracy and the basis for the accuracy.*

Based on results from the Mechanical/Digital Meter Comparison Study (**Appendix A**) the Water Specialties VF 30D and LP 32D digital meters produced the most favorable accuracy results of ±1%. Furthermore, the digital meters have less potential for meter inaccuracies and failure due to the elimination of almost all mechanical parts and have the necessary output to pair with AMI nodes to connect to the District's regional AMI network. Westlands currently have VF 30 & LP32 mechanical distribution meters installed. These mechanical meters are easily upgraded to digital meters via a Water Specialties digital conversion kit at a fraction of the cost of replacing the entire meter. The Project includes installing 150 Victaulic Meters and 1,453 mechanical to digital conversion kits.

e. *Will annual farm delivery volumes be reduced by more efficient and timely deliveries? If so, how has this reduction been estimated?*

Yes, annual farm delivery volumes will be reduced by more efficient and timely deliveries. As described above it is estimated that the District could be potentially overdelivering 9,600 AFY

during the times of inaccurate readings/deliveries. Digital meters have less potential for meter inaccuracies and failure due to the elimination of almost all mechanical parts. Retrofitting the District's currently mechanical meters to digital meters will result in eliminating the over deliveries, specifically during the long down time to address the current meters' issues, which will potentially result in a 9,600 AFY water savings.

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

The District's water savings will be verified using the AMI Leakage Detection technology. Along with the ability to collect data daily, the AMI technology has the capacity to notify the District of any leaks that are occurring at the meter site. Due to the efficiency of the leakage detection, the meter can be serviced quickly and only a minimal amount of water will be lost. Water savings can be estimated and verified by simulating water user's management of groundwater pumping before and after implementation of the proposed Project. Accurate meter readings and improved water management will result in water savings.

*Evaluation Criterion B—Renewable Energy (20 Points)*

*Up to **20 points** may be awarded based on the extent to which the project increases the use of renewable energy or otherwise results in increased energy efficiency and reduced greenhouse gas emissions.*

*For projects that include constructing or installing renewable energy components, please respond to Subcriterion B.1: Implementing Renewable Energy Projects Related to Water Management and Delivery. If the project does not implement a renewable energy project but will increase energy efficiency, please respond to **Subcriterion B.2. Increasing Energy Efficiency in Water Management.** If the project has separate components that will result in both implementing a renewable energy project and increasing energy efficiency, an applicant may respond to both.*

Subcriterion B.2—Increasing Energy Efficiency in Water Management

*Up to **6 points** may be awarded for projects that address energy demands and reduce greenhouse gas emissions by retrofitting equipment to increase energy efficiency and/or through water conservation improvements that result in reduced pumping or diversions.*

***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.*

The Project's quantifiable energy savings are a result of reduced vehicle travel between meters. The energy savings as a result of the Project is estimated at 20,223 kilowatt-hours per year

(kWh/year) (see calculation below).

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

The Project will help combat impacts of climate change by allowing Westlands to reduce greenhouse gas emissions associated with current operations that involve vehicular travel to each meter at least twice a month to collect manual measurements. The emissions reduction as a result of the Project is estimated to 5.3 metric tons per year of carbon dioxide-equivalent emissions (see calculation below). Furthermore, the Project promotes reduced groundwater pumping which will result in additional reduced energy.

- *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 allow for more efficient use by Westlands of the available surface water supplies, which will save water, reduce the need for groundwater pumping to supplement surface water and the associated energy use, and therefore improve the resiliency of Westlands water supply portfolios. Such water savings and resiliency will allow for continued avoidance of "deficit pumping" by Westlands and customers under most conditions. The water saved is then available for use in other locations or at other times, and to the extent that the water saved meets/offsets a water demand that would otherwise be met by groundwater pumping, the Project improves groundwater conditions by reducing pumping demand.

- *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.*

N/A

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

N/A

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

The District encompasses over 600,000 acres of farmland and District workers will not have to travel up and down the District manually collecting meter readings. Annually, the District field operators drive about 6,000 miles to collect meter readings District-wide. Based off the fuel economy of the vehicle and the frequent stops the vehicle must make, a District vehicle averages

about 10 mpg. That is an average of 600 gallons of gasoline used by District vehicles to manually read the meters in the District. Using the U.S EPA's Greenhouse Gas Equivalences Calculator[1] , an estimated 5.3 metric tons per year of reduced carbon dioxide-equivalent emissions will result from the Project. The EPA additionally specifies a value of 33.705 kWh per gallon of gasoline equivalent[2] , resulting in a savings of **20,223 kWh/year** as a result of reduced vehicle miles driven.

- *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)*

N/A

[1] https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator#results
[2] https://www3.epa.gov/otaq/gvg/learn-more-technology.htm

*Evaluation Criterion C—Other Project Benefits (15 points)*

*Up to **15 points** may be awarded under this criterion. This criterion prioritizes projects that address a specific water and/or energy concern(s), including enhancing drought resilience and sustainability, addressing the current and future impacts of climate change, and providing ecological benefits.*

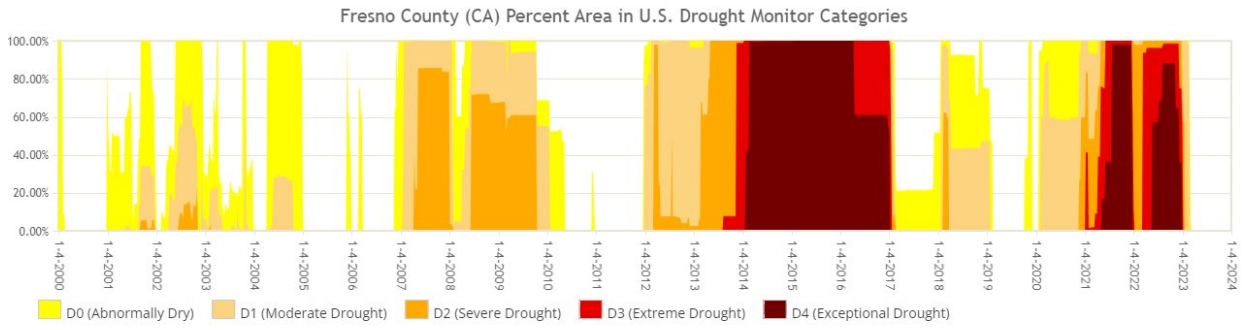
***Resilience and Sustainability Benefits.** Will the project address a specific water and/or energy sustainability concern? Please address the following:*

- *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.*

Reliability of the Westland's water supply is threatened by unpredictable weather, climate change, ever-changing hydrology (drought periods, flooding, etc.), extreme variation in yearly allocations, and regulatory challenges.

Fresno County, where the Project is located, has been faced with significant drought impacts beginning in 1986. As shown in **Figure 6**, according to the U.S. Drought Monitor, the frequency and severity of drought conditions have increased over time, with exceptional drought periods from 2014 to 2017 and more recently in 2021 and 2022. These drought conditions put Westlands water supply reliability at risk and in the past has forced growers to fallow land due to lack of water supplies.

***Figure 6. Percent Area Experiencing Drought in Fresno, County, 2000 to 2023***




Furthermore, the reliability of the Westlands Water District's CVP supply has decreased due the Central Valley Project Improvement Act, Delta Smelt, and Salmon Biological Opinions and drought in recent years. When the District receives a reduced CVP allocation, water users in the area must rely on groundwater pumping or other local water sources to produce their crops. However, groundwater is limited in supply and as previously described the Subbasin is considered a critically overdrafted basin. According to SGMA, critically overdrafted subbasin must reach

sustainability by 2040. To sustainably manage the Subbasin, groundwater levels and storage must be maintained effectively.

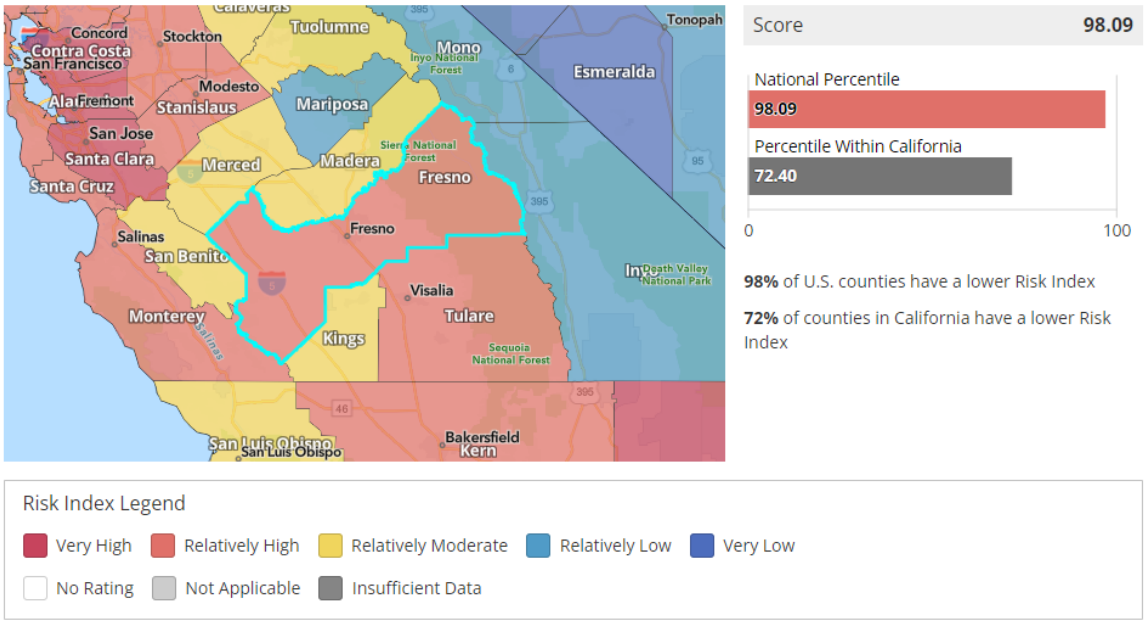
- *Is the project in an area that is experiencing, or recently experienced, drought or water scarcity?*

As seen in **Figure 6**, over the past five years the project area has experienced Exceptional Drought, Extreme Drought, Moderately Drought, and Abnormally Dry conditions. Furthermore, as reported in the Westside Subbasin Groundwater Sustainability Plan Annual Report 2022[3], in Water Year 2022 the total change in groundwater storage decreased by 90,000 AF.

- *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 Project location has been significantly impacted by climate change, as described above, and there are projections of increased severity and duration of future droughts. Fresno County, where the Project is located has a Federal Emergency Management Agency (FEMA) Drought National Risk Index Rating[4] of "Very High" compared to the rest of the United States (**Figure 7**). The Project location has a National Risk Index score of 98.09, meaning 98% of U.S. counties have a lower Risk Index, and falls within the 72 percentile within California, indicating that 72% of counties in California have a lower Risk Index.

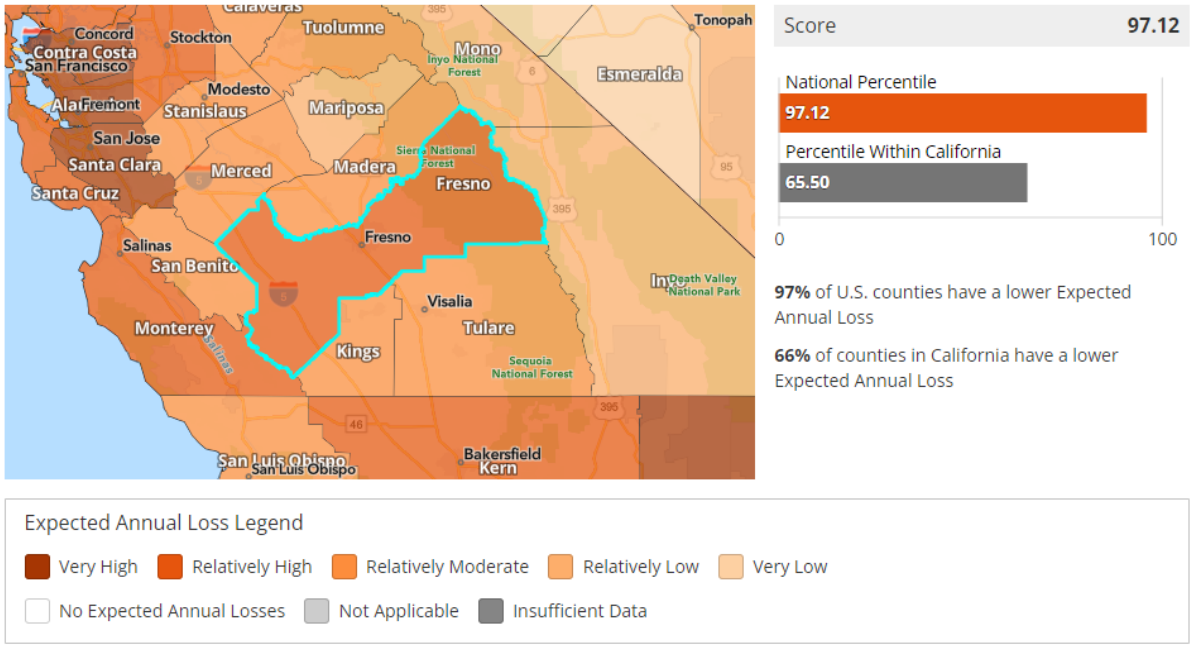
***Figure 7. Risk Index of the Project Area (Fresno County)***




[3] https://sgma.water.ca.gov/portal/gspar/preview/233
[4] Community Report - Fresno County, California | National Risk Index (fema.gov)

The Project location also has and a “Relatively High” Drought Expected Annual Loss with a score of 97.12, representing the expected agricultural loss each year due to droughts compared to the rest of the United States (**Figure 8**). The Project location has a National Expected Annual Loss score of 97.12, meaning over 97% of U.S. counties have a lower Expected Annual Loss, and falls within the 66 percentile within California, indicating that 66% of counties in California have a lower Expected Annual Loss.

***Figure 8. Expected Annual Loss of the Project Area (Fresno County)***




Furthermore, based on the Climate Mapping for Resilience and Adaptation’s Climate Projections the Project area is expected to have an increasing number of days per year with no precipitation (~288 to 293 days; **Figure 9**) and an increasing number of days per year with temperatures over 100 degrees (~28 to 58 days; **Figure 10**).

***Figure 9. Projected Dry Days***

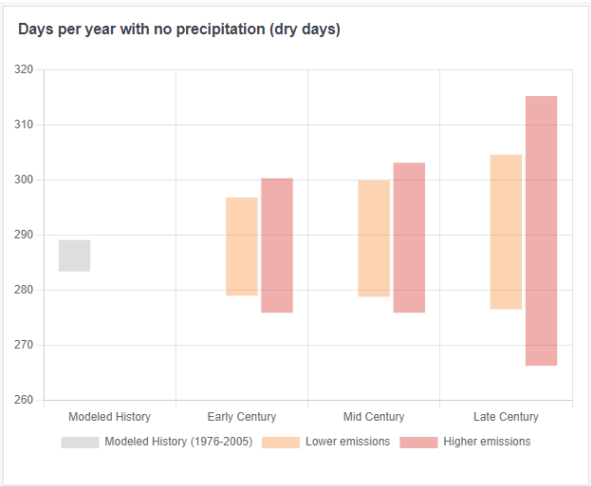
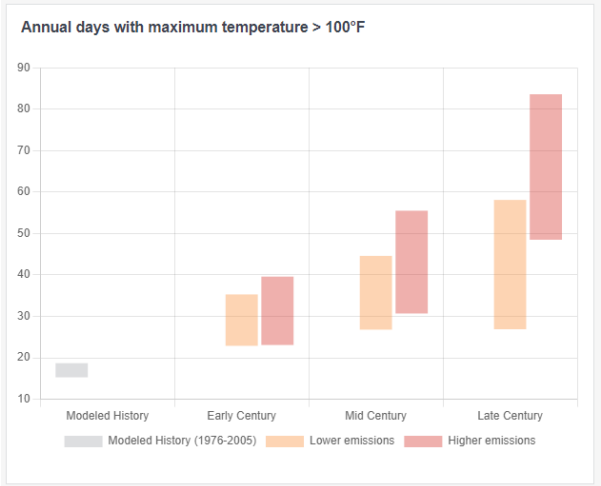



***Figure 10. Projected High Temperature Days***



- *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.*

Under current operations methods, Westlands personnel rely on fossil fuels every time (typically twice a month) they travel throughout the service area to collect meter readings.

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

The Project includes water metering improvements that will provide efficiency and water conservation savings benefits to Westlands and their customers. These equipment upgrades will enable "smarter" operations by providing more accurate and timely information on water deliveries, which will increase Westlands' overall water use efficiency by allowing more precise water application and less waste. By increasing the efficiency of surface water use, the Project maximizes the beneficial use of finite available surface water supplies by providing in-lieu recharge benefits and decreased demand on the groundwater basin. These benefits directly address the concerns described above.

- *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?*

Yes, the Project will directly result in more efficient management of the water supply. The new infrastructure will provide real-time data to Westlands's water management personnel which will allow for more accurate and precise water deliveries and use, resulting in water savings and improved efficiency.

- *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.*

The conserved water as a result of the Project will be used to offset groundwater pumping, especially during drought years.

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

The estimated quantity of water that will be conserved is based on reduced losses and will vary annually depending upon total water allotments flowing through the system. A conservative estimate of the amount of water to be saved is **9,600 AFY**.

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

The conserved water will be used in subsequent years after the proposed Project has been implemented. The water savings from the proposed Project and the reduced need to

supplemental surface water supplies with groundwater will positively reflect the sustainable groundwater management of the critically overdrafted groundwater basin.

- *Will the project assist States and water users in complying with interstate compacts?*

Not applicable.

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

Yes, the proposed Project will help prevent water-related crisis or conflict. As described earlier, the Project will not only benefit Westlands' customers but also the nearby water users, specifically groundwater users. The Project is located within the Westside Subbasin, which has been identified by DWR as a critically overdrafted subbasin and therefore is subject to the SGMA. As described above the Subbasin saw a decrease of groundwater storage of approximately 90,000 AFY in WY 2022. By increasing the efficiency of surface water use, the Project maximizes the beneficial use of finite available surface water supplies by providing in-lieu recharge benefits and decreased demand on the groundwater basin. Therefore, the Project will help the GSAs in the Subbasin achieve the Westside GSP Sustainability Goal and help prevent water-related crisis and conflict within the Subbasin.

Furthermore, the proposed Project supports accurate water delivery measurements in the District. Accurate data is the foundational principle that the District uses to manage its Monthly Water Schedule and the Westside Subbasin GSP. Legal tension over water in the basin is not common in the District, however, with the implementation of the GSP accurate data is instrumental to ensure monitoring the District's water use helps support SGMA by sustainably managing groundwater conditions while not impacting neighboring subbasins. Accurate data is needed to determine the water conditions of the subbasin.

***Ecological Benefits.*** *In addition to the separate WaterSMART Environmental Water Resources Projects NOFO, this NOFO places a priority on projects that that result in ecological benefits, through this section and other sections above, consistent with the SECURE Water Act.*
*Please provide information regarding how the project will provide ecosystem benefits, including:*

- *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).*

Lands within the District's service area might contain habitat where endangered species could be found. The California least tern, San Joaquin kit fox, Tipton kangaroo rat, blunt-nosed leopard lizard, woolly-threads and giant garter snake are known species that could be found in the District's service area identified by USBR. The proposed Project would increase water user's ability to farm, thus providing a benefit to the endangered species within the District. Farming benefits the endangered species within the area by maximizing agricultural land while avoiding endangered habitats and applying pesticides to harmful weeds that could otherwise invade habitats of the endangered species (CropLife America, 2018).

- *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.).*

Yes, water will remain in the system for a longer period time as the increased accuracy of water deliveries will result in less over deliveries.

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

As described above, the proposed project will increase the likelihood of farming activities to continue in the Subbasin which helps improve the habitats of the listed known species that could be found in the District's service area.

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

All expected ecosystem benefits as a direct result of the project are described in the answers above.

***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?*

By increasing the efficiency of surface water use, the Project maximizes the beneficial use of finite available surface water supplies by providing in-lieu recharge benefits and decreased demand on the groundwater basin. Improved groundwater conditions will be critical during dry years when surface water supplies are less readily available. This increased water supply reliability will help increase Westlands' resiliency to climate change effects especially during dry years and extended periods of drought.

- *Does the project seek to improve ecological resiliency to climate change?*

As described above the District's service area might contain habitats where endangered species could be found. The proposed Project would increase the reliability of water user's surface water supply and ability to farm, thus providing a benefit to the endangered species within the District and improving the ecological resiliency to climate change.

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

No, the Project does not.

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

No, the Project does not.

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

The Project contribution to climate change resiliency is thoroughly discussed throughout this application.

*Evaluation Criterion D—Disadvantaged Communities, Insular Areas, and Tribal Benefits (15 points)*

*Up to **15 points** may be awarded based on the extent that the project demonstrates support for the Biden-Harris Administration's priorities, including E.O. 14008: Tackling the Climate Crisis at Home and Abroad and the President's memorandum, Tribal Consultation and Strengthening Nation-to-Nation Relationships.*

Subcriterion D.1. Disadvantaged Communities

*E.O. 14008 affirms the advancement of environmental justice for all through the development and funding of programs to invest in disadvantaged communities. This criterion, which is used to identify projects that advance the Justice 40 Initiative, includes all Federally recognized Tribes and Tribal entities, and any disadvantaged communities in insular areas (American Samoa, Guam, the Northern Mariana Islands, or the Virgin Islands) identified pursuant to the following criteria.*

- *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.*

According to the White House Council on Environmental Quality's interactive Climate & Economic Justice Screening Tool, Westlands overlies eleven census tracts (see **Table 1**), which are considered disadvantaged communities due to low income in combination with climate change, energy, health, housing, legacy pollution, transportation, and workforce development challenges (**Figure 11**). Ten out of eleven census tracts have low high school attainment above 97th percentile, and nine out of eleven census tracts have poverty above 91st percentile. The tracts covering the majority of Westlands (06019007802, 06019008200 and 06019008302) are above the 94th percentile for low-income households and are above the 99th percentile for linguistic isolation. Westlands' jurisdictional area is sparsely populated; most people who work there live in nearby communities such as City of Mendota, CA. The tracts containing most of the adjacent communities, where the workers reside (06019008401, 06019008301, 06019008200) are also identified as having low high school attainment, linguistic isolation and poverty all above the 90th percentile. Thus, most people who reside in and/or earn a living within Westlands live in disadvantaged communities even if they reside outside of the District's service boundary.

***Figure 11. Disadvantaged Communities in Westlands***

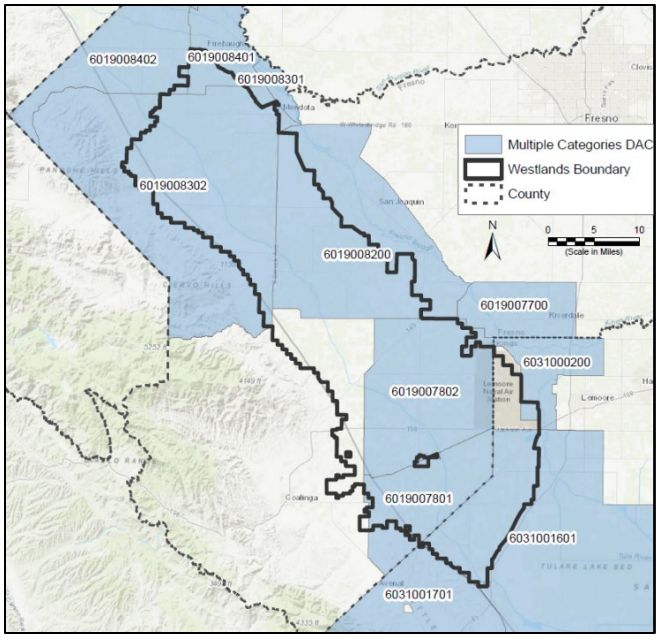



***Table 1. Disadvantaged Communities within Westlands***

| Tract | Census Tracts Disadvantaged Due To |
|---|---|
| 06019007801 | Climate change, energy, health, housing, legacy pollution, workforce development |
| 06019008402 | Energy, legacy pollution, workforce development |
| 06019008401 | Climate change, energy, health, housing, workforce development |
| 06019007802 | Climate change, energy, health, housing, legacy pollution, transportation, workforce development |
| 06019008301 | Climate change, energy, housing, legacy pollution, transportation, workforce development |
| 06019008200 | Climate change, energy, workforce development |
| 06019007700 | Energy, housing, workforce development |
| 06019008302 | Health, transportation, workforce development |
| 06031001601 | Energy, workforce development |
| 06031000200 | Energy, housing |
| 06031001701 | Climate change, transportation, workforce development |

- *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?*

The Project will provide direct benefits to the DACs, by improving groundwater conditions in the Subbasin from which these communities draw their drinking water supply. As discussed previously, the improved efficiency of surface water use will reduce groundwater demand, leading to higher groundwater levels and greater groundwater storage in the Subbasin relative to conditions without the Project. These improved conditions will benefit small water systems that rely on groundwater and private shallow domestic wells by decreasing the chance for well dewatering and decreasing the vertical lift required to pump groundwater. Indirect benefits of the Project also include reduced risk of subsidence, thereby reducing the risk of surface water supply disruption to those entities that rely on surface water for domestic supply (e.g., the City of Huron). Indirect benefits to the disadvantaged and underserved communities will be equally important and will stem from overall improved groundwater conditions that support the local agricultural economy. By helping the Subbasin achieve sustainable groundwater management, the Project will allow for continued success of the agricultural sector which provides many jobs in the area.

### 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?*

There are no Tribal lands within the District boundary; however, the Santa Rosa Rancheria is located approximately 11 miles from the District boundary. The Project will provide improved groundwater conditions, which will benefit all nearby groundwater users.

- *Does the proposed project support Tribal led conservation and restoration priorities, and/or incorporate or benefit indigenous traditional knowledge and practices?*

Not applicable.

- *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?*

Not applicable.

*Evaluation Criterion E—Complementing On-Farm Irrigation Improvements (8 points)*

*Up to **8 points** may be awarded for projects that describe in detail how they will complement on- farm irrigation improvements eligible for NRCS financial or technical assistance.*

*If the proposed project will complement an on-farm improvement eligible for NRCS assistance, please address the following:*

- *Describe any planned or ongoing projects by farmers/ranchers that receive water from the applicant to improve on-farm efficiencies.*
    - *Provide a detailed description of the on-farm efficiency improvements.*

Farming in Westlands ranks among the most productive and water efficient in the world. As discussed earlier to help manage the extreme swings in surface water allocations from year to year, farmers in Westlands implement robust water efficiency measures, utilizing innovative water conservation technology, and change their crops or fallow fields to mitigate the impacts of low water allocation years. Westlands encourages farmers to deploy innovative irrigation methods and use the best available technology like microsprayers and drip irrigation to deliver water to crops, helping to maximize every drop.

- *Have the farmers requested technical or financial assistance from NRCS for the on- farm efficiency projects, or do they plan to in the future?*

The Natural Resources Conservation Service (NRCS) provides information on funded projects on a county level. Westlands provides water to locals farmers and conveys water to rural communities on the west side of Fresno and Kings Counties, an area spanning approximately 614,700 acres, which includes approximately 357,000 irrigated acres. Between 2019 and 2023, NRCS funded 861 Environmental Quality Incentives Program (EQIP) projects within Fresno County and 155 EQIP projects in Kings County

- *Describe how the proposed WaterSMART project would complement any ongoing or planned on-farm improvement.*
    - *Will the proposed WaterSMART project directly facilitate the on-farm improvement? If so, how? For example, installing a pressurized pipe through WaterSMART can help support efficient on-farm irrigation practices, such as drip-irrigation.*

***OR***

    - *Will the proposed WaterSMART project complement the on-farm project by maximizing efficiency in the area? If so, how?*

Through EQIP, NRCS provides water users assistance to plan and implement conservation practices. With increased on-farm efficiency as a result of the NRCS-funded EQIP projects and increased efficiency of Westlands water delivery system as a result of the Project, collectively the projects maximize the efficiency in the area and increases the water supply reliability for all water users.

- *Describe the on-farm water conservation or water use efficiency benefits that are expected to result from any on-farm work.*
    - *Estimate the potential on-farm water savings that could result in acre-feet per year. Include support or backup documentation for any calculations or assumptions.*

Reduced water demand is expected from the results of any on-farm water conservation work.

- Please provide a map of your water service area boundaries. If your project is selected for funding under this NOFO, this information will help NRCS identify the irrigated lands that may be approved for NRCS funding and technical assistance to complement funded WaterSMART projects.

**Figure 1** shows the Westlands water service area boundaries.

*Evaluation Criterion F—Readiness to Proceed (8 points)*

*Up to **8 points** may be awarded for this criterion.*

*Points may be awarded based upon the extent to which the proposed project is capable of commencing upon entering into a financial assistance agreement. Note: If your project is selected, responses provided in this section will be used to develop the scope of work that will be included in the financial assistance agreement.*

*Applications that include a detailed project implementation plan (e.g., estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates) will receive the most points under this criterion.*

- *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 provided in Section D.2.2.2 Application Content. This section should focus on a summary of the major tasks to be accomplished as part of the project.***

The Project is ready to proceed as soon as funding is available. The Project is considered inherently feasible, as it entails construction/installation activities that are well understood and can be performed by Westlands personnel. As shown in Westlands Mechanical/Digital Meter Comparison Study (**Appendix A**) Westlands personnel are very knowledgeable about the meters and how to upgrade them to best suit the District's needs. It also shows the District has completed thorough research to develop a workplan for this Project.

The major tasks to be completed upon a financial assistance agreement are as follows:

- *Task 1 Project Management & Grant Administration:* Perform administrative responsibilities associated with the Project including but not limited to schedule management, budget tracking and management, coordinating with relevant agencies regarding Project execution, and managing consultants/contractors. Administer and track any contracts with consultants or other agencies and retain consultants (as needed) to implement the Project. Task 1 will also include required grant administration activities including but not limited to executing the grant agreement and any amendments thereto, administering grant funds, preparing invoices and appropriate backup documentation, and any other grant-required items.
- *Task 2 Environmental/Permitting:* Westlands will work with appropriate consultants to prepare any necessary environmental documentation (e.g., California Environmental Quality Act [CEQA] documentation) and prepare applications for and obtain any required permit(s).

- *Task 3 Construction/Installation:* Westlands will purchase all necessary equipment (meters, conversion kits, etc.), install 150 advanced automated meters, install 1,453 digital conversion kits, and incorporate the 1,603 meters into the Westlands regional AMI system.

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

Prior to construction, the District will obtain all appropriate permits that are needed to construct the Project. All necessary permits will be completed within 6 months after grant agreement has occurred.

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

Design work was conducted during the Westlands Mechanical/Digital Meter Comparison Study (**Appendix A**), where the District identified the best suited meters for the Districts needs.

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

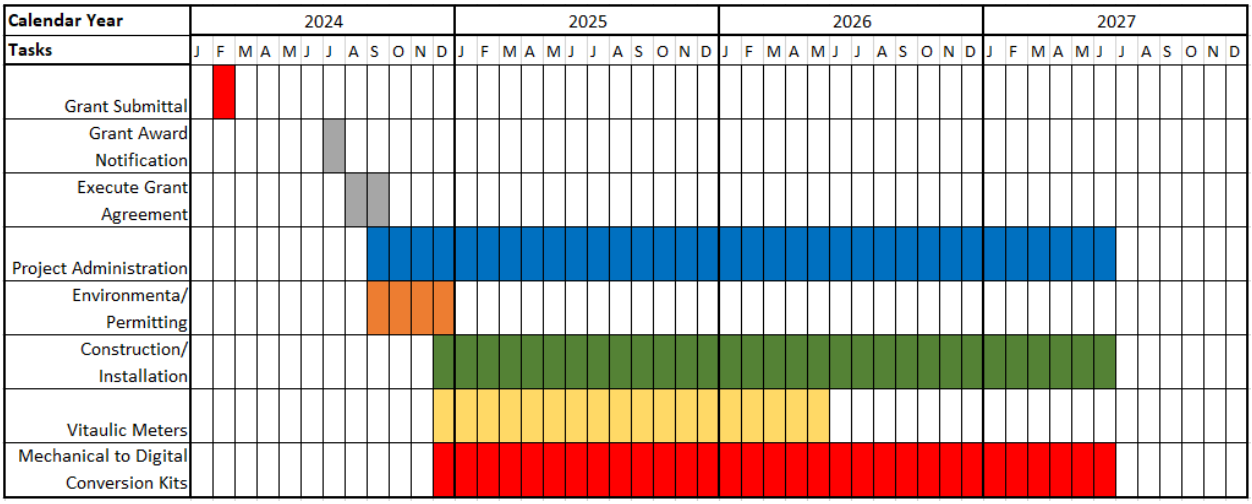
No new policies or administrative actions are required to implement the Project. Westlands regional AMI system is already active and any policies related to data management have already been developed.

    - *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.*

The Project's design work has been completed and no additional design work will be required prior to construction.

    - *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 2. Preliminary Project Schedule***




The Project implementation timeline is shown in **Table 2** above.

- Task 1: *Project Management and Grant Administration* includes ongoing Project management actions including schedule management, budget tracking, coordinating with other agencies, and managing consultants/contractors.
- Task 2: *Environmental/Permitting* are both expected to take place over four months and will be completed by the end of September 2024.
- Task 3: *Construction/Installation,* which includes two subtasks 1) installing the Vitaulic meters and 2) the mechanical to digital conversion kits, will take place over a 31-month period and will be completed by the end of June 2027.

*Evaluation Criterion G—Collaboration (5 points)*

*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.*

*Please describe how the project promotes and encourages collaboration. 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?*

There is widespread support for the Project. Balancing the delivery of surface water supply and groundwater within the District are a crucial water management tool supported by the local water users and enhanced by the proposed Project. The proposed Project will also allow the water users to access daily water delivery data to better manage their farming operations. Additionally, local communities, like the City of Huron and Fresno County, provided letters of support for the first phase of Westlands Advanced Metering Infrastructure Project and the proposed Project is a continuation of that project (**Appendix B**). Local communities support the Project because of the conservation of natural resources and effective usage of water which results in a water savings.

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

The widespread support of the Project will ensure the Project is implemented smoothly with no interruptions due to conflicts of interest. The Project promotes improvement of water management in the District. Having the meters integrating into the regional AMI network, the farmers will have more reliable water delivery data that allow the farmers to make better water management decisions, which will result in an overall water savings and sustainable groundwater conditions.

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

Yes, the Project will increase the likelihood of future water conservation improvements by other water users. As described throughout this application water conservation is important to all water users and is critical to keep agricultural thriving in the District's service area.

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

Yes, as described earlier the Project will directly benefit multiple sectors and users, including agricultural, environmental and small water systems, and indirectly benefit groundwater users (private well owners and nearby municipalities).

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

Letters of support are included in **Appendix B**.

*Evaluation Criterion H—Nexus to Reclamation (4 points)*

*Up to **4 points** may be awarded if the proposed project is connected to a Reclamation project or Reclamation activity. No points will be awarded for proposals without connection to a Reclamation project or Reclamation activity.*

*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?*

Yes, Reclamation is Westlands' water provider. Westlands' full contract entitlement from Reclamation is approximately 1.195 million AF, but it is subject to reductions depending upon hydrology and environmental restrictions.

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

N/A

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

Yes, the proposed Project will benefit a Reclamation project area. The Project will benefit all water users and indirectly benefit the groundwater conditions in the Westside Subbasin, which is located within the San Luis Unit. The District contains Reclamation facilities, including the San Luis Canal, Coalinga Canal, Pleasant Valley Pumping Plant, and the District's distribution system. The Subbasin is in a state of critical overdraft, and the project will contribute to reducing overdraft and help the District sustainably manage the water supplies of the Subbasin.

- *Is the applicant a Tribe?*

No.

## Performance Measures

*Provide a brief summary describing the performance measure that will be used to quantify actual benefits upon completion of the project (e.g., water saved or better managed, energy generated or saved). For more information calculating performance measure, see Appendix A: Benefit Quantification and Performance Measure Guidance.*

*All Water and Energy Efficiency Grants applicants are **required** to propose a "performance measure" (a method of quantifying the actual benefits of their project once it is completed). A provision will be included in all assistance agreements with Water and Energy Efficiency Grants recipients describing the performance measure and requiring the recipient to quantify the actual project benefits in their final report to Reclamation upon completion of the project. If information regarding project benefits is not available immediately upon completion of the project, the financial assistance agreement may be modified to remain open until such information is available and until a Final Report is submitted. Quantifying project benefits is an important means to determine the relative effectiveness of various water management efforts, as well as the overall effectiveness of Water and Energy Efficiency Grants.*

The performance measures that will be used to quantify actual benefits upon completion of the Project will be based on past and post-Project implementation. Performance measures include reduction of labor, improved groundwater management, and leakage analysis of metering devices. The performance measures mentioned above will be used to quantify the sustainable savings of the AMI Project.

---------- *End of Technical Proposal (50 page maximum)* ----------

## Project Budget

**Table 1** summarizes the Non-Federal and Federal funding sources. The total Project cost is $3,616,652. The 50% Non-Federal local cost share is anticipated to be fully funded by Westlands. **Table 2** provides a summary of the total budget and the following section *Budget Narrative* includes detailed budget descriptions and backup for each budget object category.

**Table 1. —Summary of Non-Federal and Federal Funding Sources**

| FUNDING SOURCES | AMOUNT |
|---|---|
| **Non-Federal Entities** | |
| 1. Westlands Water District | $1,808,326 |
| **Non-Federal Subtotal** | $1,808,326 |
| **REQUESTED RECLAMATION FUNDING** | $1,808,326 |
| **TOTAL PROJECT COST** | $3,616,652 |

**Table 2. – Budget Summary**

| Summary | | | |
|---|---|---|---|
| **6. Budget Object Category** | **Total Cost** | **Federal Estimated Amount** | **Non-Federal Estimated Amount** |
| **a. Personnel** | **$529,245** | | |
| **b. Fringe Benefits** | **$463,727** | | |
| **c. Travel** | **$34,258** | | |
| **d. Equipment** | **$2,087,236** | | |
| **e. Supplies** | **$0** | | |
| **f. Contractual** | **$0** | | |
| **g. Construction** | **$365,484** | | |
| **h. Other Direct Costs** | **$37,405** | | |
| **i. Total Direct Costs** | **$3,517,355** | | |
| **i. Indirect Charges** | **$99,297** | | |
| **Total Costs** | **$3,616,652** | **$1,808,326** | **$1,808,326** |
| **Cost Share Percentage** | | **50%** | **50%** |

# Budget Narrative

*Personnel*

**Table 3. Personnel**

| **Personnel** | | | |
|---|---|---|---|
| **Position Title** | **Time (hours)** | **Rate ($ per hour)** | **Total Cost** |
| Supervisor of Resources | 80 | $72.99 | $5,839 |
| Resources Engineer | 370 | $44.91 | $16,616 |
| Supervisor of Field Engineering and Planning | 80 | $72.85 | $5,839 |
| Field Engineer | 128 | $44.91 | $5,759 |
| Field Operator | 8,015 | $33.82 | $271,101 |
| Water Measurement Technician | 213 | $35.93 | $7,658 |
| Senior Water Measurement Specialist | 176 | $35.93 | $6,326 |
| Electrician | 4,809 | $43.69 | $210,107 |
| | | **Total** | **$529,245** |

**Table 3** summarizes Westlands Personnel budget for the Project. The labor rates included in the budget proposal represent the actual labor rates of the identified personnel/positions and are consistently applied to Federal and Non-Federal activities. The total cost is an estimated effort, in hours. Totals may not match due to rounding.

The Project Manager is a Resources Engineer for Westlands and will devote 370 hours overseeing the Project, at a rate of $44.91 per hour. The Supervisor of Resources for Westlands will contribute approximately 80 hours for the review of deliverables and oversite, at a rate of $72.99 per hour.

The District's Field Engineer will contribute 128 hours to purchasing the meters and overseeing installation of the meters at a rate $44.91 per hour. The Supervisor of Field Engineering and Planning will contribute 80 hours to review purchase orders and installations of the meters at a rate of $72.85.

Field Operators for Westlands will contribute 8,015 hours installing the meters at a rate of $33.82 per hour. Senior Water Measurement Specialist and Water Measurement Technician will contribute 176 and 213 hours, respectively, on calibrating the installed meters to accurately measure flow within the District standards at a rate of $35.93 per hour.

Electricians for Westlands will contribute 4,809 hours installing the grounding rods for the meters at a rate of $43.69 per hour.

In the SF424C form $28,294 of the Personnel budget is included in the Administrative and legal expenses Cost Classification and $500,951 of the budget is included in the Site work Cost Classification.

*Fringe Benefits*

**Table 4. Fringe Benefits**

| **Fringe Benefits** | | | |
|---|---|---|---|
| **Position Title** | **Compensation ($/hour)** | **Quantity (hours)** | **Total Cost** |
| Supervisor of Resources | $64.01 | 80 | $5,121 |
| Resources Engineer | $39.33 | 370 | $14,553 |
| Supervisor of Field Engineering and Planning | $63.85 | 80 | $5,118 |
| Field Engineer | $39.33 | 128 | $5,044 |
| Field Operator | $29.65 | 8,015 | $237,648 |
| Water Measurement Technician | $31.46 | 213 | $6,705 |
| Water Measurement Specialist | $31.46 | 176 | $5,539 |
| Electrical | $38.26 | 4,809 | $184,000 |
| | | **Total** | **$463,727** |

**Table 4** summarizes Westlands Personnel Fringe Benefits budget for the Project. Totals may not match due to rounding.

The Project Manager is a Resources Engineer for Westlands, and will devote 370 hours overseeing the Project, at a rate of $39.33 per hour. The Supervisor of Resources for Westlands and will contribute approximately 80 hours for the review of deliverables and oversite, at a rate of $64.01 per hour.

A Field Engineer for Westlands will contribute 128 hours to purchasing the meters and overseeing installation of the meters at a rate $39.33 per hour. The Supervisor of Field Engineering and Planning for Westlands and will contribute 80 hours to review purchase orders and installations of meters at a rate of $63.85.

Field Operators for Westlands will contribute 8,015 hours installing the meters at a rate of $29.65 per hour. Senior Water Measurement Specialist and Water Measurement Technician will contribute 176 and 213 hours, respectively, on calibrating the installed meters to accurately measure flow within the District standards at a rate of $31.46 per hour.

Electricians for Westland Water District will contribute 4,809 hours installing the grounding rods for the meters at a rate of $38.26 per hour.

In the SF424C form $24,792 of the Fringe budget is included in the Administrative and legal expenses Cost Classification and $438,935 of the budget is included in the Site work Cost Classification.

*Travel*

**Table 5. Travel**

| Travel | | | | |
|---|---|---|---|---|
| **Purpose** | **From/To** | **# of Miles** | **Rate ($/mile)** | **Total Cost** |
| Meter site installation | Westlands Water District's Fresno Office to meter sites | 51,132 | $0.67 | $34,258 |
| | | | **Total** | **$34,258** |

**Table 5** summarizes Westlands Travel budget for the Project. Totals may not match due to rounding. Anticipated travel costs for the project includes 51,132 miles, driven throughout the District service area retrofitting the meters, at a rate of $0.670 per mile. The total Travel budget is expected to be $34,258.

In the SF424C form the total Travel budget is included in the Site work Cost Classification.

*Equipment*

**Table 6. Equipment**

| Equipment | | | |
|---|---|---|---|
| **Equipment Item** | **Quantity** | **Unit Cost** | **Total Cost** |
| Victaulic Meter | 150 | $4,000 | $600,000 |
| Mechanical to Digital (Conversion Kits) | 1,456 | $900 | $1,307,700 |
| MiNode License Endpoint | 1,603 | $105 | $168,315 |
| Hanger | 1,603 | $7 | $11,221 |
| | | **Total** | **$2,087,236** |

**Table 6** summarizes the equipment budget for the Project. Totals may not match due to rounding. The Project will install 150 Victaulic meters and 1,456 mechanical to digital conversion kits. The prices were based off the company pricing as shown. The MiNode License Endpoint and the Hanger will be installed with the proposed meters. The prices listed are from a quote that was given to the District by R&B Company.

In the SF424C form the total Equipment budget is included in the Equipment Cost Classification.

*Supplies*
There are no supplies costs included in the requested grant funding.

*Contractual*
There are no contractual costs included in the requested grant funding.

*Construction*

**Table 7. Construction**

| **Construction** | | |
|---|---|---|
| **Item** | **Purpose** | **Total Cost** |
| Construction Services | Retrofitting 1,603 meters. | $365,484 |
| CEQA (Compliance and Filing Fees) | Environmental/Permitting | $17,405 |
| NEPA Compliance | Environmental/Permitting | $20,000 |
| | **Total** | **$402,889** |

**Table 7** summarizes the Construction budget for the Project. Totals may not match due to rounding. Construction costs include installation of equipment and environmental/permitting tasks. Construction costs include the installation of 150 victaulic meters and 1,456 mechanical to digital conversion kits along with the Yearly Hosting Cost of installing each proposed meter. The proposed Project does not create any environmental impact, nor will it need any environmental documentation. However, there are existing facilities in the District that are not exempt from CEQA. Therefore, the proposed project environmental compliance cost may include CEQA and NEPA compliance. Westlands budgeted $37,405 for CEQA filing fees and fees associated with NEPA. Westlands will hire a qualified consultant to obtain all required permits.

In the SF424C form the total Construction Services budget is included in the Construction Cost Classification.

*Other Direct Costs*
There are no other direct costs included in the requested grant funding.

*Indirect Costs*

**Table 8. Indirect Costs**

| **Indirect Costs** | | |
|---|---|---|
| **Rate Type** | **Basis** | **Total Cost** |
| Indirect costs | 10% of Personnel and Fringe Costs | $99,297 |
| | **Total** | **$99,297** |

**Table 8** summarizes the Indirect Costs budget for the Project. Westlands does not received a Federal negotiated indirect cost rate, therefore the budget includes 10% de minimis rate of modified total direct costs (personnel, and fringe costs).

In the SF424C form the total Indirect Costs budget is included in the Contingencies Cost Classification.

## Environmental and Cultural Resources Compliance

To allow Reclamation to assess the probable environmental and cultural resources impacts and costs associated with each application, all applicants should respond to the following list of questions focusing on NEPA, ESA, and NHPA requirements. Please answer the following questions to the best of your knowledge and note that this information will be used in evaluating the project's readiness to proceed and project implementation. If any question is not applicable to the project, please explain why. The application should include the answers to the following questions:

- 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 project will not impact the surrounding environment, as no earth-disturbing work will take place.

- 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?

Lands within the District's service area might contain habitat where endangered species could be found. The California least tern, San Joaquin kit fox, Tipton kangaroo rat, blunt-nosed leopard lizard, San Joaquin woolly-threads and giant garter snake are known species that could be found in the District's service area identified by USBR. Due to the lack of environmental disturbance in the planning and design efforts, the Project will not negatively impact the species. In addition, the proposed Project would increase the water user's ability to farm, thus providing a benefit to the endangered species within the District. Farming benefits the endangered species within the area by maximizing agricultural land in production while avoiding endangered habitats and by applying pesticides to harmful weeds that could otherwise invade habits of the endangered species (CropLife America, 2018).

- 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.

Wetlands and surface waters inside the project boundaries that potentially fall under CWA jurisdiction include Pilibos Wildlife Area, Pleasant Valley Ecological Reserves and Mendota Wildlife Refuge. However, the Project will not impact these areas.

- When was the water delivery system constructed?

The District's water delivery system was built from 1963 to 1981. This includes the major elements of the CVP and the District's underground laterals.

- 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 modifications 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.

No. There are no buildings, structures, or features in the District listed or eligible for listing on the National Register of Historic Places.

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

No. There are no known archeological sites in the Project area.

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

No. It is anticipated that the Project will provide positive impacts on low income and minority populations.

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

No. The Project will not limit access to, or ceremonial use of, sacred sites or result in other impacts 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 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.

## Required Permits or Approvals

The proposed Project does not create any environmental impact, nor will it need any environmental documentation. However, there are existing facilities in the District that are not exempt from CEQA. Therefore, the proposed project environmental compliance cost may include CEQA and NEPA compliance. Westlands budgeted $37,405 for CEQA filing fees and fees associated with NEPA. Westlands will hire a qualified consultant to obtain all required permits.

## Overlap or Duplication of Effort Statement

There is no overlap between the proposed project and any other active or anticipated proposals or projects. Furthermore, this proposal is not in any way duplicative of any proposal or project that has been or will be submitted for funding consideration to any other potential funding source.

## Conflict of Interest Disclosure Statement

No actual or potential conflict of interest exists at the time of this proposal's submission.

## Uniform Audit Reporting Statement

The District has not done a single year audit because the District's federal grant expenditures have not exceeded $750,000.

## SF-LLL: Disclosure of Lobbying Activity (if Applicable)

Not applicable.

## Letters of Support

Westlands solicited and received letters of support for the first phase of Westlands Advanced Metering Infrastructure, and the proposed Project is a continuation of that project. A copy of the letters of support are included in **Appendix B** of the Technical Proposal. The two entities are: 1) The City of Huron; and 2) The County of Fresno.

## Official Resolution

If selected, Westlands will provide an official resolution adopted by the Westlands Board of Directors to commit Westlands to the financial and legal obligations associated with receipt of a financial assistance award under this NOFO, verifying:

- The identity of the official with legal authority to enter into an agreement
- The board of directors, governing body, or appropriate official who has reviewed and supports the application submitted
- That your organization will work with Reclamation to meet established deadlines for entering into a grant or cooperative agreement

# Letters of Support

# Letters of Support

# County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
**STEVEN E. WHITE, DIRECTOR**

September 10, 2020

Mr. Jose Gutierrez
Chief Operating Officer
Westlands Water District
3130 North Fresno Street
Fresno, California 93703-6056

**RE: Support for Application of U.S. Bureau of Reclamation WaterSMART: Water and Energy Efficiency Grant**

Dear Mr. Gutierrez,

The intent of this letter is to express the County of Fresno's (County) support for Westlands Water District (WWD) in applying for funding from the WaterSMART program, aimed at achieving sustainable water savings and broader water reliability benefits. It is our understanding that the proposed Advanced Metering Infrastructure Project (Project) is to replace the manually read meters with advanced, hands-free metering devices.

We appreciate the importance of conserving our resources and efficiently utilizing the water savings the proposed Project will produce, benefitting both the District and the Westside of the County, including the cities of Coalinga and Huron.

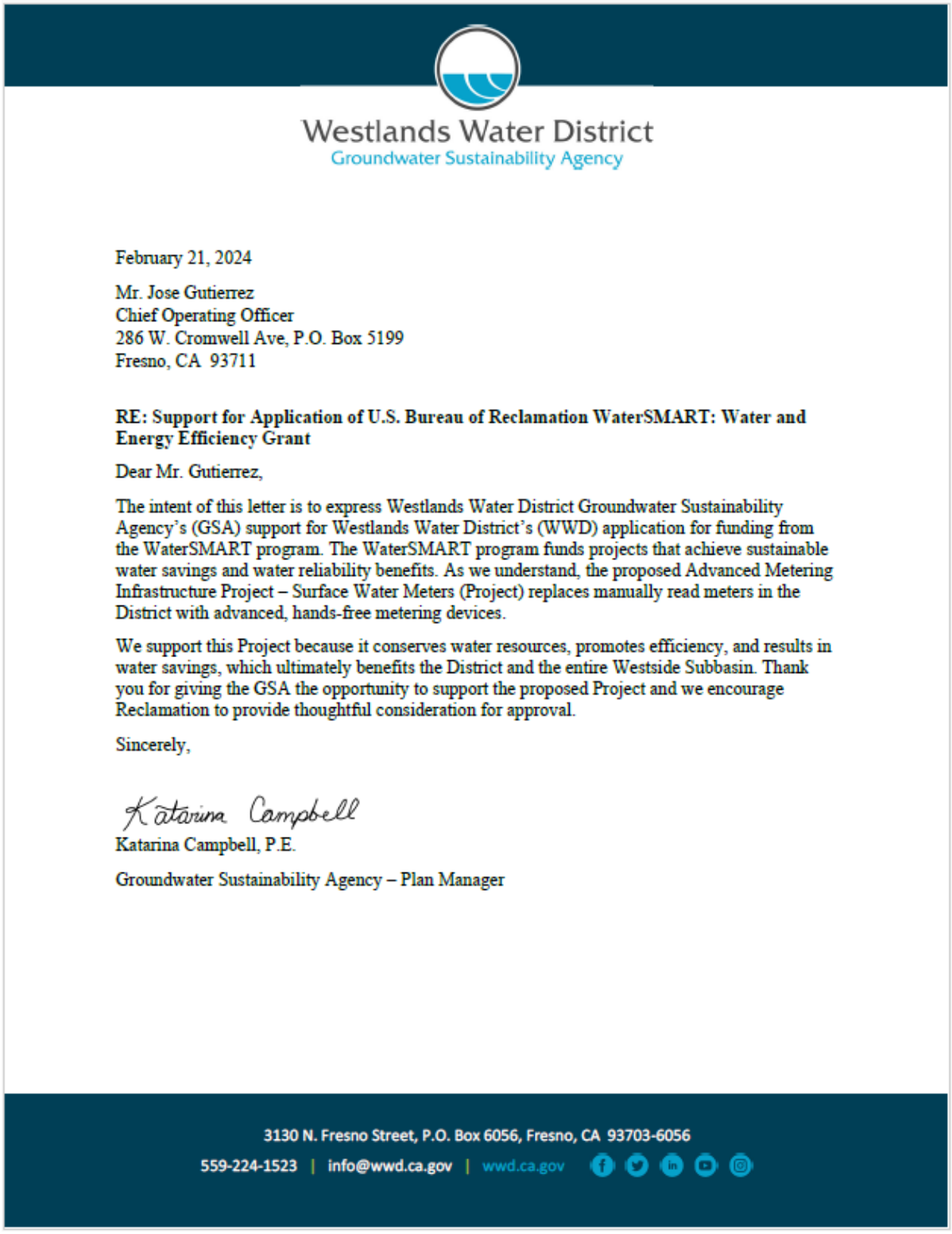
Therefore, the County supports the District's application to achieve sustainable water savings and broader water reliability benefits. Thank you for giving the County the opportunity to support the proposed Project and we hope the U.S. Bureau of Reclamation gives thoughtful consideration for approval.

Sincerely,

Bernard Jimenez
Assistant Director

**ADMINISTRATION**
2220 Tulare Street, Sixth Floor / Fresno, California 93721 / Phone (559) 600-4078 / FAX (559) 600-4548
The County of Fresno is an Equal Opportunity Employer

WWD GSA Letter of Support:



Westlands Water District
Groundwater Sustainability Agency

February 21, 2024

Mr. Jose Gutierrez
Chief Operating Officer
286 W. Cromwell Ave, P.O. Box 5199
Fresno, CA 93711

**RE: Support for Application of U.S. Bureau of Reclamation WaterSMART: Water and Energy Efficiency Grant**

Dear Mr. Gutierrez,

The intent of this letter is to express Westlands Water District Groundwater Sustainability Agency's (GSA) support for Westlands Water District's (WWD) application for funding from the WaterSMART program. The WaterSMART program funds projects that achieve sustainable water savings and water reliability benefits. As we understand, the proposed Advanced Metering Infrastructure Project – Surface Water Meters (Project) replaces manually read meters in the District with advanced, hands-free metering devices.

We support this Project because it conserves water resources, promotes efficiency, and results in water savings, which ultimately benefits the District and the entire Westside Subbasin. Thank you for giving the GSA the opportunity to support the proposed Project and we encourage Reclamation to provide thoughtful consideration for approval.

Sincerely,

Katarina Campbell

Katarina Campbell, P.E.

Groundwater Sustainability Agency – Plan Manager

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