WESTSIDE WATER AUTHORITY

KERN COUNTY, CA
February 2024

WESTSIDE WATER AUTHORITY ADVANCED METERING PROJECT

Application Submitted to the United States Bureau of Reclamation for a WaterSMART Grant: Water and Energy Efficiency Grants for Fiscal Year (FY) 2024 and FY 2025 Funding Opportunity No. R24AS00521

PREPARED FOR:
WESTSIDE WATER AUTHORITY
5555 CALIFORNIA AVE, SUITE 209, BAKERSFIELD, CA 93309

PREPARED BY:
PROVOST & PRITCHARD CONSULTING GROUP
1800 30TH STREET, SUITE 280, BAKERSFIELD, CALIFORNIA 93301

PROVOST& PRITCHARD

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Abbreviations

af ..... Acre-feet
af/y ..... Acre-feet per year
AMR ..... Automated Meter Reading
AMI ..... Automated Metering Infrastructure
BMWD ..... Berrenda Mesa Water District
BOD ..... basis of design
CASGEM ..... California State Groundwater Elevation Monitoring
CEQA ..... California Environmental Quality Act
CIP ..... Capital Improvement Plan
CO2e ..... carbon dioxide equivalent
DAC ..... Disadvantaged Community
DWR ..... California Department of Water Resources
ETa ..... actual evapotranspiration
EQIP ..... Environmental Quality Incentive Program
IRWM ..... Integrated Regional Water Management
IS ..... Initial Study
LHWD ..... Lost Hills Water District
LO ..... Landowner
MND ..... Mitigated Negative Declaration
NEPA ..... National Environmental Policy Act
NHPA ..... National Historic Preservation Act
NIST ..... National Institute of Standards and Technology
NRCS ..... Natural Resources Conservation Service
P&P ..... Provost & Pritchard Consulting Group
PG&E ..... Pacific Gas & Electric
PS&E ..... plans, specifications, and estimate
SDAC ..... Severely Disadvantaged Community
SGMA ..... Sustainable Groundwater Management Act
SJVAPCD ..... San Joaquin Valley Air Pollution Control District
SWP ..... State Water Project
SWPPP ..... Storm Water Pollution Prevention Plan
SWRCB ..... State Water Resources Control Board
USBR ..... United States Bureau of Reclamation
WWA ..... Westside Water Authority

1 TECHNICAL PROPOSAL

(A) EXECUTIVE SUMMARY

1.A.1 GENERAL PROJECT INFORMATION:

Proposal Name: Westside Water Authority Advanced Metering Project
Date: February 22, 2024
Applicant Name: Westside Water Authority
Applicant Category: Category A applicant
City, County, State: Lost Hills, Kern County, California

1.A.2 EXECUTIVE SUMMARY:

Westside Water Authority (WWA) is a joint powers authority which manages Lost Hills Water District, Berrenda Mesa Water District, and Belridge Water Storage District in western Kern County plus Dudley Ridge Water District in southwestern Kings County. WWA proposes to implement an advanced metering project in Lost Hills Water District and Berrenda Mesa Water District. Existing propeller flowmeters that are in poor condition and known to have poor accuracy will be replaced with more accurate magnetic flowmeters. Automatic meter reading and advanced metering infrastructure will also be added to enable WWA to utilize real-time meter data instead of once per month or weekly readings to better identify unauthorized use, water losses, improve water management, recoup lost revenue, reduce meter reading time, and reduce vehicle use.

An existing WWA program to promote the Natural Resources Conservation Services' Environmental Quality Incentive Program (EQIP) in Lost Hills Water District will be extended and expanded to Berrenda Mesa Water District. With more accurate turnout metering and promotion of the EQIP program, landowners are more likely to use EQIP funding to assist in on-farm water conservation projects like lining on-farm reservoirs (which will increase project savings). The project is estimated to take about two years to complete and reduce the loss of approximately 3,495 acre-feet per year of State Water Project water that currently is lost to saline groundwater. Assuming award in December 2024, completion would be by the end of December 2026. The project is not located on a Federal facility, but conserved water currently flows through joint State and Federal facilities (Central Valley Project/State Water Project) and the Sacramento and San Joaquin River Delta that supply both.

(B) PROJECT LOCATION

The proposed project is within the boundaries of the Berrenda Mesa Water District (BMWD) and Lost Hills Water District (LHWD), located in Kern County, California. **Figure 1** shows the two district boundaries which encompass 129,797 total acres of land within the San Joaquin Valley. The project boundary includes a portion of Lost Hills, about 50 miles northwest of Bakersfield, the closest major city.

The locations of meters that will be replaced with more accurate magnetic flowmeters within Lost Hills and Berrenda Mesa are shown in **Figure 2** and **Figure 3**, respectively. The project coordinates are provided in **Table 1**.

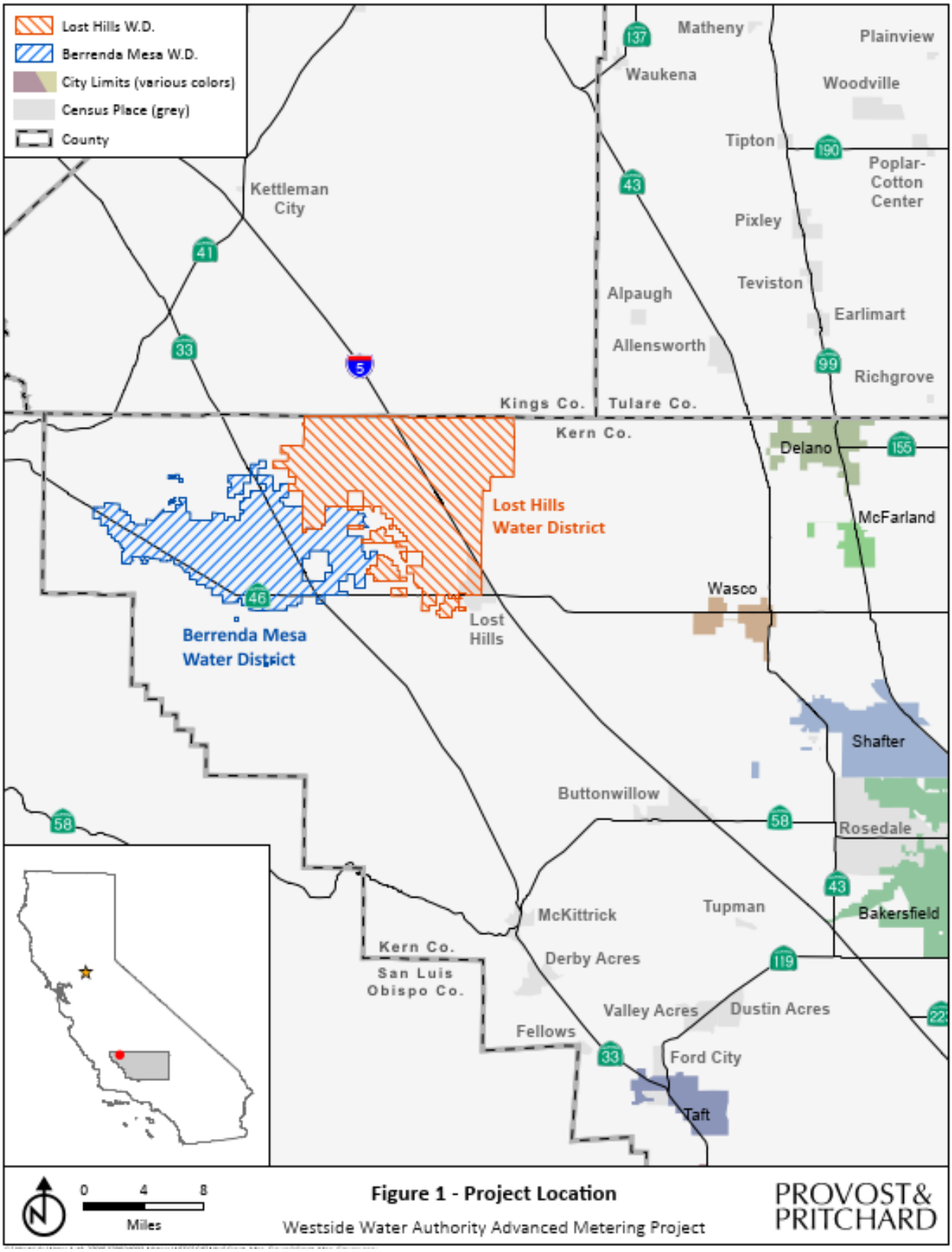


Figure 1. Westside Water Authority Advanced Metering Project Location Map

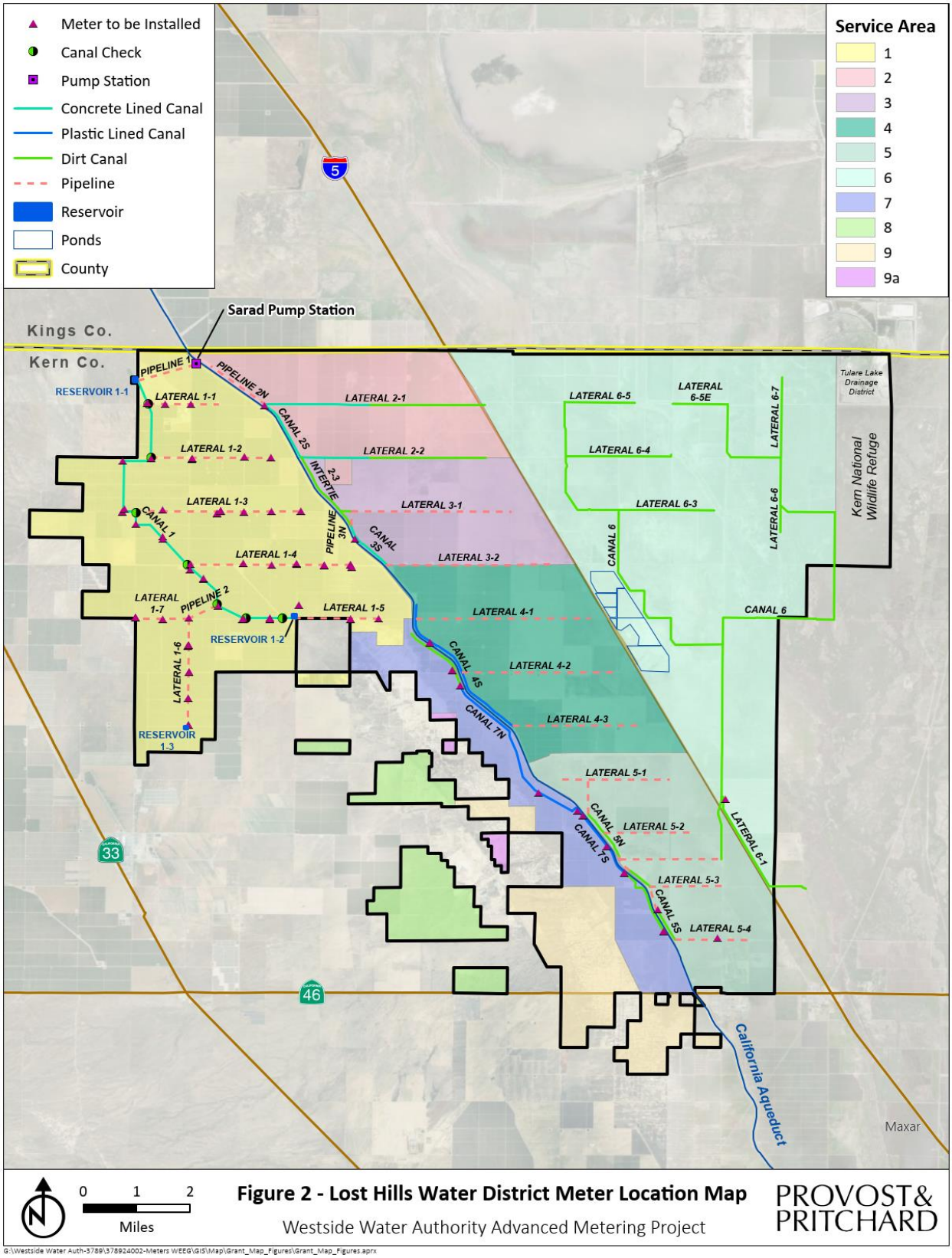


Figure 2. Lost Hills Water District Meter Location Map

Figure 3. Berrenda Mesa Water District Meter Location Map

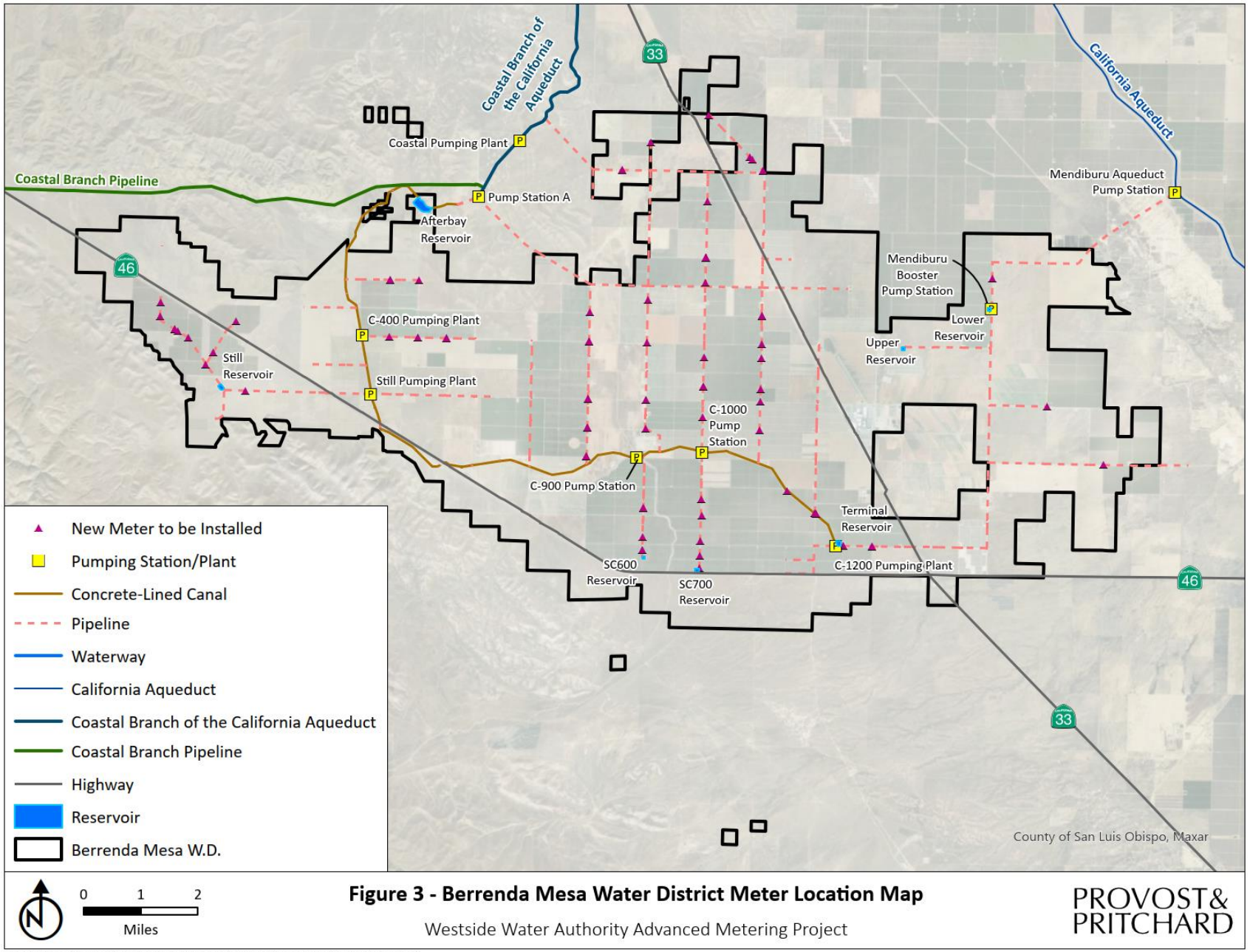


Table 1. Project Location – Latitude/Longitudes of Water Districts

	Latitude	Longitude
Lost Hills Water District	35°43'38.17" N	119°45'38.17" W
Berrenda Mesa Water District	35°39'51.98" N	119°56'49.11" W

(C) PROJECT DESCRIPTION

1.C.1 BACKGROUND:

Westside Water Authority (WWA) is a California Water Authority that was established in 2020 through a Joint Powers Agreement between four neighboring water districts: Berrenda Mesa Water District, Belridge Water Storage District, Lost Hills Water District, and Dudley Ridge Water District. The WWA operates out of Bakersfield and manages the operations, contracts, administration, and water transactions of all four Districts and their sharing of resources.

LHWD and BMWD are both California Water Districts that were established in 1963 with the purpose of providing irrigation water from the State Water Project (SWP) to the lands within the districts. The California Water Code gives them and the Westside Water Authority the authority to receive grant funds. LHWD and BMWD are both member units of Kern County Water Agency (KCWA) along with 11 other member units who contract for State Water Project water through KCWA.

The irrigation water distribution systems in both Districts were constructed in the late 1960's with propeller flowmeters on all turnouts that supply water to customers. Those meters have been operated and maintained with weekly manual readings. In BMWD, these meters are worn to the point of no longer providing accurate water measurement and are no longer used for flow measurements. In LHWD, the meters have been maintained and rehabilitated and are in current use.

Landowners (LO) also have flowmeters, but some of those are located downstream of reservoirs. Figure 4 *Diagram of Flowmeter and On-Farm Reservoir Locations* depicts the relative locations of old propeller flowmeters to on-farm reservoirs and LO flowmeters within BMWD. In BMWD, all but a few of LO meters are Seametrics AG3000 Magnetic Flowmeters. These are considered more accurate than propeller flowmeters, but due to reliability issues with this model of flowmeter and some being located downstream of landowner reservoirs (that incur seepage losses) there is some inaccuracy of the flow measurements.

In LHWD, with the exception of several locations, the District's propeller flowmeters are used by both the District and grower. Growers have Seametrics AG3000 Magnetic Flowmeters in several locations in LHWD but are not used for the official LHWD metered flow.

WWA staff have researched options to upgrade the districts' turnout meters for improving accuracy and implementing Automatic Meter Reading and Automatic Meter Infrastructure (AMR/AMI) to propose this project.

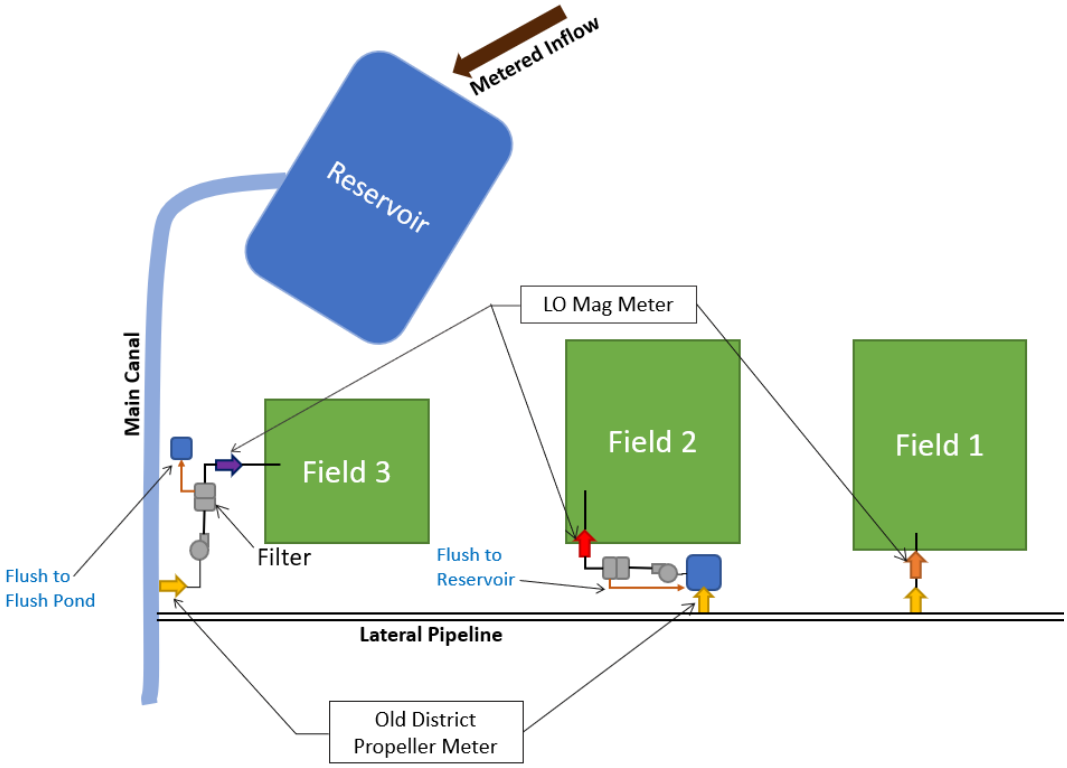


Figure 4. Diagram of Flowmeter and On-Farm Reservoir Locations

1.C.2 PROJECT DETAILS:

WWA staff propose to replace 142 of the existing propeller flowmeters with more accurate magnetic flowmeters on Lost Hills Water District and Berrenda Mesa Water District turnouts that deliver water to agricultural customers (90% of the total active meters). Magnetic water meters will be provided by McCrometer, a company that has a demonstrated ability to provide quality equipment that meets this need. Fifteen (15) meters (or 10% of the total meters) in the districts are in a vertical upflow tee tube meter configuration. This type of meter will be replaced by a more accurate TechnoFlo propeller meter; no magnetic flow measurement devices are available in this configuration. **Figure 5** *Existing Flowmeters on District Turnouts* shows the typical horizontal and vertical propeller flowmeters within the districts.

Figure 5. Existing Flowmeters on District Turnouts

The proposed flowmeter upgrades are shown in **Figure 6**. WWA has standardized on the McCrometer Dura Mag meter for horizontal configurations, which has a stated accuracy within ±1% of the measured flow. WWA has standardized with the TechnoFlo PV30 for the vertical configurations, which has a stated accuracy within ±1-2% of the measured flow.

Detailed descriptions of the proposed upgraded flowmeters are provided in *Section 1.D.1.4* and specification sheets are included in **Attachment 1**. Labor and installation equipment will be provided and performed by WWA operations staff.

Figure 6. Proposed Flowmeter Upgrades

AMR/AMI equipment, installation, and programming will be performed by Mueller Systems. WWA staff have reviewed multiple options for this equipment and have selected Mueller as it provides a low-cost system that can communicate over a radio network (cellular signals in the districts can be intermittent). The proposed Mueller AMR/AMI equipment are shown in **Figure 7**. Equipment specification sheets for the AMR/AMI components are included in **Attachment 2**.

The AMR/AMI system will allow WWA to obtain and analyze real-time meter readings from its turnouts to growers and staff will no longer manually collect data from meters. The system will enable WWA to utilize real-time meter data instead of once per month or weekly readings to better identify unauthorized use, water losses, improve water management, recoup lost revenue, reduce meter reading time, and reduce vehicle use.

Figure 7. Proposed AMR/AMI System Components

(D) EVALUATION CRITERIA

1.D.1 EVALUATION CRITERION A – QUANTIFIABLE WATER SAVINGS (25 POINTS)

1.D.1.1 DESCRIBE THE AMOUNT OF ESTIMATED WATER SAVINGS

Approximately 3,495 acre-feet of water per year would be saved by the project's installation of smart meters plus extension and expansion of the NRCS EQIP Program. This is equal to approximately two percent of the 172,000 acre-feet of water delivered annually to LHWD and BMWD from the California Aqueduct. Improved accounting for water deliveries and losses on a real-time basis is expected to result in improvements in identifying and reducing leaks and seepage in District and on-farm delivery systems plus improve on-farm irrigation management. Included in the estimate are water savings landowners are expected to realize through utilization of the NRCS EQIP water conservation incentives for implementing conservation practices.

In particular, unlined on-farm reservoirs are candidates for EQIP reservoir lining incentives. On-farm reservoirs are typically located near the grower turnouts, as shown in Figure 4 *Diagram of Flowmeter and On-Farm Reservoir Locations*. There are approximately sixty-five (65), 1 to 1.5-acre on-farm reservoirs in BMWD and forty (40) in LHWD, the majority of which are unlined ponds that contribute seepage to the saline groundwater table as described in the following section.

1.D.1.2 DESCRIBE CURRENT LOSSES

Water losses that would be saved by the project are water delivered to growers but lost to beneficial use through seepage from on farm reservoirs or by deep percolation after irrigation applications and lost to salty impaired and unusable groundwater aquifers that underlay the project area. There are no benefits associated with current losses to salty aquifers as the water is too salty to be of beneficial use. Figure 8 *Salinity of Groundwater in Westside Water Authority* below shows the salinity of groundwater in the Lost Hills area exceeds the EPA threshold for Electrical Conductivity of 1,000 microsiemens per centimeter. The Berrenda Mesa area, further to the west of Lost Hills, generally has higher salt levels.

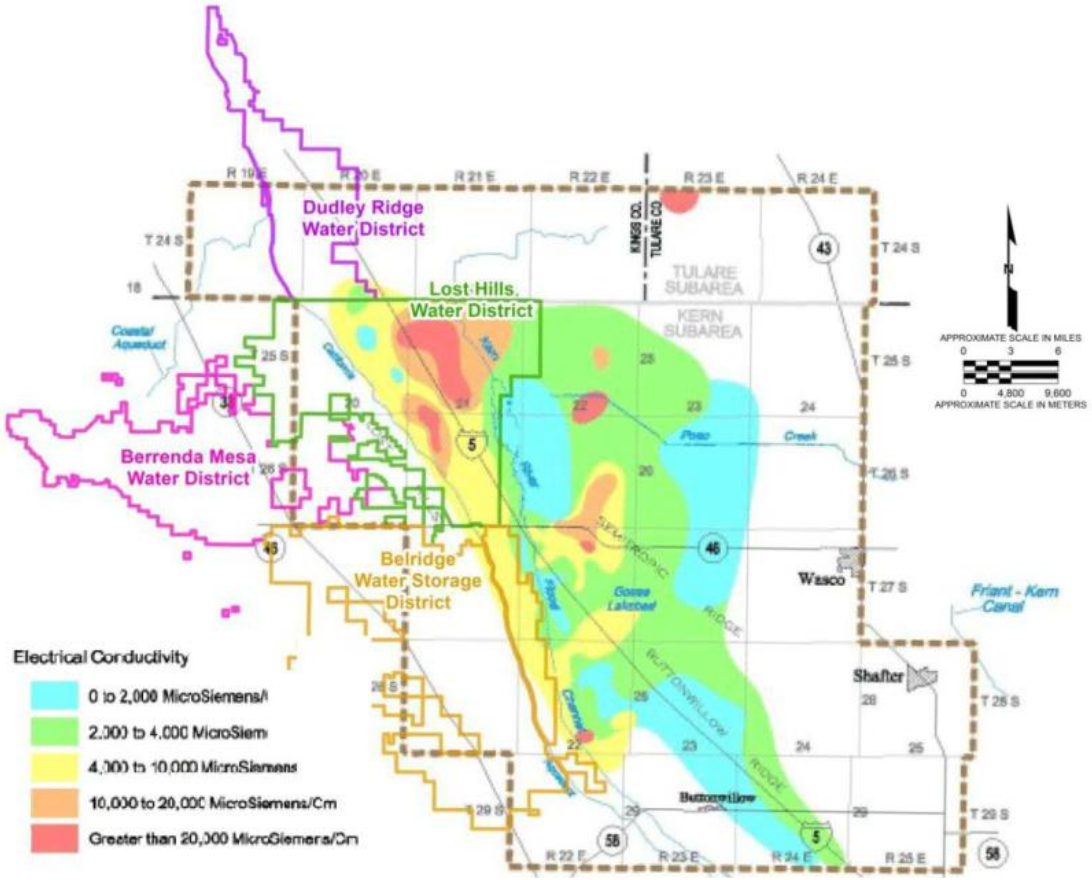


Figure 8. Salinity of Groundwater in Westside Water Authority (Map done by AMEC using data from California Department of Water Resources 2001)

1.D.1.3 DESCRIBE THE SUPPORT/DOCUMENTATION OF ESTIMATED WATER SAVINGS

Provide sufficient detail supporting how the estimate was determined, including all supporting calculations.

Information was collected regarding water savings that have resulted from other similar projects, and based on that a percentage of total water delivered to the districts was assumed to be saved as detailed in the following answer.

1.D.1.4 IRRIGATION FLOW MEASUREMENT QUESTIONS

- How have average annual water savings estimates been determined? *Please provide all relevant calculations, assumptions, and supporting data.*
  Savings for the project have been estimated based on an assumption that water lost to saline groundwater in LHWD would be reduced by an average of two percent of the water DWR delivered to LHWD on average from 2018 to 2023 (80,370 af/y x 0.02 = **1,667** af/y) due to the implementation of advanced metering and extended promotion of the EQIP Program. Furthermore, the water lost to saline groundwater in BMWD would be reduced by two percent of the water DWR delivered to BMWD on average from 2017 to 2022 (91,402 af/y x 0.02 = **1,828** af/y due to advanced metering and expanding promotion of the EQIP Program to BMWD. **Total project water savings** would therefore be 1,667 af/y + 1828 af/y **= 3,495 af/y**.

Water agencies that serve residential customers that implement advanced metering projects including AMR/AMI have been documented to have over 13% reduction in water consumption.[1] West Kern Water District, just west of Berrenda Mesa, implemented an advanced metering project with AMR/AMI in 2017 and experienced a 16% reduction in water use for a combination of residential, commercial, and industrial (oil field operations).[2] Some of the reduction was known to be related to an economic recession. Case studies for agricultural advanced metering projects are limited. Ken Quandt of McCrometer USA reported seeing water savings in agricultural water agencies with advanced metering in the Nebraska area that amount to a 3 to 6% annual savings in water use.[3] He recommended assuming the lower number for WWA given their current elevated level of irrigation management. Westlands Water District recently estimated a 5.3% water savings would result from their implementation of a similar advanced metering project for west side San Joaquin Valley agriculture[4]. Based on a review of this documentation, a conservative assumption of 2% annual savings was used in this grant application.

- 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.*
  Operational losses are currently estimated by subtracting the sum of all grower turnout meters from the sum of the Department of Water Resources' water meter readings from California Aqueduct turnouts in each District. Meter accuracy issues and the use of grower meters downstream of on-farm reservoirs have made it difficult to estimate operational losses accurately. This project aims to improve the tracking of operational losses. Water savings are not based on a reduction of spills.

- 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?
  Nearly all growers' turnouts in BMWD and several in LHWD have Seametrics AG3000 Magnetic Flow Meters that are read once-per week by WWA. These meters are expected to have an accuracy of ± 1% (according to Specification Sheets). However, due to their locations downstream of on-farm reservoirs and operability issues (e.g. inaccurate readings, device downtime), these meters are not as reliable for accurately measuring flow rates. Propeller flowmeters on the remainder of the meters in BMWD and LHWD would be expected to be ± 2% if they were new, but most of the meters are over 10 years old (rehabilitated when needed), so accuracy is known to be significantly lower than 2%.

- Provide detailed descriptions of all proposed flow measurement devices, including accuracy and the basis for accuracy.
  The McCrometer Dura Mag Flow Meter is a battery powered electromagnetic meter that will be used for horizontal meter installations and is shown in Figure 6 *Proposed Flowmeter*

[1] Impacts of Metering on Residential Water Use in California by Tanverakul and Lee
[2] West Kern Water District Water Use Efficiency Project Final Report by Provost & Pritchard Consulting Group
[3] Personal communication: Ken Quandt to Mike Day of Provost & Pritchard, Feb 6, 2024.
[4] Refer to Westlands FY2021 WEEG Grant application - https://www.usbr.gov/watersmart/weeg/docs/2021/132_westlands_water_district_fy_21_weeg_508.pdf

Upgrades. This meter records flow rates and velocities with 5 digits of precision, has an 8-digit totalizer, and can store five years of data at 12-hour intervals, with customizable intervals. The Dura Mag's accuracy is ± 1% of measured value ±0.006 ft/s (±0.0018 m/s). Each Dura Mag meter comes with a calibration certification report to ensure its accuracy based on its calibration in a NIST traceable gravimetric test stand.

TechnoFlo's PV30 Vertical Upflow Tee Tube Meter will be utilized for vertical meter installations and is shown in Figure 6. *Proposed Flowmeter Upgrades*. The TechnoFlo has a 5-digit auto range indicator, an 8-digit totalizer, and is programmable with the ability to have passcode protected programmed settings. This meter has an accuracy of ± 2% of actual flow and ± 1% over reduced range, with a pressure rating of up to 150 pounds per square inch. Each TechnoFlo meter undergoes NIST traceable flow lab testing.

The specification sheets for these flowmeters are provided in Attachment 1.

- Will annual farm delivery volumes be reduced by more efficient and timely deliveries? If so, how has this reduction been estimated?
  Yes, the advanced metering project and extended and expanded NRCS promotion are expected to reduce annual farm deliveries as explained in the first bullet point above.

- How will actual water savings be verified upon completion of the project?
  Water delivery measurements by the California Department of Water Resources at Aqueduct turnouts will be compared for the first 6 months after project implementation versus a recent year with similar water supply and climate conditions. A reduction in water deliveries will verify water savings. WWA's grower turnout measurement dataset and crop evapotranspiration data compiled for WWA by LandIQ for the Irrigated Lands Regulatory Program will be secondary data sources to inform and factor regarding water savings and climatic conditions.

1.D.2 EVALUATION CRITERION B – RENEWABLE ENERGY (20 POINTS)

1.D.2.1 SUBCRITERION B.1 - IMPLEMENTING RENEWABLE ENERGY PROJECTS RELATED TO WATER MANAGEMENT AND DELIVERY (UP TO 20 POINTS)

- Describe the amount of energy capacity. *For projects that implement renewable energy systems, state the estimated amount of capacity (in kilowatts) of the system. Please provide sufficient detail supporting the stated estimate, including all calculations in support of the estimate.*
  No added energy capacity from renewable energy systems is proposed. However, the energy savings described below will reduce emissions of pollutants and greenhouse gases from natural gas fired power plants that provide some of the electricity to be conserved by the project.

- Describe the amount of energy generated. *For projects that implement renewable energy systems, state the estimated amount of energy that the system will generate (in kilowatt hours per year). Please provide sufficient detail supporting the stated estimate, including all calculations in support of the estimate. Please explain how the power generated as a result of this project will be used, including any existing or planned agreements and infrastructure.*

No added energy generation will result from the project.

- Describe any other benefits of the renewable energy project. *Please describe and provide sufficient detail on any additional benefits expected to result from the renewable energy project, including:*

  - How the system will combat/offset the impacts of climate change, including an expected reduction in greenhouse gas emissions.
    A renewable energy system is not proposed to combat/offset the impacts of climate change.

  - Expected environmental benefits of the renewable energy system.
    No expected environmental benefits due to a renewable energy system are expected.

  - Any expected reduction in the use of energy currently supplied through a Reclamation project.
    A reduction in the use of energy supplied through Reclamation's Central Valley Project's Tracy Pumping Plant is expected because a portion of the SWP water is pumped from California's Sacramento/San Joaquin River Delta at the Tracy Pumping Plant rather than through the SWP Banks Pumping Plant when conditions are favorable under the Coordinated Operations Agreement (https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/State-Water-Project/Files/Coordinated-Agreement-between-Reclamation-and-DWR_a_y20.pdf). The amount cannot be quantified without an extensive analysis by Reclamation and DWR.

  - Anticipated benefits to other sectors/entities.
    There are no anticipated benefits to other sectors/entities related to a renewable energy system.

  - Expected water needs, if any, of the system.
    There are no new expected water needs for a new renewable energy system.

1.D.2.2 SUBCRITERION B.2 – INCREASING ENERGY EFFICIENCY IN WATER MANAGEMENT (UP TO 6 POINTS)

- Describe any energy efficiencies that are expected to result from implementation of the water conservation or water efficiency project (e.g., reduced pumping).
  The proposed project will result in reduced pumping as described in more detail below.

  - If quantifiable energy savings are 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.*

    In-District Energy Savings
    Figures 2 and 3 show locations of pumps in each district used to convey water within the Districts to growers. Attachment 3 describes and details power use associated with water conveyed to the districts and the power the districts use to convey water to growers. The Districts use power from the Pacific Gas & Electric Company (PG&E).

A total energy savings of over 4,117,000 kWh/year are expected to result from the project based on the water conservation estimate. This is the sum of savings in the two Districts as follows:

LHWD: 1,667 af/y x 804 kWh/af = 1,340,268 kWh/year savings
BMWD 1,828 af/y x 1519 kWh/af = 2,776,732 kWh/year savings

Lost Hills Water District has eight Aqueduct turnouts, six of which rely on pumps as shown in Table 2. Water is also re-lifted by Pump Station 1R in Service Area 1.

Table 2. LHWD Water Supply Points via California Aqueduct Turnouts

Description	Pump or Gravity	Capacity (cfs)	Meter Type	Aqueduct Milepost
Turnout 1	Pump	225	Venturi	189.69
Turnout 2	Gravity	115	Venturi	191.18
Turnout 3	Gravity	60	Venturi	194.22
Turnout 4	Gravity	100	Venturi	196.75
Turnout 5	Both	400	Parshall Flume	202.05
Turnout 6	Pump	0.5	Not in Use	204.69
Turnout 7A	Pump	75	Parshall Flume	201.24
Turnout 7B	Pump	1.8	Magnetic	201.24
Turnout 8	Pump	0.3	Propeller	205.26

Berrenda Mesa Water District's distribution system has canals and pipelines that are fed by district pumps on the Main and Coastal branches of the Aqueduct as shown in Table 3. BMWD supplements PG&E power with solar power at its largest pump station (Pump Station A).

Table 3. BMWD Water Supply Points via California Aqueduct Turnouts

Description	Pump or Gravity	Capacity (cfs)	Meter Type	Aqueduct Branch
Mendiburu (Aqueduct) Pump Station (BM2)	Pump	59	Venturi	Main
Coastal (BM3)	Pump	36	Venturi	Coastal
Pump Station A (BM1)	Pump	332	Venturi and Magnetic	Coastal

Energy Use for Water Supply Deliveries to Districts

Most of the water supply utilized within LHWD and BMWD is surface water from the SWP delivered to the Districts through the California Aqueduct. State and Federal water project pumps are used to deliver water via the Aqueduct to the Districts. Supplemental

water is also purchased and conveyed via the Aqueduct when State Water Project allocations are limited.

The Districts also participate in water banking programs that store water underground in wet periods and recover it during dry periods. Figure 9 *Water Supply Pumps Map* shows locations of pumps used to convey water to the districts via the California Aqueduct and the locations of pumps used to convey, bank, recover, and return banked water to the districts.

The estimated energy use from these pumps to supply water to the Districts are analyzed in Attachment 4.

For LHWD, all turnouts come off the main branch of the Aqueduct, the energy use is estimated to be 569 kWh/AF.

For BMWD, 97% of its water supply is delivered through the Coastal Branch of the California Aqueduct and 3% off the main branch. BMWD's weighted average energy use is 852 kWh/AF.

Therefore, for the estimated energy use for water supply deliveries to LHWD and BMWD is:

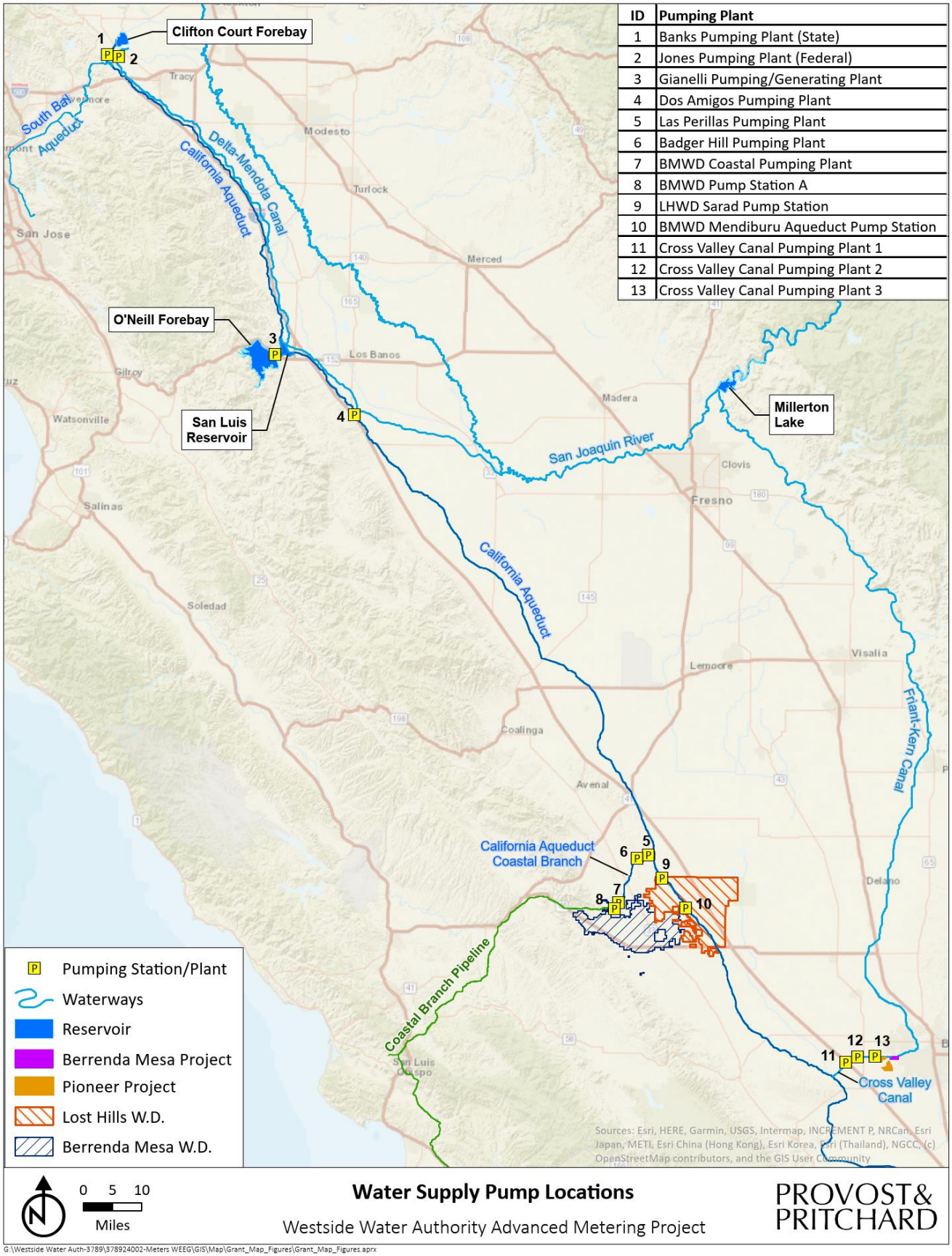
LHWD: 1,667 af/y x 569 kWh/af = 948,523 kWh/year savings
BMWD 1,828 af/y x 852 kWh/af = 1,557,456 kWh/year savings

Total Energy Savings

The total energy savings for both Districts are:

LHWD: 1,340,268 + 948,523 = 2,288,791 kWh/year savings
BMWD: 2,776,732 + 1,557,456 = 4,334,188 kWh/year savings

Total: 6,623,000 kWh/year savings



ID	Pumping Plant
1	Banks Pumping Plant (State)
2	Jones Pumping Plant (Federal)
3	Gianelli Pumping/Generating Plant
4	Dos Amigos Pumping Plant
5	Las Perillas Pumping Plant
6	Badger Hill Pumping Plant
7	BMWD Coastal Pumping Plant
8	BMWD Pump Station A
9	LHWD Sarad Pump Station
10	BMWD Mendiburu Aqueduct Pump Station
11	Cross Valley Canal Pumping Plant 1
12	Cross Valley Canal Pumping Plant 2
13	Cross Valley Canal Pumping Plant 3

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Figure 9. Water Supply Pump Locations

- How will the energy efficiency improvement combat/offset the impacts of climate change, including an expected reduction in greenhouse gas emissions.
  Pumps used to convey State Water Project water and PG&E's electric grid have a very high percentage of renewable power, but some of the power is provided by power plants that burn natural gas which generates greenhouse gas emissions. Therefore, project energy savings will result in reductions in greenhouse gases at those power plants. That reduction in greenhouse gas emissions will help combat/offset the impacts of climate change.

- 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?
  Current pumping requirements, sizes, and project impact are described above and detailed in Attachment 3 and 4.

- Please indicate whether your energy savings estimate originates from the point of diversion, or whether the estimate is based upon an alternate site origin.
  The estimate originates from the point of diversion from the Delta. It does not include on-farm pumping energy to be reduced by the project which is also substantial. Thus, energy savings are greater than estimated above.

- Does the calculation include any energy required to treat the water, if applicable?
  No. Treated water is not involved in the project.

- Will the project result in reduced vehicle miles driven, in turn reducing greenhouse gas emissions? *Please provide supporting details and calculations*.
  Yes, WWA staff will drive their vehicles less, reducing greenhouse gas emissions. Water meter readings obtained by staff driving to the meters and associated vehicle miles will be reduced by using telemetry to read meters. Staff drive approximately 4,500 miles per year to read meters. Based on 12 miles/gallon for typical district vehicles, this equates to about 375 gallons of gasoline use. Using the EPA calculator for carbon dioxide emissions, the WWA will reduce emissions by 3.3 metric tons of CO_2. (https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator#results).

- 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).
  No renewable energy components are proposed so no minimal energy savings/production are expected.

1.D.3 EVALUATION CRITERION C – OTHER PROJECT BENEFITS (15 POINTS)

1.D.3.1 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**.
  The San Joaquin Valley and customers of the State and Federal water projects are greatly impacted by drought and water scarcity. This is evident by the fact that SWP allocations have been 65% or less half of the time since 1996 and many times they have been much less, including some years with 5% allocations (see Historical Table A Allocations: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/State-Water-Project/Management/SWP-Water-Contractors/Files/Historical-SWP-allocations-1996-2024-022124.pdf).

- **Is the project in an area that is experiencing, or recently experienced, drought or water scarcity?**
  Yes, the recent drought from 2020 to 2022 was significant for the WWA districts. 2022 was especially difficult with a 0% SWP allocation for agricultural districts like WWA. More recently, while water supplies were full in 2023, the 2024 water year started poorly and initial allocations are only 10%. This follows 13 out of 16 years with allocations of 65% or less and many years with much less.

- **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 implementation of the Sustainable Groundwater Management Act (SGMA, https://water.ca.gov/programs/groundwater-management/sgma-groundwater-management) in California is expected to make it more difficult to obtain supplemental water on California's water market when State Water Project supplies are reduced. This is because groundwater has been a source of some market water and that is expected to be decreased as groundwater basins restrict pumping to combat overdraft.

  Furthermore, climate change is expected to reduce water supplies gradually and increase drought impacts (see https://water.ca.gov/Programs/All-Programs/Climate-Change-Program/Climate-Action-Plan and Chapter 5 of https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/All-Programs/Climate-Change-Program/Climate-Action-Plan/Files/CAP-III-Vulnerability-Assessment.pdf).

- **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 of service.**
  Interruptions of service are a big issue, as California's power grid has become less reliable due to lack of supply during peak periods, aging power infrastructure, and more frequent major fire and weather-related outages. Climate change is also a factor. See https://www.energy.ca.gov/data-reports/california-energy-planning-library/reliability.

- **Please describe how the project will directly address the concern(s) stated above.**
  Reducing water use and pumping energy demand will make the impacts of outages less severe.

- 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 more efficient use of water supplies?*
  Yes, having more accurate metering and real-time monitoring will help the WWA and growers better understand and address water losses. Water supplies are expected to be used more efficiently as a result.

- 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.
  Water conserved from the project would allow the Districts to purchase less water on the water market. That water would become available to other water buyers in California. In addition, WWA could bank supplemental supplies in its available groundwater banking projects.

  - Indicate the quantity of conserved water that will be used for the intended purpose(s).
    The project's water savings, estimated at 3,495 acre-feet per year, would be available.

  - Provide a description of the mechanism that will be used, if necessary, to put the conserved water to the intended use.
    California's water market is effectively summarized in the Public Policy Institute's "Just the Facts" paper on the topic (https://www.pacificresearch.org/wp-content/uploads/2017/06/1_JTF_WaterMarketJTF.pdf).

- Will the project assist States and water users in complying with interstate compacts?
  No, compliance with interstate compacts is not expected to be affected by the project.

- 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 reducing the water related crisis and conflict over water in California through its water conservation. The water crisis in California's Central Valley is well described by Action News on YouTube (https://www.youtube.com/watch?v=IzIb17uJtMU).

1.D.3.2 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*.
Threatened and endangered species would benefit if wildlife area managers purchase more water on the California water market as a result of the project, but that is unlikely.

- 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.).*
  The project is not expected to cause water to remain in the system for longer periods of time.

- Will the proposed project reduce the likelihood of a species listing or otherwise improve the species status?
  No. The project's benefits to threatened and endangered species are not significant enough to expect this to occur.

- Please describe any other ecosystem benefits as a direct result of the project.
  Minor ecosystem benefits should result from the project's reduction in greenhouse gas emissions as climate change is impacting endangered species along with its human impacts (see https://www.iucn.org/resources/issues-brief/species-and-climate-change).

1.D.3.3 CLIMATE CHANGE

- Describe how the project addresses climate change and increases resiliency. *For example, does the project help communities adapt to bolster drought resilience?*
  The project helps WWA address the water supply impacts of climate change and increase WWA's resiliency to withstand droughts.

- Does the project seek to improve ecological resiliency to climate change?
  No, that is not a project objective, but minor ecological benefits occur.

- Does the proposed project seek to reduce or mitigate climate pollutions such as air or water pollution?
  Yes, air quality should be improved in the areas near the natural gas power plants that provide power into California's power grid as a result of the project's energy savings.

- Does the proposed project include green or sustainable infrastructure to improve community climate resilience?
  No.

- Does the proposed project contribute to climate change resiliency in other ways not described above?
  No.

1.D.4 EVALUATION CRITERION D – DISADVANTAGED COMMUNITIES, INSULAR AREAS, AND TRIBAL BENEFITS (15 POINTS)

1.D.4.1 SUBCRITERION D.1 - DISADVANTAGED COMMUNITIES

- Identify any disadvantaged communities that will benefit from the proposed project.
  According to the Climate and Economic Justice Screening Tool, Berrenda Mesa and Lost Hills are located within Tract Number 06029004500 and are considered disadvantaged

communities. **Figure 8** *Disadvantaged Communities Map* shows the district boundaries and Lost Hills, a severely disadvantaged community (SDAC) in the area.

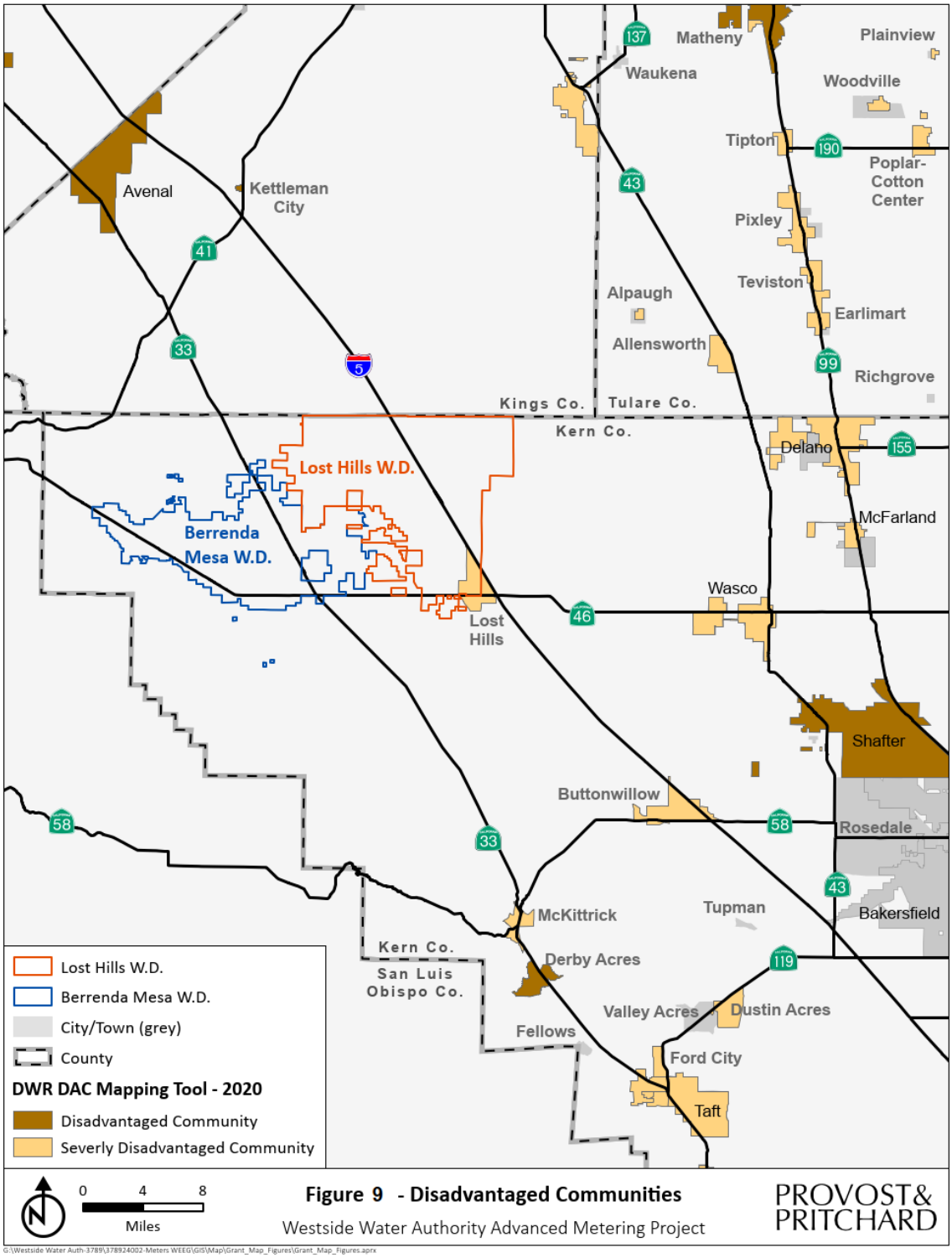

Figure 10. Disadvantaged Communities Map

- 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?
Implementation of the proposed project would allow the WWA to improve and increase crop production, benefiting the disadvantaged communities in the area by helping preserve workers' jobs who live and work within these communities.

1.D.4.2 SUBCRITERION D.2 – TRIBAL BENEFITS

None of the criterion listed under this section are applicable to the proposed project as there are no tribes in the area.

1.D.5 EVALUATION CRITERION E – COMPLEMENTING ON-FARM IRRIGATION IMPROVEMENTS (8 POINTS)

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.
  Farmers in LHWD and BMWD have long been at the forefront of implementing practices to improve on-farm efficiencies including universal application of micro-irrigation, use of soil moisture, plant stress, and soil chemistry monitoring along with weather-based irrigation scheduling, and use of remote sensing technology. The districts are active members of the Kern Resource Conservation District which runs a Mobile Lab program to assist farmers with irrigation system evaluations and soil moisture monitoring. Results of the irrigation system evaluations show distribution uniformity and efficiency are high. Some of the on-farm reservoirs and ditches are unlined.

  - Provide a detailed description of the on-farm efficiency improvements.
    Some growers in LHWD and BMWD have expressed an interest in learning what the losses in their on-farm reservoirs are and would like to compare readings from upgraded district turnouts versus readings from their on-farm magnetic flowmeters downstream of the reservoirs to estimate reservoir losses, then evaluate lining costs versus benefits. Additionally, the AMR/AMI system will allow for daily tracking of water use, which could assist with irrigation scheduling to better match the crop agronomic demands and limit deep percolation of applied water.

  - Have the farmers requested technical or financial assistance from NRCS for the on-farm efficiency projects, or do they plan to in the future?
    Many of the growers in the districts have previously requested technical and financial assistance from the NRCS for conservation practices and want to evaluate reservoir losses versus costs before requesting assistance to line reservoirs.

  - If available, provide documentation that the on-farm projects are eligible for NRCS assistance, that such assistance has or will be requested, and the number or percentage of farms that plan to participate in available NRCS programs.

Links to NRCS' Conservation Practice Standards and Programs & Initiatives are given below. NRCS's EQIP Program includes incentives for geomembrane or other lining to reduce seepage losses from reservoirs.
Conservation Practice Standards | Natural Resources Conservation Service (usda.gov)
Programs & Initiatives | Natural Resources Conservation Service (usda.gov)

There are about 65 privately owned reservoirs in BMWD and 40 in LHWD, and many are believed to not have an impermeable liner, so there may be an opportunity for some landowners to receive EQIP funding from NRCS to line them. At the very least landowners will be able to estimate losses in their reservoirs and implement a lining project based on the economic benefits in reducing losses.

- Applicants should provide letters of intent from farmers/ranchers in the affected project areas.
  WWA does not have access to letters of intent from affected farmers/ranchers and NRCS staff treat such letters as confidential information and will not provide copies of them if requested through the NRCS.

- Describe how the proposed WaterSMART project would complement any ongoing or planned on-farm improvement.
  The project will complement the efforts of growers to improve water measurement and real-time monitoring plus reservoir lining projects. The reservoirs between district meters and on-farm meters further complicate efforts to gain reliable information that allows growers to pursue conservation projects related to reducing losses.

  - 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.*
    Funding of this project through WaterSMART will help WWA and NRCS staff extend the promotion of NRCS' programs in LHWD and expand it to BMWD. Installation of magnetic smart meters upstream of reservoirs will help further promote the use of impervious linings in on-farm reservoirs that currently do not have them. It will also help the WWA and NRCS to promote their water conservation programs.

- Describe the on-farm water conservation or water use efficiency benefits that are expected to result from any on-farm work.
  Since water lost to seepage are known to be lost to salty shallow groundwater aquifers and much energy is involved in pumping water, water and energy conservation benefits would be expected to result from funding the NRCS Conservation Practices described above.

  - 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.*
    Based on confidential information the Northwest Kern Resource Conservation District provides from it soil moisture monitoring and mobile lab programs in LHWD and BMWD, growers are known to have excellent on-farm conservation practices and high irrigation efficiency. Therefore, room for improvement is a relatively small percentage. Thus, the

assumption of 2% savings for the project takes that into account, and factors both expected District and on-farm savings.

- 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 projects.

  Figure 1, 2, and 3 are maps showing the locations and service areas for BMWD and LHWD.

1.D.6 EVALUATION CRITERION F – READINESS TO PROCEED (8 POINTS)

- Identify and provide a summary description of the major tasks necessary to complete the project.
  The proposed project's major tasks are discussed below:

Task 1 – Project Administration and Coordination: Communication and contract management with USBR. Request budget and contract revisions, if needed. Manage consultants and vendors. Organize and attend progress meetings with USBR, WWA, and the districts.

Task 2 – Environmental and Cultural Resources Compliance: Assist the USBR in complying with the National Environmental Policy Act. Comply with the California Environmental Quality Act (CEQA).

Task 3 – Consulting Engineering and Planning: The consultant will be included for support throughout the replacement of existing meters with AMI units and associated hardware, software, programming, and training.

Task 4 – Supplier furnishing of meters and associated hardware: The suppliers will furnish the flowmeters along with associated hardware and software to the districts.

Task 5 – Flowmeter Installation: District staff will install the new flowmeters and associated hardware.

Task 6 – AMR/AMI System Implementation: The District will contract with Mueller Systems to procure the AMR/AMI system and have a contractor install the communications equipment. Mueller Systems will program and implement the software system package and startup the system.

Task 7 – Performance Measure Validation: District staff and the consulting engineer will compare water delivery records from the California Aqueduct (DWR meter data) to LHWD and BMWD in the six months following meter installation versus the same six months in a prior year with similar water supply and climatic conditions. The difference will be taken as water savings after any adjustments are made to account for other factors.

Task 8 - Reporting: The consulting engineer will prepare semi-annual reports and perform a validation of performance measures associated with the project's water savings which will be included in a final project report to Reclamation.

- Describe any permits that will be required, along with the process for obtaining such permits.
  No required permits were identified and there are no anticipated permits and approvals needed for the tasks performed under the proposed project.

- Identify and describe any engineering or design work performed specifically in support of the proposed project.
  The advanced metering project is not expected to require engineering and design work by consultants because the new meters replace the old meters without major modifications. Engineering and design of the AMR/AMI system will be provided by Mueller Systems, and that cost is included in their proposal to WWA.

- Describe any new policies or administrative actions required to implement the project.
  No new policies or administrative actions are expected. WWA staff will need to work with Mueller Systems to integrate the AMR/AMI system into WWA's meter data management system.

- 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.
  WWA and Provost & Pritchard Consulting Group (P&P) staff have been working with McCrometer and Mueller Systems to specify the equipment necessary for the project since 2022. No additional design work is anticipated.

- Please also include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates. Was the expected timeline for environmental and cultural compliance discussed with the local Reclamation Regional or Area Office?

Project Schedule

The estimated project schedule is shown in Table 4 below. This schedule assumes that a categorical exemption and exclusion will be sufficient environmental compliance for NEPA/CEQA. Based on the limited installation impacts of the replacement meters (extremely limited minor ground disturbances anticipated), the environmental compliance requirements are determined to require minimal effort. The expected timeline for environmental and cultural compliance was not discussed with the local Reclamation Regional or Area Office. Note that no ground disturbing activities will occur until NEPA compliance is achieved.

Table 4. Estimated Project Schedule

Westside Water Authority Advanced Metering

		2024												2025												2026											
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Task 1	Project Administration and Coordination						◆					◆																									
Task 2	Environmental and Cultural Resources Compliance							CEQA						NEPA																							
Task 3	Consulting Engineering and Planning																																				
Task 4	Supplier Furnishing of Meters and Associated Hardware																																				
Task 5	Meter Installation																																				
Task 6	AMR/AMI System Implementation																																				
Task 7	Performance Measure Validation																																				
Task 8	Reporting																																				
	Semi-annual Monitoring Reports																																				
	Final Report																																				

◆ Notice of Award Date
◆ Contract Start Date

LHWD Meters
BMWD Meters

1.D.7 EVALUATION CRITERION G – COLLABORATION (5 POINTS)

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?
  Growers in LHWD and BMWD support the project because it will improve metering accuracy and help them with on-farm irrigation management. They have been requesting the project and supporting it. The boards of directors of the two districts (Board Of Directors - Lost Hills Water District (lhwd.org) and Board Of Directors | Berrenda Mesa Water District (bmwd.org) consist of grower representatives who approve of the project.

  WWA includes two neighboring agencies (Dudley Ridge Water District and Belridge Water Storage District) that will consider implementing a similar project in the future based on the experience of BMWD and LHWD.

  The Kern Integrated Regional Water Management (IRWM) Group supports the project and has provided a letter of support.

  The NRCS has been collaborating with Westside Water Authority on water conservation projects and is interested in extending and expanding the EQIP promotion.

- What is the significance of the collaboration/support?
  There is both internal and external support for the project (grower and involved agencies), so it is more likely to be successful.

- Will this project increase the possibility/likelihood of future water conservation improvements by other water users?
  Yes, other members of WWA, Dudley Ridge Water District (Board of Directors (dudleyridgewd.org) and Belridge Water Storage District (Board Of Directors - Belridge Water Storage District (belridgewsd.com))will be likely to make similar water conservation improvements in the future once the project is successful as they share the same WWA staff and have many common growers with LHWD and BMWD.

- Will the project benefit multiple sectors and/or users (e.g., agriculture, municipal and industrial, environmental, recreation, or others)?
  The project will primarily benefit agricultural users. Other water users whose water flows through the Delta (Bay Delta (ca.gov) including municipal, industrial, environmental, and recreational will receive benefits to the extent those users purchase water made available on the water market by the project.

- Please attach any relevant supporting documents (e.g., letters of support or memorandum of understanding).
  A letter of support was received from the Kern IRWM Group (see **Attachment 5**).

1.D.8 EVALUATION CRITERION H – NEXUS TO RECLAMATION (4 POINTS)

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

- Does the applicant have a water service, repayment, or operations and maintenance (O&M) contract with Reclamation?
  LHWD and BMWD do not have any of those contracts directly (see answer to next question).

- If the applicant is not a Reclamation contractor, does the applicant receive Reclamation water through a Reclamation contractor or any other contractual means?
  - KCWA, who supplies water to LHWD and BMWD, obtains annual contracts for Friant Division Central Valley Project (CVP) floodwater (Section 215 water) from Reclamation. This water, if available, is delivered to water banks that LHWD and BMWD participate in.
  - KCWA frequently performs transfers and exchanges with other water agencies for Friant CVP water.
  - Friant CVP water is delivered to the Kern County area through a series of facilities including the Friant-Kern Canal of the Friant CVP Division.

- Will the proposed work benefit a Reclamation project area or activity?
  Yes. As detailed above, water conserved provides a direct benefit to Reclamation's Central Valley Project.

- Is the applicant a Tribe?
  No. The project does not involve any Native American Tribes.

(E) 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).

Performance measures will include a comparison of Aqueduct water delivery measurements to LHWD and BMWD for six months after project completion versus the same six months in a recent year with similar water supply and climatic conditions. Differences will be taken as water savings resulting from the project, after any adjustments are made for other factors. WWA's grower turnout measurement dataset and ETa data compiled for WWA by LandIQ for the Irrigated Lands Regulatory Program will be secondary data sources to inform and factor regarding water savings and climatic conditions. Energy savings will be based on water savings multiplied by the kWH/ac-ft factor derived in Attachment 3 and 4.

2 BUDGET NARRATIVE

A project budget was prepared by Provost & Pritchard Consulting Group (P&P) in accordance with engineering standard cost estimating procedures.

Cost information was obtained from the following:

- McCrometer provided quotes for furnishing magnetic flowmeters.

- Technoflo provided quotes for furnishing the vertical upflow tee tube flowmeters.
- Mueller Systems provided a quote for the Mi.Net telemetry system and the AMR/AMI system including setup and programming.
- Provost & Pritchard estimated consultant time for environmental compliance, project and grant administration based on its experience with prior similar projects.

6a. Personnel. No reimbursement will be sought for WWA salaries and wages for their time on the project, as they are covered under the Districts' and WWA's operating budget.

6b. Fringe Benefits. No reimbursement will be sought for WWA's fringe benefits associated with the project, as fringe benefits are covered under the Districts' and WWA's operating budget.

6c. Travel. No District or WWA employee travel costs will be sought for reimbursement. The cost estimate does not include any per diem or lodging costs.

6d. Equipment. No reimbursement will be sought for WWA equipment usage. Only standard equipment such as tools or work vehicles are necessary, all of which WWA owns.

6e. Materials and Supplies. No reimbursement will be sought for WWA materials and supplies.

6f. Contractual.

Mueller Systems Contractual Items:

As listed in Attachment 5, these Items include:

- AMI Software and Network Connectivity – This will include the first-year cost to host the endpoints on Muller's platform. $742
- Network Cellular Collector – This cost includes the first-year cost of network connectivity fees. $2,407
- Project Management Fees – Consultant costs to assist WWA manage the Project $15,000
- Customer Interface System (CIS) File Interface – This work consists of integrating the Mueller platform with the WWA water management system. $9,100
- File Transfer Protocol – Mueller integration with WWA water system. $2,809
- Software Training – One day of training with WWA staff. $1,876
- AMI Maintenance Agreement and Extended Warranty – this includes the Collector and Repeater stations, and radios. $2,302

Engineering and Environmental Consultant:

WWA will contract with a consultant experienced with similar work for assisting with environmental (CEQA/NEPA) compliance and the management of the project and contract with USBR. This will include validating the performance measures and preparing reports. The estimate for these services has been incorporated into the Budget Proposal and was provided by Provost & Pritchard Consulting Group who have experience doing this class of work.

Environmental and Regulatory Compliance: The costs included under this category are a part of the contractual work that will be performed by the Districts' consultant and the U.S Bureau of Reclamation. Based on budgets from prior WEEG funded projects a budget of $10,000 is assumed for the U.S Bureau of Reclamation's environmental services costs for NEPA compliance on a

project without ground disturbance. The total consultant estimated cost is $15,000. These were estimated by Provost & Pritchard Consulting Group (based upon typical costs for comparable projects). Provost & Pritchard will work with WWA and Reclamation staff to prepare CEQA and NEPA documents, and to assist with required notices and consultations. This category's low cost is because installing aboveground flowmeters qualifies for a categorical exemption under CEQA and most likely a categorical exclusion under NEPA (with Reclamation being the lead federal agency). This work will consist of:

- Coordination with USBR staff regarding project documentation and format will occur.
- Preparing the Categorical Exemption/Categorical Exclusion checklists. The Categorical Exemption will be prepared in accordance with CEQA Guidelines Section 15302(c) and the Categorical Exclusion will be prepared in accordance with 516 DM 14.5 D(1) of Federal Regulations.
- Conducting a Fish and Wildlife database search to look for the presence of any federally sensitive biotic resources.
- Conducting a search of the National Wetlands Inventory.
- Conducting a Cultural Resources Records search for any sensitive historic resources.

Grant Administration and Reporting: Grant administration and periodic (semi-annual) and a draft and final project report will be prepared by WWA staff and its consulting engineer. We have budgeted $25,000 for consulting engineer's costs for reporting and are based on their experience with other USBR grants. WWA costs for reporting will not be sought for reimbursement, as those costs are included in the WWA's operating budget.

6g. Construction

Construction Materials:

The total estimate of $909,989 for the flowmeters is based on the quotes received from McCrometer and TechnoFlo as shown in the budget proposal (refer to Table 5). WWA received information from other water meter competitors and found them to have similar systems with similar costs. McCrometer and TechnoFlo were selected since the WWA has had good experience with support from these vendors and has standardized on these products. With standardized meters, WWA can maintain a single set of replacement parts and staff are trained in these manufacturers' installation and repair procedures.

There are materials and supplies costs for associated hardware and miscellaneous accessories required when replacing a water meter. These parts include bolts and nuts, gaskets, and make-up pipe spools to span the distance of the original meter length. The costs for these items are included in the individual meter budget line items. The total estimate for these costs is $98,324 (refer to Table 5).

Table 5. Flowmeters Construction Materials Estimate

		Unit Cost			Total Cost		
	Qty.	Meter Cost	Matl's and Supplies	Total Unit Cost	Total Meter Cost	Total Matl's and Supplies Cost	Total Cost
BMWD							
Horizontal Meter							
4" Dura Mag	**1**	$3,977	$420	**$4,397**	$3,977	$420	**$4,397**
6" Dura Mag	**1**	$4,277	$470	**$4,747**	$4,277	$470	**$4,747**
8" Dura Mag	**3**	$4,793	$520	**$5,313**	$14,379	$1,560	**$15,939**
10" Dura Mag	**54**	$5,955	$680	**$6,635**	$321,570	$36,720	**$358,290**
12" Dura Mag	**9**	$6,491	$710	**$7,201**	$58,419	$6,390	**$64,809**
14" Ultra Mag	**0**	$8,363	$1,309	**$9,672**	$0	$0	**$0**
Vertical Upflow Meter							
10" TechnoFlo PV30	**6**	$4,188	$145	**$4,333**	$25,128	$870	**$25,998**
12" TechnoFlo PV30	**5**	$4,695	$157	**$4,852**	$23,475	$785	**$24,260**
Subtotal	**79**				$451,225	$47,215	**$498,440**
LHWD							
Horizontal Meter							
4" Dura Mag	**1**	$3,977	$420	**$4,397**	$3,977	$420	**$4,397**
6" Dura Mag	**1**	$4,277	$470	**$4,747**	$4,277	$470	**$4,747**
8" Dura Mag	**1**	$4,793	$520	**$5,313**	$4,793	$520	**$5,313**
10" Dura Mag	**63**	$5,955	$680	**$6,635**	$375,165	$42,840	**$418,005**
12" Dura Mag	**7**	$6,491	$710	**$7,201**	$45,437	$4,970	**$50,407**
14" Ultra Mag	**1**	$8,363	$1,309	**$9,672**	$8,363	$1,309	**$9,672**
Vertical Upflow Meter							
10" TechnoFlo PV30	**4**	$4,188	$145	**$4,333**	$16,752	$580	**$17,332**
12" TechnoFlo PV30	**0**	$4,695	$157	**$4,852**	$0	$0	**$0**
Subtotal	**78**				$458,764	$51,109	**$509,873**
Total	**157**				$909,989	$98,324	**$1,008,313**

Mueller Systems has provided a quote for its AMR/AMI equipment as detailed in Attachment 5. The equipment consists of Radio Node Endpoints (at each meter), Collector and Repeater stations, and other communications equipment. Note that more endpoints are needed than the 157 new meters to integrate existing upgraded meters in the water systems into the AMI. The cost for this item is $77,302.

Construction/Contractual:

Within Mueller System's quote, there is a Construction Contracting related item for installation of the Collector and Repeater stations. The cost for this work is estimated to be $20,885.

6h. Indirect Costs. No indirect costs are anticipated.

6j. Other Expenses. No other expenses are anticipated. No land purchases or easements will be required for the project.

Total Cost. The total estimated project cost is $1,190,736 with a requested grant of $500,000 and cost share of $690,736 that will be split between BMWD and LHWD. Both Districts have sufficient reserves available in their budgets to fund any cost overruns or unforeseen costs.

3 ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

Please answer the following questions to the best of your knowledge. If any question is not applicable to the project, please explain why. The application should include the answers to:

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

  The project is not expected to affect the surrounding environment because the work will all be done above ground and will be completed within existing grower turnout footprints using existing access roads and parking areas. The project involves removing the existing propeller water meters and installing the new flow meters, all above ground. At some locations, there may be minor ground disturbance (up to 6-inches in depth) to remove and reinstall bolts at flanges. There will be no other modification or installation of turnouts, gates, or other infrastructure. Under no circumstances will any ground-disturbing activity take place before environmental and cultural resources compliance is complete and Reclamation explicitly authorizes work to proceed.

  Habitat
  Based on our knowledge of the surrounding area, the project is within previously disturbed areas in an agricultural setting and will avoid disturbing any areas with appropriate vegetation that provides habitat, supports wildlife populations, or provides a corridor between wildlife populations.

  Air
  The project involves very minor ground-disturbing activities at some meter locations. Dust generation will be minimal. A temporary increase in emissions from traveling existing access roads will occur due to WWA's staff vehicles for meter removal and installation. However, the effects would be negligible, and air quality would improve with less travel to and from meters for readings upon project completion.

  Water
  The project will reduce water quality degradation and improve water supply reliability. Fresh surface water currently lost through seepage and excess deep percolation blends with the highly saline groundwater, making the water unusable. The project reduces those losses by facilitating improved water management in District and on-farm irrigation systems.

- 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?
  Recent biological evaluations completed for projects near the Proposed Project indicated the absence of Natural Communities of Special Concern and Designated Critical Habitat. There was evidence of the presence of some Wildlife Movement Corridors in these other project areas. Work will take place above ground within existing grower turnout footprints using existing access roads and parking areas. The Project area is highly disturbed with daily agricultural activities, routine weed abatement, grounds maintenance, and District staff regularly accessing meters for maintenance and reading. Any areas with suitable habitat for wildlife including listed species will be avoided.

- 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.*
  No riparian habitat, wetlands or other sensitive natural communities are present in the project areas. Work will take place above ground within existing grower turnout footprints using existing access roads and parking areas. There will be minimal ground disturbance with the implementation of the Project.

- When was the water delivery system constructed?
  The water delivery systems were constructed in the late 1960s for both Districts.

- Will the proposed project result in any modification of or effects to individual features of an irrigation system (e.g., headgates, canals, or flumes)? *If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.*
  The project involves removing the existing water meters and installing the new meters, all above ground. There will be no other modification or installation of turnouts, gates, or other infrastructure. Thus, the project does not include extensive alterations or modifications to the irrigation system's features. The project will improve water quality and reliability.

- Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places?
  Section 106 of the National Historic Preservation Act of 1966 (NHPA) indicates that buildings, structures, or features over 50 could be eligible for listing on the National Register of Historic Places database. During the CEQA process, a review of cultural resources databases will be done and of the project's effects related to cultural and historic resources. Aside from meter replacements, the project does not propose to alter any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places.

- Are there any known archeological sites in the proposed project area?
  There are no known archeological sites in the proposed project area. No ground disturbance is proposed that might disturb any unknown archeological sites.

- **Will the project have a disproportionate high and adverse effect on any communities with environmental justice concerns?**
  The community of Lost Hills is considered an SDAC as identified in *Section 1.D.4.1*. The project is not anticipated to have any adverse effects on this community. Rather, this project will contribute to addressing local environmental injustices resulting from poor groundwater quality and limited surface water availability that threaten the quality of life and workers' jobs.

- **Will the project limit access to, and ceremonial use of, Indian sacred sites or result in other impacts on Tribal lands?**
  Tribal lands and Indian sacred sites are absent in the project area according to the Advisory Council on Historic Preservation.

- **Will the project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?**
  The existing turnout and meter locations are under continuous operation and maintenance and vegetation growth is controlled and abated. The United States Department of Agriculture *National Invasive Species Information Center* developed Best Management Practices to Prevent the Introduction and Spread of Invasive Species, and the project will employ these measures to reduce the introduction and spread of invasive weeds. In addition, the improved water reliability may help to prevent land fallowing in dry years when noxious and non-native species could spread onto farmland and adjacent areas.

4 REQUIRED PERMITS OR APPROVALS

You should state in the application whether any permits or approvals are necessary and explain the plan for obtaining such permits or approvals.

BMWD and LHWD own and operate their water delivery systems and do not require special permits to modify them. There are no anticipated permits and approvals needed for the proposed project other than requiring the approval of environmental documentation pursuant to both California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA). No local permits will be required as there will be no ground-disturbing activities. No State or Federal facilities will be modified as part of the project. No other State or Federal permits are anticipated to be necessary. If any required permits are identified, they will be obtained prior to meter installation.

5 OVERLAP OR DUPLICATION OF EFFORT STATEMENT

Applicants should provide a statement that addresses if there is any overlap between the proposed project and any other active or anticipated proposals or projects in terms of activities, costs, or commitment of key personnel. If any overlap exists, applicants must provide a description of the overlap in their application for review.

Applicants should also state if the proposal submitted for consideration under this program does or does not in any way duplicate any proposal or project that has been or will be submitted for funding consideration to any other potential funding source—whether it be Federal or non-Federal. If such a circumstance exists, applicants must detail when the other duplicative

proposal(s) were submitted, to whom (Agency name and Financial Assistance Program), and when funding decisions are expected to be announced. If at any time a proposal is awarded funds that would be duplicative of the funding requested from Reclamation, applicants must notify the NOFO point of contact or the Program Coordinator immediately.

WWA is not aware of any overlap between the proposed project and any other active or anticipated proposals or projects in terms of activities, costs, or commitment of key personnel. The project is part of WWA's Capital Improvement Plan (CIP), a planning effort that has included a review of other activities, costs, and key personnel so that projects included in the CIP avoid such duplication of effort.

6 CONFLICT OF INTEREST DISCLOSURE STATEMENT

Per 2 CFR §1402.112, "Financial Assistance Interior Regulation" applicants should state in the application if any actual or potential conflict of interest exists at the time of submission. Submission of a conflict-of-interest disclosure or certification statement is mandatory prior to issue of an award.

(A) APPLICABILITY

This section intends to ensure that non-Federal entities and their employees take appropriate steps to avoid conflicts of interest in their responsibilities under or with respect to Federal financial assistance agreements.

In the procurement of supplies, equipment, construction, and services by recipients and by sub recipients, the conflict-of-interest provisions in 2 CFR§200.318 apply.

(B) NOTIFICATION

Non-Federal entities, including applicants for financial assistance awards, must disclose in writing any conflict of interest to the DOI awarding agency or pass- through entity in accordance with 2 CFR §200.112.

Recipients must establish internal controls that include, at a minimum, procedures to identify, disclose, and mitigate or eliminate identified conflicts of interest. The successful applicant is responsible for notifying the Financial Assistance Officer in writing of any conflicts of interest that may arise during the life of the award, including those that have been reported by sub recipients.

WWA does not have actual or potential conflict of interest associated with this project and has established internal controls to identify, disclose, and mitigate or eliminate identified conflicts of interest that may arise if awarded a grant.

(C) RESTRICTIONS ON LOBBYING

Non-Federal entities are strictly prohibited from using funds under a grant or cooperative agreement for lobbying activities and must provide the required certifications and disclosures pursuant to 43 CFR §18 and 31 USC §1352.

(D) REVIEW PROCEDURES

The Financial Assistance Officer will examine each conflict-of-interest disclosure on the basis of its particular facts and the nature of the proposed grant or cooperative agreement and will determine whether a significant potential conflict exists and, if it does, develop an appropriate means for resolving it. Enforcement. Failure to resolve conflicts of interest in a manner that satisfies the government may be cause for termination of the award. Failure to make required disclosures may result in any of the remedies described in 2 CFR §200.339, Remedies for noncompliance, including suspension or debarment (see also 2 CFR §180).

WWA has not, nor will use any awarded funds for lobbying activities.

7 UNIFORM AUDIT REPORTING STATEMENT

All U.S. states, local governments, federally recognized Indian Tribal governments, and non- profit organizations expending $750,000 USD or more in Federal award funds in the applicant's fiscal year must submit a Single Audit report for that year through the Federal Audit Clearinghouse's Internet Data Entry System. U.S. state, local government, federally recognized Indian Tribal governments, and non-profit applicants must state if your organization was or was not required to submit a Single Audit report for the most recently closed fiscal year. If your organization was required to submit a Single Audit report for the most recently closed fiscal year, provide the Employer Identification Number (EIN) associated with that report and state if it is available through the Federal Audit Clearinghouse website.

8 CERTIFICATION REGARDING LOBBYING

Applicants requesting more than $100,000 in Federal funding must certify to the statements in 43 CFR §18, Appendix A. If this application requests more than $100,000 in Federal funds, the authorized official's signature on the appropriate SF-424 form also represents the applicant's certification of the statements in 43 CFR § 18, Appendix A.

The submission of WWA's SF-424 form certifies to the statements in 43 CFR §18, Appendix A.

9 SF-LLL: DISCLOSURE OF LOBBYING ACTIVITIES (IF APPLICABLE)

If applicable, a fully completed and signed SF-LLL: Disclosure of Lobbying Activities form is required if the applicant has made or agreed to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. This form cannot be submitted by a contractor or other entity on behalf of an applicant.

WWA has not conducted lobbying activities related to this application. Thus an SF-LLL Form is not included.

10 LETTERS OF SUPPORT

You should include any letters from interested stakeholders supporting the proposed project. To ensure your proposal is accurately reviewed, please attach all letters of support as an appendix. Letters of support received after the application deadline for this NOFO will not be considered in evaluating your proposed project. These letters do not count within the 125 page maximum.

A letter of support from the Kern Integrated Regional Water Management Group was received and is attached as Attachment 6.

11 OFFICIAL RESOLUTION

The WWA will provide an official resolution prior to award if selected for funding.

12 LETTERS OF FUNDING COMMITMENT

The WWA will provide a letter of funding commitment for its cost share prior to award if selected for funding.

13 UNIQUE ENTITY IDENTIFER AND SYSTEM FOR AWARD MANAGEMENT

WWA's Unique Entity Identifier (UEI) Number is DAE2L9D5UXN4

WWA is registered with the System for Award Management (SAM)

KERN IRWMP
Integrated Regional Water Management Plan

February 21, 2024

Mark Gilkey
Executive Director
Westside Water Authority
5555 California Avenue, Suite 209
Bakersfield, CA 93309

Re: Letter of Support for Westside Water Authority Grant Application for the Westside Water Authority Advanced Metering Project under the USBR WaterSMART Water and Energy Efficiency Grant Program, No. R24AS00052

Mr. Gilkey:

On behalf of the Kern Integrated Regional Water Management Group, we would like to offer its support and encourage Reclamation to strongly consider funding the proposed Westside Water Authority (WWA) Advanced Metering Project submitted on behalf of the Lost Hills Water District and Berrenda Mesa Water District. WWA has informed us about their project to install new magnetic flow meters and advanced metering infrastructure within the two water systems that would provide automatic meter readings to help improve the conservation of water that is currently lost to seepage and increase the beneficial use of water. We were also informed about additional benefits the project would provide such as increased energy savings, greenhouse gas reduction, promotion of Natural Resources Conservation Service programs such as the Environmental Quality Incentive Program. The region has been hard hit from the drought and curtailments in water supplies due to regulatory impacts.

This project aligns with the WWA's water management goals to implement conservation and achieve long-term sustainability. The Kern Integrated Regional Water Management Group recognizes the value of water infrastructure projects that increase water management sustainability and water supply reliability.

Sincerely,

Eric McDaris
Co-Chairman

On Behalf of the Kern IRWMP Executive Committee