

# Rubidoux Community Services District Advanced Metering Infrastructure Implementation Project

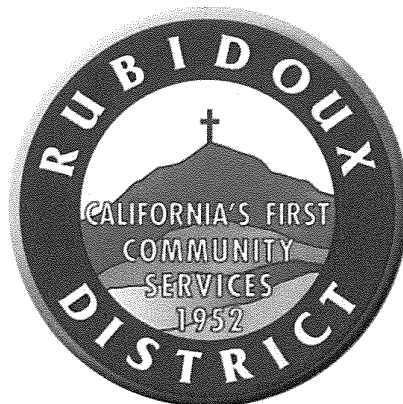
WaterSMART: Water and Energy Efficiency Grants for FY 2023

R23AS00008

July 28, 2022

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# Section 1 Technical Proposal

## 1.1 Executive Summary

July 28, 2022

Rubidoux Community Services District

City of Jurupa Valley

Riverside County, California

Category A

Funding Group: II

Grant Funding Requested: \$1,500,000

Local Matching Funds: \$2,840,747

Project Duration: 36 months

Estimated Project Completion Date: February 28, 2026

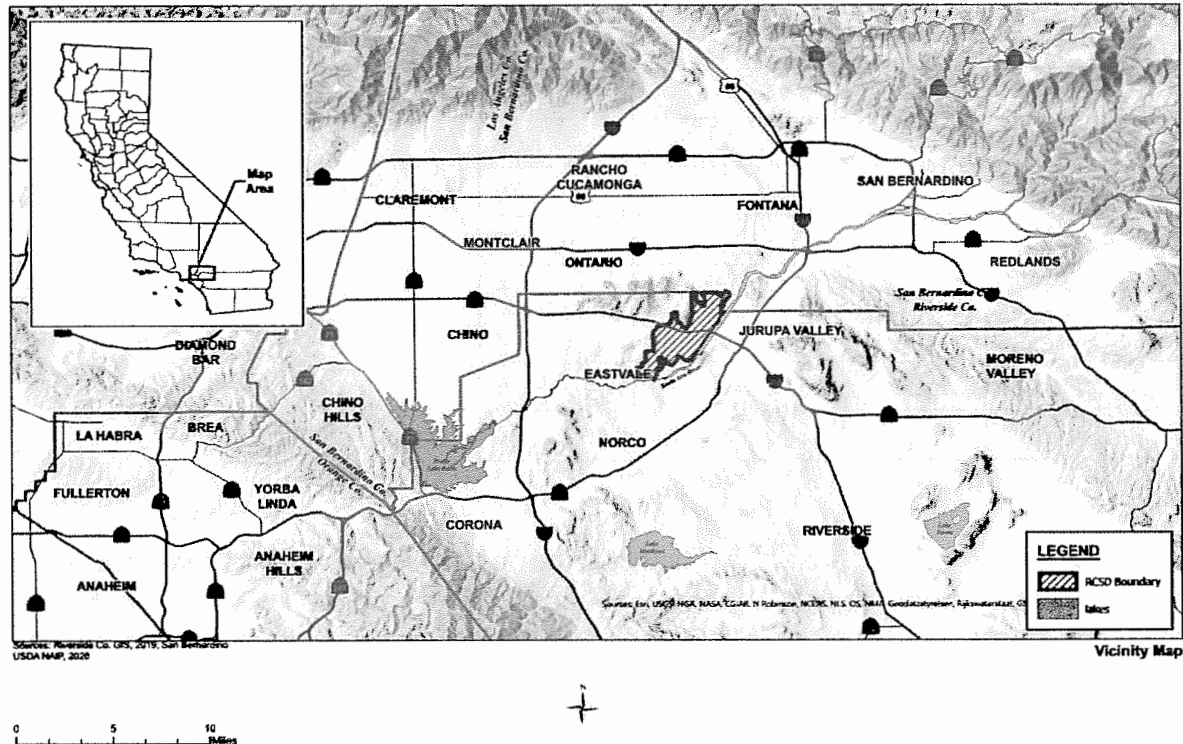
The Rubidoux Community Services District (“District”) located in the City of Jurupa Valley, is seeking to increase water use efficiency within its water service area with an Advanced Metering Infrastructure (AMI) project to convert current standard read meters to AMI meters within its entire water service area. Currently, the District utilizes analog meters that are read on a 30-day cycle. This means that leaks, water waste, or breaks are not detected for at least thirty days. Approximately 36 percent of District customer meters are older than their useful life expectancy, which results in meters that are inaccurate. The proposed AMI meters will provide near real time water usage data to help the District and its customers identify and address leaks, breaks, and other issues in a timely manner. The District is applying for \$1.5 million in U.S. Bureau of Reclamation funding to convert 6,386 water meters, create an online customer portal system, and develop a conservation outreach campaign for an estimated water savings of 601 acre feet per year (AFY). The AMI project is in direct support of the WaterSMART goals of increasing water conservation, efficiency, and reliability.

## 1.2 Project Location

The project is located within the 4,907 acres of Rubidoux Community Services District’s service area within the City of Jurupa Valley in northwest Riverside County, California. The District is bound by San Bernardino County to the north, the Jurupa Mountains and Pedley Hills to the southwest, the Santa Ana River to the south, and the City of Riverside to the east. The District is located approximately 52 miles east of the City of Los Angeles. The coordinates for the District are 33.9995° N, -117.4052° W. The location of the

District's service area is shown in Figure 1 - Vicinity Map. The District serves a population of 36,827 that includes low income disadvantaged communities.

**Figure 1 - Vicinity Map**



### 1.3 Technical Project Description

For this project, the District will replace a total of 6,386 outdated manual read water meters with new AMI meters. The AMI meters will have automatic relay readings utilizing a system of radio antennas and a “fixed network.” The new meters will automatically relay data on water usage to the District’s NorthStar billing system. During planned or unexpected fixed network system malfunctions, as a function of business continuity, the meters can also be read by driving by the meters using special radio equipment.

The project will involve the replacement of all customer meters and will exclude 8 hydrant meters. The meters to be replaced are designated for residential, irrigation, commercial, and institutional usage. The meters for replacement will range from 5/8 inch to 6 inch diameter meters. Table 1 breaks down the number of meters by size that are to be replaced with AMI meters.

**Table 1: Number of Meters by Size**

Meter Size (inches)	Quantity
5/8" Meters	4,452
3/4" Meters	1,677
1" Meters	106
1.5" Meters	58
2" Meters	78
3" Meters	2
4" Meters	5
6" Meter	3
2" Non-potable Meters	5
<b>Total</b>	<b>6,386</b>

The first phase of the project will involve the installation of a fixed network signal transmission system, analytical software, and customer portal. A list of the Sensus manufacturer Xylem brand equipment, and software for installation of phase one are included below:

Phase One

- M400 Basestation (3 total)
- Communication Backhaul via Ethernet/IP (3 total)
- Regional Network Interface (RNI)<sup>™</sup> Software as a Service (SaaS) model
- Sensus Analytics System
- Customer Portal System

The Regional Network Interface (RNI)<sup>™</sup> software communicates with the SmartPoint<sup>®</sup> meters to relay data to the District in near real time. The RNI servers at the District's data center manage network communications and data storage and processing. The Backhaul communicates between the RNI tower system and the District's data center.

The Sensus Analytics System provides the functionality to complete the data analytics of the system including analysis of historical and current data, as well as perform predictive modelling to understand future trends. The Sensus Analytics System draws information

from the M400 Basestations and District data center from the cloud to complete the complex data analysis and reports.

The Customer Portal System is a web-based, custom-branded interactive application for District customers. The portal provides customers with the most current data including hourly water consumption down to the gallon, updated every four hours. The customer can also create alerts for managing daily usage, billing cycle usage and even vacation alerts. These features allow customers to identify leaks quickly and receive alerts when leaks and other potential issues arise.

In addition, the District will upgrade its current NorthStar customer service software to be compatible with the new AMI software so billing data can interface with the analytics and customer portal. The installation of the infrastructure, software and Customer Portal, and upgrade of the NorthStar software is estimated to begin in March 2023 and be completed by the end of July 2023.

The second phase of the project will include two components: an outreach campaign and the replacement of the 6,386 meters. The AMI meters selected are the Sensus Xylem brand. The number of AMI meters by size and SmartPoint® radio transmitter to be installed in phase two are listed below. The installation of the meters is estimated to begin in August 2023 and be completed by approximately February 1, 2026.

### Phase Two

- 5/8" and 3/4" SL RII® Meter (6,129)
- 1" SR II® Meter (106)
- 1½" OMNI™ + R<sup>2</sup> Meter (58)
- 2" OMNI™ Compound (C<sup>2</sup>) Meter (78)
- 3" OMNI™ C<sup>2</sup> Meter (2)
- 4" OMNI™ C<sup>2</sup> Meter (5)
- 6" OMNI™ C<sup>2</sup> Meter (3)
- 520M Single Port SmartPoint® Radio Transmitter (6,386)

The SL RII® and SR II® water meter will be utilized for all meters up to 1" respectively. SL RII® and SR II® are magnetic-drive, positive-displacement meters use an oscillating piston. This feature provides sensitivity in measuring a wide range of flows for a variety of residential applications.

The 1½” and 2” OMNI™ + R<sup>2</sup> water meters exceed American Water Works Association (AWWA) Standard C701 and C702 class II specifications. With only one moving part, the measuring element operates without friction or wear and extends upper and lower flow ranges. Furthermore, it has an electronic register with no mechanical gearing.

For the 2” to 6” water meters, the OMNI™+ Compound (C<sup>2</sup>) meter features Floating Ball Technology (FBT). that uses an impeller with a ball design. The impeller is weightless in the water line and can begin moving with very little water flow or force through the meters. As a result, OMNI + C<sup>2</sup> meters have an extended flow range with greater low-flow sensitivity. They also have the ability to capture extended high-flow rates with virtually no wear on the compound water meters. All equipment is the Xylem brand Sensus manufacturer.

The District’s water conservation outreach and education campaign will run concurrently with the phase two meter installation efforts. The outreach education efforts will include updates and enhancements to the District’s conservation website, the design of various outreach material to promote the customer portal and information about the new meters. Material and activities may include but is not limited to bill inserts, social media content, newspaper ads, banners, website updates and workshops. The goal of the outreach campaign is to increase customer participation in the Customer Portal and conservation programs. The outreach campaign will run through the duration of the meter installation period. The District will also investigate participation in rebate incentives.

## **1.4 Evaluation Criteria**

### **1.4.1 Evaluation Criterion A - Quantifiable Water Savings**

#### **1.3.1.1 Describe the amount of estimated water savings**

The project is estimated to save 601 AFY for a total of 9,015 AF over the 15 year lifetime of the meters. Table 2 and 3 provide the assumptions for calculating the potential water savings from the project.



**Table 2: Assumptions for Calculating Water Savings from the Project**

Assumptions for Calculating Water Savings	
Total number of District meters	6,394
Total number of AMI meters to be installed	6,386
Actual water supplied in CY 2020 <sup>(a)</sup>	5,187 AF
Actual customer water usage in CY 2020 <sup>(a)</sup>	4,770 AF
Percent water savings from expeditious repair of leaks, breaks <sup>(b)</sup>	4.24%
Percent water savings from implementation of customer portal <sup>(c)</sup>	5%
Percent water savings from enhanced customer service outreach and education <sup>(c)</sup>	3%

Notes: AF = acre-feet; CY = calendar year  
 (a) Source: [UWMP](#), 2021.  
 (b) Source: Aquacraft, Inc. 2011.  
 (c) Source: M.Cubed, 2013.

**Table 3: Water Savings Calculation**

	Annual Water Savings (AFY)
Estimated water savings from prompt repair of leaks and breaks	220
Estimated water savings from implementation of customer portal	239
Estimated water savings from enhanced customer service outreach and education	143
<b>Total</b>	<b>601</b>

1.3.1.2 Describe current losses

SB 555 (Wolk) was signed into law in 2015 as a result of ongoing drought conditions, which required urban retail water suppliers to submit water loss audits to the state by October 1 of each year. The District completed the California Water Loss Audit for 2020 data to identify water loss within the District. Based upon the validated 2020 audit, the District had a total water loss of 659 AFY, which is equivalent to 12.7 percent of water

supplied. This included an estimated 11.1 percent real losses and 1.4 percent apparent losses of total water production. In 2020, a total of 557 leaks were identified throughout the distribution system, service lines and at customer meters.

#### 1.3.1.3 Describe the support/documentation of estimated water savings.

The Water Research Foundation’s “California Single Family Water Use Efficiency Study” documents that the average leak rate per household is 0.0344 AFY.<sup>1</sup> Based on this study, the District conservatively estimates to save 220 AFY (0.0344 AFY x 6,386 meters) as a result of this project. Refer to Tables 2 and 3 for assumptions and calculation of water savings.

Water savings based on the installation of the AMI meters including the customer portal is estimated to be 5 percent of customer usage (Table 2). This is based on East Bay Municipal Utility District’s “Evaluation of East Bay Municipal Utility District’s Pilot of WaterSmart Home Water Reports” that evaluates the water savings achieved utilizing the WaterSmart customer portal.<sup>2</sup> The District estimates a total savings of 239 AFY from the installation of the customer portal given a 5 percent reduction in customers usage.

Furthermore, the District estimates to save an additional 3 percent in water use with implementation of a customer outreach, education, and potential incentive program. Although most districts estimate a 5% reduction from increased conservation,<sup>1</sup> the District estimates a more conservative savings of 3 percent due to limited staffing capabilities compared to larger Districts. The customer outreach program will increase activities such as direct communication to customers, outreach campaigns, and potential rebate incentives. Based on customer water usage of 4,770 AFY the District anticipates conserving 143 AFY from additional conservation outreach and incentives.

Actual water savings from the project will be verified by the District by comparing historical data for water usage prior to implementation of the AMI meter project. This will include a comparison of a total of 1 year pre-installation water usage and then 1-year of post installation water usage. Further tracking of customer water usage will occur throughout the period of the project.

#### 1.3.1.4 Municipal meter water savings

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<sup>1</sup> Source: Aquacraft, 2011.

<sup>2</sup> Source: M.Cubed, 2013.

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

The three components of water savings include reducing the frequency of leaks, reducing the response time when leaks occur, and continually improving the accuracy of metering and recordkeeping systems coupled with effective customer communication such as an interactive portal and enhanced water conservation efforts.

Water savings through repair of leaks was calculated in Table 3 based on 4.24 percent of production. The savings was calculated as follows:

$$\begin{aligned} \text{Total Number of Meters} \times 0.0344 \text{ AFY per household} &= \text{Water Savings from Leaks} \\ 6,386 \text{ (Meters)} \times 0.0344 \text{ AFY} &= 220 \text{ AF} \end{aligned}$$

Water savings through the setup of the AMI system with an interactive customer portal is estimated to save 5 percent of customer demand or usage (Table 3). The water savings as a result of the customer portal was calculated as follows:

$$\begin{aligned} \text{Total Annual Water Sales (AFY)} \times 5\% &= \text{Water Savings from Customer Portal} \\ 4,770 \text{ (AFY)} \times 5\% &= 239 \text{ AFY} \end{aligned}$$

Water savings through an enhanced conservation program is estimated to save approximately 3 percent of total customer usage (Table 3). The savings from the enhanced conservation program was calculated as follows:

$$\begin{aligned} \text{Total Annual Water Sales (AFY)} \times 3\% &= \text{Enhanced Conservation Water Savings} \\ 4,770 \text{ (AFY)} \times 3\% &= 143 \text{ AFY} \end{aligned}$$

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

The current distribution system losses were determined from the District's validated CY 2020 Water Loss Audit that was submitted by October 1, 2021, to the California Department of Water Resources (DWR). According to the CY 2020 audit, the District estimates 12.5% in water losses, of which 11.4% are real losses and 1.1% from apparent losses. Because of the use of outdated meters, leaking service lines, and unreported leaks, approximately 5 percent of the loss is occurring at the customer meters in the form of under reporting. Approximately 36 percent of the existing meters are operating beyond

their life expectancy which is assumed to be major source of water loss. In addition, the 30 day billing cycle does not allow the District and customers to take necessary steps to stop water loss in a timely manner. The proposed project will help the District to reduce such water losses by upgrading the outdated system in order to provide accurate water usage data and identify leaks sooner for quicker repair.

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

The District evaluated several studies to determine the estimated water savings from the proposed project.

The 2016 "California Single-Family Water Use Efficiency Study" from the Water Research Foundation, documented an average leak rate of 30.7 gallons per household per day or 0.0344 AFY. The District has tracked a total of 557 detected leaks at the customer meter or on the service line. Based on the study, the District is estimated to save 220 AFY given 0.344 AFY saved x 6,386 connections. (Table 2 and 3).

The aforementioned East Bay Municipal Water District study showed an estimated water savings of 5 percent for the implementation of a similar interactive customer portal. Based on a 5 percent reduction in water demand, the customer portal is estimated to save 239 AFY (Table 2 and 3).<sup>3</sup>

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

The District will install a total of 6,386 AMI meters as part of the project. The following Xylem brand equipment, meters and software have been identified for this project:

- Sensus Manufacturer and Model (Quantity)
- M400 Basestation (3 total)
  - Communication Backhaul via Ethernet/IP (3 total)
  - RNI SaaS (1)
  - Sensus Analytics System (1)
  - Customer Portal System (1)

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<sup>3</sup> Source: M.Cubed, 2013.

- - ¾" SL RII Meter (6,129)
- 1" SRII Meter (106)
- 1 1/2" OMNI R2 Meter (58)
- 2" OMNI C<sup>2</sup> Meter (78)
- 3" OMNI C<sup>2</sup> Meter (2)
- 4" OMNI C<sup>2</sup> Meter (5)
- 6" OMNI C<sup>2</sup> Meter (3)
- 520M Single Port SmartPoint® Radio Transmitter (6,386)

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

Actual water savings from the project will be verified by the District by comparing historical data for water usage prior to implementation of the AMI meter project. This will include a comparison of a total of 1 year pre-installation water usage and then 1-year of post installation water usage. Further tracking of customer water usage will occur throughout the period of the project. In addition, the District will track customer participation in both the customer portal and conservation programs to identify water savings from these components of the project.

#### 1.4.2 Evaluation Criterion B - Renewable Energy

##### 1.3.2.1 Subcriterion No. B.2: Increasing Energy Efficiency in Water Management

c. How will the energy efficiency improvement combat/offset the impacts of climate change, including an expected reduction in greenhouse gas emissions. If the project will result in reduced pumping, please describe the current pumping requirements and the types of pumps (e.g., size) currently being used. How would the proposed project impact the current pumping requirements and energy usage?

The project will result in reduced pumping as a result of reduced demand. As old meters that are under-registering are replaced with more accurate AMI meters and customers realize the cost of their actual water use, overall water usage will decrease. Further, leaks will be repaired faster as a result of the AMI technology, which will also reduce the overall water demand. Therefore, there will be energy savings through a reduction in water supply pumping and treatment. As part of the Urban Water Management Plan (UWMP), the District calculated that it takes 598.7 total kWh to pump one acre foot of water given metered electric usage obtained from Southern California Edison (Figure 2). Therefore,

given it takes 598.7 kWh/acre foot and the project will save 601 AFY, the project is estimated to save 359,985 kWh per year.<sup>4</sup>

To convert reductions of kilowatt-hours into avoided units of carbon dioxide (CO<sub>2</sub>) emissions, the U.S. Environmental Protection Agency (EPA) Greenhouse Gas Equivalencies Calculator uses the Emissions and Generation Resource Integrated Database (eGRID) U.S. annual non-baseload CO<sub>2</sub> output emission rate. The calculation excludes any other greenhouse gases. The EPA's formula for the emissions factor is:  $7.03 \times 10^{-4}$  metric tons CO<sub>2</sub>/kWh<sup>5</sup>. Therefore, the estimated CO<sub>2</sub> emission reduction from reduced water pumping and treatment is 253.1 metric tons of CO<sub>2</sub>. Table 4 breaks down the calculation for energy and CO<sub>2</sub> emissions from reduced pumping and treatment.

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<sup>4</sup> Source: RCSD UWMP (2021), p. 6-22.

<sup>5</sup> Source: GHG, 2021. <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator-revision-history>

Figure 2 - UWMP Energy Demand kWh/AF

Table O-1B: Recommended Energy Reporting - Total Utility Approach				
Enter Start Date for Reporting Period	1/1/2020	Urban Water Supplier Operational Control		
End Date	12/30/2020			
<input type="checkbox"/> Is upstream embedded in the values reported?		Sum of All Water Management Processes	Non-Consequential Hydropower	
<b>Water Volume Units Used</b>	AF	<b>Total Utility</b>	<b>Hydropower</b>	<b>Net Utility</b>
Volume of Water Entering Process (volume unit)		5,187	0	5,187
Energy Consumed (kWh)		3,105,473	0	3,105,473
Energy Intensity (kWh/volume)		598.7	0.0	598.7
<b>Quantity of Self-Generated Renewable Energy</b>				
	1,570 kWh			
<b>Data Quality (Estimate, Metered Data, Combination of Estimates and Metered Data)</b>				
Combination of Estimates and Metered Data				
<b>Data Quality Narrative:</b>				
CY2020 metered electricity use obtained from Southern California Edison in spring 2021. Renewable energy is estimated from solar panel specifications and average peak sun of 5.38 hours/day.				
<b>Narrative:</b>				
Edison meter data includes active potable wells, non-potable wells, water treatment facilities, and booster stations. District also has 1 natural gas generator and 3 potable wells have diesel generators. All 4 active reservoirs are solar powered with a total of 5 solar panels; each with battery backup and then Edison service when voltage drops too low before sun rises.				

Table 4: Energy and CO<sub>2</sub> Reductions from Treatment and Pumping Reductions

Total Project Water Savings (AFY)	601
District Energy Intensity (kWh per AF)	598.7
Total Project Energy Savings (kWh per year)	359,985
Emissions Factor (metric tons CO <sub>2</sub> per kWh)	0.000703
Total Project Emissions Reduction (metric tons CO <sub>2</sub> )	253.1

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

According to the United States Environmental Protection Agency (EPA), the average passenger vehicle emits about 411 grams of carbon dioxide (CO<sub>2</sub>) per mile.<sup>6</sup> This number can vary based on two factors: the fuel economy of the vehicle and the amount of carbon in the vehicle's fuel. Most vehicles on the road in the U.S. today are gasoline vehicles, and they average about 21.6 miles per gallon.<sup>7</sup>

The monthly meter reading in the District requires driving a District vehicle approximately 4,400 miles per year. With implementation of the project, this driving and resulting emissions will be eliminated. Therefore, a conservative estimate of 1,5808,400 grams or 3,987 pounds of CO<sub>2</sub> emissions is estimated to be eliminated from the air as a result of the project. Table 5 summarizes the calculation of CO<sub>2</sub> emission reductions as a result of the project.

**Table 5: CO<sub>2</sub> Emissions Reduced with AMI Meters**

CO <sub>2</sub> emissions per mile (grams of CO <sub>2</sub> / mile)	411
Estimated total miles per year by District vehicle to read meters	4,400
Total annual District vehicle emissions (grams of CO <sub>2</sub> )	1,808,400
Total annual District vehicle emissions (pounds of CO <sub>2</sub> )	3,987

#### 1.4.3 Evaluation Criterion C – Sustainability Benefits

<sup>6</sup> National Service Center for Environmental Publications (NSCEP), <https://nepis.epa.gov/Exe/ZyNET.exe/P100JPPH.txt?ZyActionD=ZyDocument&Client=EPA&Index=2011%20Thru%202015&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&UseQField=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5CZYFILES%5CINDEX%20DATA%5C11THRU15%5CTXT%5C0000011%5CP100JPPH.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150q16/i425&Display=hpfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1>

<sup>7</sup> Source: EPA, 2014. <https://www3.epa.gov/otaq/gvg/learn-more-technology.htm>



### 1.3.3.1 Enhancing drought resiliency.

- a. Explain and provide detail of the specific issues(s) in the area that is impacted water sustainability, such as shortages due to drought and /or climate change, increased demand, or reduced deliveries.

The District expects to see significant increases in water demand resulting from several planned developments within its service area. This includes potential accessory dwelling units added to single-family residential lots. As a result of this planned growth, the District estimates to see the service area population increase from just over 36,000 to as high as 82,400 persons. Therefore, the water demand is expected to increase from 4,770 AFY in 2020 to 12,886 AFY by 2040.<sup>8</sup> Although the District's supply comes from a historically reliable and adjudicated groundwater basin, water quality issues in the groundwater present a challenge to continued supply resiliency. The District is in the process of installing additional treatment systems at each existing well and all future wells, coupled with regional treatment systems and blending to meet state and federal drinking water standards, including emerging contaminants like PFAS. As described in the District's 2020 UWMP, climate change effects are anticipated to increase outdoor water demand in normal and multiple-dry years. Therefore, the District will rely on water savings from system efficiency and water conservation efforts. The utilization of AMI technology is a key component of how the District intends to conserve water. Through the project, the District will conserve approximately 601 AFY that can directly help address an increase in water demand as a result of population growth.

In addition, the immediate savings from the AMI and conservation program participation will help to relieve stress from the significant drought that California is currently experiencing. Currently, the California Governor is asking water utilities to reduce consumption by 20 percent. To effectively reach that goal the District will need to replace outdated meters and implement a customer portal to provide an easy and immediate means to communicate drought messages including changes to the Water Shortage Contingency Plan stage level. The addition of an AMI system and robust conservation outreach effort will play a significant role in the District achieving their part in the State's goal.

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

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<sup>8</sup> Source: RCSD 2020 UWMP, pp. 2-2, 4-5.

As described in the previous section, the District anticipates reducing greenhouse gas emission through the significant decrease in reading meters out in the field. Currently, The District's meter readers drive approximately 4,400 miles per year to read the meters. Based on the EPA average passenger vehicle emits about 411 grams of carbon dioxide (CO<sub>2</sub>) per mile and an average about 21.6 miles per gallon, the District anticipates to reducing 3,987 pounds of CO<sub>2</sub> emissions from the air as a result of the project.<sup>9</sup> In addition, the District anticipates saving 203 gallons per year in gasoline fuel from reduced meter reading.

- c. Please describe how the project will directly address the concern(s) stated above. For example, if experiencing shortages due to drought or climate change, how will the project directly address and confront the shortages.

During water shortages including drought periods or when a well is offline, the proposed AMI system will assist the District in meeting necessary water use reductions pursuant to its 2020 Water Shortage Contingency Plan. With the project, customers will receive real time alerts on water waste, breaks, and leaks to address them in a timely manner. In addition, the customer portal will provide a means to communicate with customers quickly and directly on water reduction requirements due to a State-declared drought or other water shortage with mandated water use restrictions.

- d. 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.

Any conserved water as a result of the project will remain in the groundwater basin to help maintain a sustainable water supply.

- e. 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 not need to be pumped and will remain in the groundwater basin.

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<sup>9</sup> Source: EPA, Greenhouse Gas Emissions from a Typical Passenger Vehicle, 2014.

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

The total conserved water will be used for the intended purpose.

#### 1.3.3.2 Combating the Climate Crisis

“Increasing temperatures, decreasing snowpack, changes to the volume of precipitation, and changes to runoff timing and volume across the West are projected to affect numerous aspects of water management.”<sup>10</sup> The proposed project will provide the District with the tools to proactively address water management issues in a changing climate environment. For example, through the Customer Portal the District can notify customers quickly when a rain event is expected so that customers can turn off irrigation and prevent unnecessary watering. Furthermore, this will help save energy by reducing the volume of water pumped into the system. The automated AMI system also nearly eliminates the need to read meters in the field. This reduces the greenhouse gas emissions from driving around to reading meters. This also give the District the ability to redirect staff to address other crucial tasks including meter replacement and repair, as well as assist with the repair of service and mainline leaks.

#### 1.3.3.3 Disadvantaged or Underserved Communities

The U.S. Census data is gathered at three levels of precision: Census Designated Place (CDP), Census Tracts, and Census Block groups. CDPs are at the broadest level for unincorporated areas. Census tracts are made of Census Block Groups. DWR provides the Disadvantaged Communities (DAC) Mapping Tool for use by water suppliers particularly when they prepare their UWMPs. The DAC Mapping Tool provides U.S. Census American Community Survey 5-year data (2014 to 2018). According to the DAC Mapping Tool, several Census Block Groups within the District service area have median household incomes that qualify as “disadvantaged” and “severely disadvantaged,” as shown in Figure 2 – Disadvantaged Communities. All customers considered as “disadvantaged” or “severely disadvantaged” will receive new AMI meters and benefit directly from the project.

The term “underserved communities” refers to populations sharing a particular characteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life, as exemplified by the list in the preceding definition of “equity.” Whereas the term “equity” means the consistent and systematic fair, just, and impartial treatment of all individuals, including

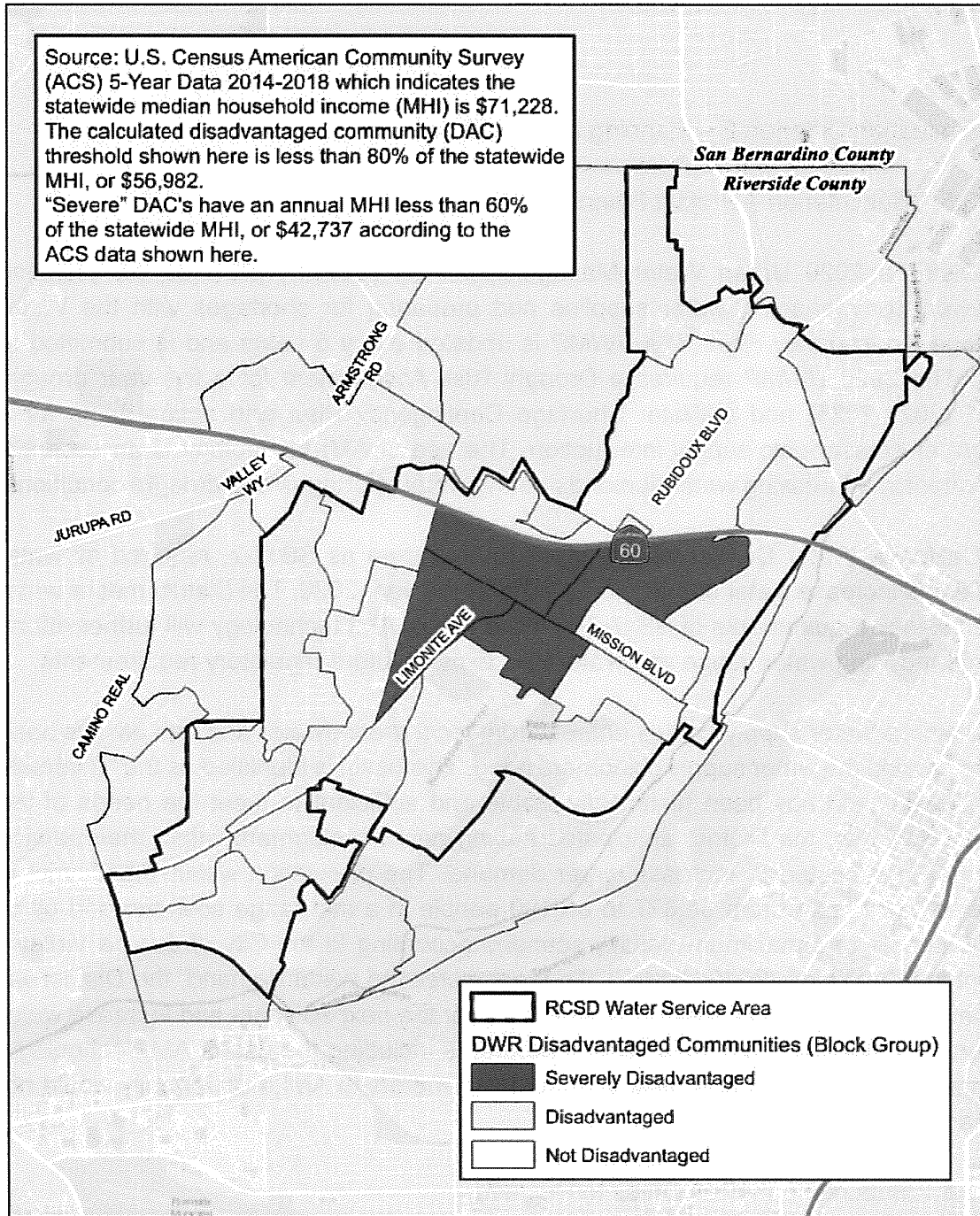
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<sup>10</sup> USBR, [Water Reliability in the West - 2021 SECURE Water Act Report \(usbr.gov\)](https://www.usbr.gov/water/programs/secure/2021-secure-report/)

individuals who belong to underserved communities that have been denied such treatment, such as Black, Latino, and Indigenous and Native American persons, Asian Americans and Pacific Islanders and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality.

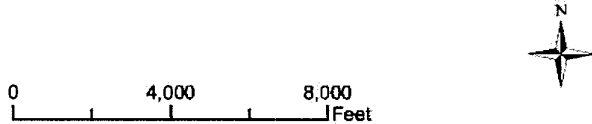
The District also includes “underserved communities” as identified with the U.S. Census. The District service area includes a City population demographic that is 71% Latino, 3.2% African American, 3.6% Asian American and 20.6% White (2020 US Census). The project will directly benefit these communities within the District’s service area by providing real time water usage to control water use and identify leaks before they receive a large water bill. In addition, the customer portal will provide communication to all these customers on available opportunities to conserve water and benefit from potential efficiency rebates.

**Figure 3 District Disadvantaged Communities**



Sources: Calif. Dept. Water Res., 2021; US Census Bureau, 2018; Riverside Co. GIS, 2021.

**Disadvantaged Communities**



#### 1.4.4 Evaluation Criterion D – Complementing On-Farm Irrigation Improvements

N/A

#### 1.4.5 Evaluation Criterion E – Planning and Implementing

##### 1.3.5.1 Subcriterion – Project Planning

The District’s 2020 Urban Water Management Plan (UWMP) provides the planning framework for managing water supplies and preparing for shortages with the Water Shortage Contingency Plan. The UWMP is updated every 5 years and is submitted to DWR. The 2020 UWMP requires a Drought Risk Assessment for a five-year drought period (2021-2025) and a Water Shortage Contingency Plan with action items for a drought or catastrophic supply interruption. The use of AMI technology is an essential component in addressing water demands during water shortages and drought conditions.

The California Water Conservation Act of 2009, known as SBx7-7, required all water suppliers to increase water use efficiency 20% by the year 2020. The District met its water use efficiency requirements of SBx7-7 and the use of AMI technology will further efforts towards reducing water usage and water loss to meet future regulatory requirements.

The District’s water supply comes entirely from local groundwater and has always been able to provide the water supply customers need. This basin is identified as the “Riverside South Basin” and has been historically stable and sufficient to meet the needs of the District. However, the District anticipates having new development within their service area that is expected to increase water demand. The population within the District is expected to increase from 36,827 to 65,100 people in a mid-range scenario and up to 82,400 people in a maximum density scenario according to the City of Jurupa Valley’s current land use plan (2020 UWMP). To meet increased water demand, the District will add several well fields and treatment facilities over the next 20 years and increase water conservation through expanding current programs including the use of AMI technology. The grant is to assist in the transition of outdated meters to AMI that normally would not be financially feasible.

##### 1.3.5.2 Subcriterion – Readiness to Proceed

The District has developed a schedule of activities and deliverables to complete the project within 3 years from the date of contract execution with the Bureau of Reclamation. Upon grant approval, the District will start the procurement process to receive the required AMI equipment and software. The District will also be retaining the services of a

consultant Project Manager that will oversee the implementation of the overall project. Thirdly, the District will utilize a contracted consultant to develop and implement an enhanced water conservation outreach and education program.

The first phase of the project is to install the infrastructure, software, the customer portal and update the NorthStar customer service software. The second phase will include the installation of the 6,386 meters from August 2023 through February 2026. Concurrently, the District will implement the community outreach and education campaign to further promote the customer portal and water conservation programs.

Table 6 outlines the activities and deliverables for the proposed project.

**Table 6: Project Activity and Deliverable Schedule**

ACTIVITY	LEAD PARTY	DELIVERABLE	START/END
Preparation			1/1/2023
Project Kick-Off	RCSD & Consultant	Meeting Notes	1/1/2023
Bid for Infrastructure Installation and Device Procurement	RCSD & Consultant	RFP, proposals review and contracts for equipment and installation	1/1/2023-2/28/2023
Phase 1			3/1/2023 - 7/31/2023
Grant Execution	RCSD & Consultant	Signed Grant Documents	3/1/2023
Quarterly Program Meeting	RCSD & Consultant	Meeting Notes	Quarterly
Quarterly Progress / Financial Reports	RCSD & Consultant	Quarterly Reporting Documents	Quarterly
Kick Off Meeting with Vendor	RCSD, Consultant and Vendor	Meeting Notes	3/1/2023
Phase 1 Infrastructure Installation	Vendor	Installation of infrastructure for AMI system	3/1/2023 - 7/31/2023
Software & Portal Set up	Vendor	Install and set up of AMI software and customer portal	3/1/2023 - 7/31/2023
Upgrade NorthStar Software	Vendor	Software update for AMI compatibility	3/1/2023 - 7/31/2023
Phase 1 Completion Date		Completion of Phase I	7/31/2023
Phase 2 Start Date			8/1/2023
Phase 2 Meter Installation	Vendor	Installation of AMI meters	8/1/2023 - 1/31/2026

<b>ACTIVITY</b>	<b>LEAD PARTY</b>	<b>DELIVERABLE</b>	<b>START/END</b>
Implementation of Outreach Campaign	Consultant	Development and implementation of outreach	3/1/2023 - 2/28/2026
Final Program / Financial Report	RCSD & Consultant	Program and financial reports completed and submitted to BOR	1/1/2026 - 2/28/2026
Project Completion		Completion of project	2/28/2026

The District consulted with Douglas McPherson, Environmental Protection Specialist in the Bureau of Reclamation, Southern California Area Office on potential regulatory requirements. Based on this discussion, there are no anticipated permit requirements for this project.

**1.4.6 Evaluation Criterion F – Collaboration**

The project promotes and encourages collaboration between the District and its customers in addressing leak repairs and conserving water. Current meters are outdated and read manually on a 30 day cycle. With the new AMI meters, the real time data and customer portal will allow the District to work with the customer in identifying leaks and guiding them to how to fix common leaks and incentives available to replace leaking or broken fixtures. The AMI system will also allow for automated reading of construction meters to make the process simpler for the District and developers in obtaining meter reads from their construction sites. As more customers engage in the customer portal, it is anticipated that there will be increased participation in water conservation programs and utilization of available educational resources.

The project is well supported within the local and greater community as shown from the letters of support received. The District has received letters of support from the City of Jurupa Valley, California State Senator Richard Roth, United States Congressmen Mark Takano, Santa Ana Watershed Project Authority, and California State Assemblymember Sabrina Cervantes (letters of support are in Appendix A).

The significance of increased collaboration with customers means increased customer trust in the District and better understanding of water use efficiency improvement opportunities. This includes the likelihood of increased participation in water conservation programs and helps the District identify service line leaks to be proactive in making infrastructure repairs. The AMI technology will become standard for all new development to ensure future customers are able to take advantage of quick leak alerts and easy communication with the District on water conservation opportunities. The project will significantly help the District reach its outlined goals for reducing water conservation as part of their UWMP.



#### 1.4.7 Evaluation Criterion G – Additional Non-Federal Funding

The percentage of non-Federal funding is provided using the following calculation.

$$\frac{\text{Non-Federal Funding}}{\text{Total Project Cost}} = 65.4\%$$
$$\frac{\$2,840,747 \text{ (Non-Federal Funding)}}{\$4,340,747 \text{ (Total Project Cost)}} = 65.4\%$$

The percentage of non-Federal funding is 65.4% which exceeds the required 50% match.

#### 1.4.8 Evaluation Criterion H – Nexus to Reclamation

Given changes in climate and ongoing drought the District is seeking additional water supplies to improve resiliency of supply. This includes potential interties with West Valley Water District and Western Municipal Water District (“Western”). Both would provide State Water Project supplies. Through Western, the District would have access to the Colorado River, a Reclamation project. This intertie provides alternative source of water in cases of reductions in groundwater supply due to contamination such as with PFAs or as a result of increases in demand from population growth. The proposed AMI project is a key component of the District’s plan to minimize the utilization of Colorado River water. As a result, the project would directly help reduce the demand on the Colorado River.

### 1.5 Performance Measures

The District is seeking to achieve and verify potential water saving through the installation of an AMI system, customer portal and expanded water conservation outreach campaign. In order to measure the potential savings, the District will first establish a baseline monthly water usage for accounts prior to the installation of new smart meters. This will include an analysis of at least 12 months of water usage and accounting for weather conditions (i.e. regular or dry year scenarios).

Upon installation of the new smart meters, the District will track the water usage and compare it with the established baseline, accounting for weather conditions. In addition, the District will utilize the analytics of the customer portal to track customer activity to identify the potential savings generated from the use of the portal. Lastly, the District will keep track of outreach actions and resulting participation to determine what methods were

more effective. This includes maintaining a tracking spreadsheet of customer participation in incentive programs such as rebates and free devices.

## Section 2 Project Budget

### Funding Plan

The resolution commits the District to funding the non-federal funding portion of the project cost (a copy of the draft District Resolution is located in Appendix B). The project's non-federal share will be funded through the District's operations reserve fund. The total non-federal funding provided by the District is \$2,840,747. The funds will be available on commencement of the contract with the Bureau of Reclamation. There are no constraints on the availability of funds and there is no other contingency. Funds will be allocated over the time of the project as outlined in Table 7 below.

**Table 7 Timeline of Expenditures**

<b>Expenditures</b>	<b>Amount</b>	<b>Timeframe</b>
Network Infrastructure And Installation	\$166,105	3/1/2023 - 7/31/2023
Software & Customer Portal	\$27,700	3/1/2023 - 7/31/2023
NorthStar System Upgrade	\$40,000	3/1/2023 - 7/31/2023
Employee Salary & Benefits Phase 1	\$95,034	3/1/2023 - 7/31/2023
Project Management Phase 1	\$60,000	3/1/2023 - 7/31/2023
Meter Purchase and Installation 2A	\$1,068,049	8/1/2023 - 5/31/2024
Employee Salary & Benefits Phase 2A	\$63,356	8/1/2023 - 5/31/2024
Project Management Phase 2A	\$40,000	8/1/2023 - 5/31/2024
Meter Purchase and Installation 2B	\$1,424,065	6/1/2024 -5/31/2025
Employee Salary & Benefits Phase 2B	\$95,034	6/1/2024 -5/31/2025
Project Management Phase 2B	\$60,000	6/1/2024 -5/31/2025
Meter Purchase and Installation 2C	\$1,068,049	6/1/2025 - 1/31//2026

<b>Expenditures</b>	<b>Amount</b>	<b>Timeframe</b>
Employee Salary & Benefits Phase 2C	\$63,356	6/1/2025 - 2/28/2026
Project Management Phase 2C	\$40,000	6/1/2025 - 2/28/2026
Outreach Campaign	\$30,000	3/1/2023 - 2/28/2026
<b>Total Costs</b>	<b>\$4,340,747</b>	3/1/2023 - 2/28/2026

## 2.1 Budget Proposal

A budget proposal is provided in the following table which identifies both the District and WaterSMART grant funds required to implement the project. Table 8 provides the percentage of costs shared per funding source.

**Table 8: Project Costs and Percentage by Source**

<b>Funding Source</b>	<b>Total Project Cost by Source</b>	<b>Percent of Total Project Cost</b>
District Funding	\$2,840,747	65.4%
Reclamation Funding	\$1,500,000	34.56%
Other Federal Funding	\$0	0.0%
<b>Totals</b>	<b>\$4,340,747</b>	<b>100.0%</b>

The proposed budget breakdown by funding source for the project is provided in Table 9.

**Table 9: Project Budget**

BUDGET ITEM DESCRIPTION	COMPUTATION			Recipient Share	BOR Share	TOTAL COST
	Price	Unit	Quantity			
<b>SALARIES AND WAGES</b>						
General Manager	\$129.94	hour	100	\$12,994	\$0	\$12,994
Director of Engineering	\$85.37	hour	200	\$17,074	\$0	\$17,074
Customer Service Manager	\$71.58	hour	1200	\$85,896	\$0	\$85,896
Customer Service Rep	\$39.68	hour	1600	\$63,488	\$0	\$63,488
Meter Reader	\$34.08	hour	600	\$20,448	\$0	\$20,448
Utility Maintenance I	\$35.11	hour	500	\$17,555	\$0	\$17,555
<b>Subtotal</b>			4,200	<b>\$217,455</b>	<b>\$0</b>	<b>\$217,455</b>
<b>FRINGE BENEFITS</b>						
<b>Employee Benefits (Averaged)</b>	23.64858	hour	4,200	<b>\$99,324</b>	<b>\$0</b>	<b>\$99,324</b>
<b>TRAVEL</b>						
N/A						
<b>EQUIPMENT</b>						
M400 Basestation	\$27,548.17		3	\$82,645	\$0	\$82,645
Meters (Averaged)	\$444.85	meter	6,386	\$1,340,813	\$1,500,000	\$2,840,813
Communication Backhaul	\$1,077.50	unit	3	\$3,233	\$0	\$3,233
<b>Subtotal</b>				<b>\$1,426,690</b>	<b>\$1,500,000</b>	<b>\$2,926,690</b>
<b>CONTRACTUAL &amp; CONSTRUCTION</b>						
Meter Installation (Averaged)	\$112.64	meter	6,386	\$719,350	\$0	\$719,350
Installation Services Equipment, Software & Customer Portal		lump sum	1	\$107,928	\$0	\$107,928
Northstar System Upgrade	\$40,000	upgrade	1	\$40,000	\$0	\$40,000
Education Outreach Services	195	hours	153.84615	\$30,000	\$0	\$30,000
Program Management				\$200,000	\$0	\$200,000
<b>Subtotal</b>				<b>\$1,097,278</b>	<b>\$0</b>	<b>\$1,097,278</b>
<b>ENVIRONMENTAL AND REGULATORY COSTS</b>						
N/A						
<b>THIRD PARTY CONTRIBUTIONS</b>						
N/A						
<b>OTHER</b>						
N/A						
<b>TOTAL DIRECT COSTS</b>						
<b>INDIRECT COSTS</b>						
<b>TOTAL ESTIMATED PROJECT COSTS</b>						
				<b>\$2,840,747</b>	<b>\$1,500,000</b>	<b>\$4,340,747</b>

The detailed cost breakdown for all costs (excluding salaries, wages, and fringe benefits) including the cost for the purchase of each meter installation is provided in the following tables.

**Table 10 Equipment Cost Breakdown**

<b>Meter Size</b>	<b>Unit Price</b>	<b>Quantity</b>	<b>Total Cost</b>
3/4" Meters	\$249.00	6,129	\$1,526,121
1" Meters	\$316.00	106	\$33,496
1.5" Meters	\$619.00	58	\$35,902
2" Meters	\$868.00	78	\$67,704
3" Meters	\$2,182.00	2	\$4,364
4" Meters	\$3,790.00	5	\$18,950
6" Meter	\$6,546.00	3	\$19,638
2" Non-potable	\$868.00	5	\$4,340
Radio Transmitter	\$145.00	6,386	\$925,970
<b>Total for Meters</b>			<b>\$2,636,485</b>
Network Infrastructure			<b>\$79,700</b>
Software and Customer Portal			<b>\$0</b>
NorthStar System Upgrades			<b>\$0</b>
Education and Outreach Initiative			<b>\$0</b>
Project Management			<b>\$0</b>
Tax			<b>\$210,504</b>
Total			<b>\$290,205</b>
<b>Estimated Total</b>			<b>\$2,926,690</b>

**Table 11 Meter and Equipment Installation Costs**

<b>Meter Size</b>	<b>Unit Price</b>	<b>Quantity</b>	<b>Total Cost</b>
3/4" Meters	\$105.00	6,129	\$643,545
1" Meters	\$105.00	106	\$11,130
1.5" Meters	\$310.00	58	\$17,980
2" Meters	\$310.00	78	\$24,180
3" Meters	\$1,120.00	2	\$2,240
4" Meters	\$1,495.00	5	\$7,475
6" Meter	\$3,750.00	3	\$11,250
2" Nonpotable	\$310.00	5	\$1,550
Radio Transmitter	\$0.00	6,386	\$0
<b>Total for Meters</b>			<b>\$719,350</b>
Network Infrastructure			<b>\$80,228</b>
Software and Customer Portal Set Up			<b>\$27,700</b>
NorthStar System Upgrades			<b>\$40,000</b>
Education and Outreach Initiative			<b>\$30,000</b>
Project Management			<b>\$200,000</b>
Total			<b>\$377,928</b>
<b>Estimated Total</b>			<b>\$1,097,278</b>

**Table 12 Total Cost for Equipment and Installation**

Meter Size	Unit Price	Quantity	Total Cost
3/4" Meters	\$354.00	6,129	\$2,169,666
1" Meters	\$421.00	106	\$44,626
1.5" Meters	\$929.00	58	\$53,882
2" Meters	\$1,178.00	78	\$91,884
3" Meters	\$3,302.00	2	\$6,604
4" Meters	\$5,285.00	5	\$26,425
6" Meter	\$10,296.00	3	\$30,888
2" Nonpotable	\$1,178.00	5	\$5,890
Radio Transmitters	\$145.00	6,386	\$925,970
<b>Total for Meters</b>			<b>\$3,355,835</b>
Network Infrastructure			<b>\$159,928</b>
Software and Customer Portal Set Up			<b>\$27,700</b>
NorthStar System Upgrades			<b>\$40,000</b>
Education and Outreach Initiative			<b>\$30,000</b>
Project Management			<b>\$200,000</b>
Tax			<b>\$210,504</b>
<b>Estimated Total</b>			<b>\$4,023,968</b>

Excludes staff salaries and fringe benefits.

## 2.2 Budget Narrative

The District's proposed budget includes the following costs.

### 2.2.1 Salaries and Wages

The salaries and wages included in the budget proposal are for all District employees who will be administrating and overseeing the AMI project. Tasks include project meetings, inspections, preparing bid advertisements and community outreach.

The primary staff hours are allocated to the Customer Service Department over the 3 year project. This will include but is not limited to completing the following essential tasks:

1. Setup of AMI software system
2. Update of meter data in billing system
3. Coordination with NorthStar to update customer service software to run compatible with new AMI software.
4. Set up and maintenance of customer portal
5. Address customer questions on customer portal, changes in bill, leaks, etc.
6. Address field issues with newly installed meters and Basestations.

7. Inhouse program coordination with vendor, project management and outreach campaign consultants.

The cost share for the salaries and wages falls solely on the District. The salary and wage rates are provided based on 2021 rates. The total salaries and wages cost for the 3 year project period is \$217,455.

#### 2.2.2 Fringe Benefits

The cost share for the fringe benefits falls solely on the District. The fringe benefit rate of \$23.65 are provided based on 2021 rates. Fringe rates are a calculated average based on the hours and benefit rate in dollar per hour for the employees involved in the AMI project. The total fringe benefit cost for the 3 year project period is \$99,324.

#### 2.2.3 Travel

No travel is anticipated.

#### 2.2.4 Equipment

A total of 6,386 water meters will be upgraded to AMI meters. The budgetary estimate for equipment and software for the project is based on quotes received in October 2021. The costs associated with the network infrastructure for 3 M400 Basestations and 3 Communication Backhauls is quoted as \$85,877. The total cost for the meters and 520M Single Port SmartPoint Radio transmitter is \$2,840,813. The total equipment cost is quoted at \$2,926,690.

#### 2.2.5 Materials and Supplies

The project is not requesting funds for materials and supplies.

#### 2.2.6 Contractual

A significant portion of the requested budget is for contractual services including installation costs and project management. The District is seeking an entire turnkey system, inclusive of all necessary materials and systems needed for the AMI project. The District is awarding the contract to retain an independent Project Management Consultant to execute the project. The Program Management Consultant will be responsible for issuing a competitive procurement process for the installation of the meters and all required infrastructure and software set up. The most qualified proposer will be awarded the contract to install the AMI system. The budgetary estimate for contractual services for the project is based on quotes received in October 2021. The total costs for infrastructure installation related to the AMI meters is quoted as \$107,928. The estimated cost for meter installation is \$719,350. The total installation cost is \$827,278. The upgrade and integration costs (\$40,000) are estimated to bring the current NorthStar customer service



software to compatibility with the AMI technology. The District will work with a Project Management Consultant to complete program management of the project at an estimated cost of \$200,000 and a consultant for \$30,000 to develop public outreach efforts. The overall total for contractual services is \$1,097,278.

#### 2.2.7 Third Party In-Kind Contributions

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

#### 2.2.8 Environmental and Regulatory Compliance Costs

The project is not requesting funding for environmental and regulatory compliance costs.

#### 2.2.9 Other Expenses

The project is not requesting funding for other expenses.

#### 2.2.10 Indirect Costs

No indirect costs are being included.

## **Section 3 Environmental and Cultural Resources Compliance**

The project consists of upgrading existing equipment and is therefore not anticipated to impact the surrounding environment. The scope of this project only includes the replacement of meters located at customer property lines, installation of base collector system, and customer portal that is entirely online. Upon discussion with Douglas McPherson, Environmental Protection Specialist in the Bureau of Reclamation, Southern California Area Office, the project is expected to receive an environmental categorical exclusion under "516 DM 14.5 D (1)- Maintenance, rehabilitation, and replacement of existing facilities which may involve a minor change in size, location, and/or operation."

Because project activities are limited to customer meter boxes and base collectors, the project is not expected to adversely impact sensitive plant or animal species.

## **Section 4 Required Permits or Approvals**

There are no permitting requirements to complete the project. All meters will be installed in the place of existing meter boxes.

## Section 5 Overlap or Duplication of Effort Statement

The District is only seeking outside funds through the WaterSmart Water and Energy Efficiency grant (WEEG). However, the District is applying for the WEEG for both group 1 and group 2. This application submission for seeking WEEG funds is under group 2.

## Section 6 Conflict of Interest Disclosure Statement

There are no or anticipated potential conflict of interest existing at the time of this submission.

## Section 7 Unique Entity Identifier and System for Award Management

The Rubidoux Community Services District's Unique Entity Identifier (UEI) for the System for Award Management is 079561288 (DUNS #).

## Section 8 Official Resolution

The Board of Directors passed the Resolution 2022-894 On July 7, 2021, authorizing the submittal of the District's application to the U.S. Bureau of Reclamation's WaterSMART Water Energy Efficiency Grant program for the District's AMI Implementation Project. The resolution is included in this application as Appendix B.

## Section 9 References

- Aquacraft     Aquacraft, Inc. Water Engineering and Management, 2011. *California Single Family Water Use Efficiency Study*. (Available at <https://cawaterlibrary.net/wp-content/uploads/2019/07/California-Single-Family-Home-Water-Use-Efficiency-Study-20110420.pdf>)
- EPA             Green Vehicle Guide, 2016. <https://www3.epa.gov/otaq/gvg/learn-more-technology.htm>

- EPA United States Environmental Protection Agency, 2014. Questions and Answers EPA-420-F-040, <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100JPPH.PDF?Dockey=P100JPPH.PDF>
- GHG United States Environmental Protection Agency, 2020. US EPA Greenhouse Gas Equivalencies Calculator, <https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references>.
- M.Cubed East Bay Municipal Utility District, 2013. *Evaluation of East Bay Municipal Utility District's Pilot of WaterSmart Home Water Reports*. (Available at [https://www.financingsustainablewater.org/sites/www.financingsustainablewater.org/files/resource\\_pdfs/MCubed-Watersmart\\_evaluation\\_report\\_FINAL\\_12-12-13%2800238356%29.pdf](https://www.financingsustainablewater.org/sites/www.financingsustainablewater.org/files/resource_pdfs/MCubed-Watersmart_evaluation_report_FINAL_12-12-13%2800238356%29.pdf))
- SCWD South Coast Water District, 2019. *Advanced Metering Infrastructure Implementation Program Phase 1 Project Final Project Report*. (Available at <https://www.usbr.gov/lc/socal/wtrcons/amifinal.pdf>)
- USBR United States Bureau of Reclamation (USBR), 2021. *Water Reliability in the West – 2021 Secure Water Act Report*. (Available at [Water Reliability in the West - 2021 SECURE Water Act Report \(usbr.gov\)](https://www.usbr.gov/water/programs/secure-water-act-report/))
- USCB United States Census Bureau, Quick Facts for the City of Jurupa Valley, (Available at <https://www.census.gov/quickfacts/jurupavalleycitycalifornia>).
- UWMP Albert A. Webb Associates, 2021. *Rubidoux Community Services District 2020 Urban Water Management Plan (UWMP)* (Available at <https://www.rcsd.org/urban-water-management-plan>.)

- Appendix A. Letters of Support**
- Appendix B. Resolution**
- Appendix C. Required Federal Forms**

# Appendix A

## Letters of Support

# City of Jurupa Valley

**Chris Barajas Mayor, Leslie Altamirano, Mayor Pro Tem,  
Brian Berkson, Council Member, Guillermo Silva, Council Member, Lorena Barajas Bisbee, Council Member**

July 11, 2022

Mr. Darren Olson  
U.S Bureau of Reclamation  
6<sup>th</sup> Avenue and Kipling  
Denver, CO 80225

RE: Letter of Support for Rubidoux Community Services District's U.S. Bureau of Reclamation  
WaterSMART Water and Energy Efficiency Grant Application

Dear Mr. Darren Olson,

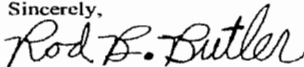
I am offering my support for the Rubidoux Community Services District's U.S. Bureau of Reclamation  
WaterSMART Water and Energy Efficiency Grant application for full Advanced Metering Infrastructure  
("AMI") implementation.

The Rubidoux Community Services District ("District") services a population of over 35,000 residents  
within the City of Jurupa Valley including disadvantaged low-income neighborhoods. The current meter  
infrastructure is outdated and labor intensive requiring meter readers to drive throughout the district to  
read meters on a 30-day cycle. Many water utilities have replaced their outdated meter infrastructure with  
AMI; however, this has been cost prohibitive to the Rubidoux Community Services District.

The proposed project will include the purchase and installation of AMI meters that will increase water  
use efficiency through near real time data on water usage. Full conversion to AMI will assist the District  
in proactively identifying water leaks, reduce real system losses, and reduce greenhouse gas emission by  
not driving around the service area for meter reading. By conserving water, RCS estimates to save energy  
by decreasing water treatment and pumping demands.

Thank you for your consideration of this import grant for the Rubidoux Community Services District that  
will help the District reach its water use efficiency goals.

Sincerely,



Rod. B. Butler  
City Manager

---

8930 Limonite Ave., Jurupa Valley, CA 92509-5183  
Phone: (951) 332-6464, FAX (951) 332-6995  
[www.jurupavalley.org](http://www.jurupavalley.org)



## Santa Ana Watershed Project Authority

OVER 50 YEARS OF INNOVATION, VISION, AND WATERSHED LEADERSHIP

July 6, 2022

Mr. Darren Olson  
WaterSMART Program Manager  
U.S Bureau of Reclamation  
6th Avenue and Kipling  
Denver, CO 80225

**RE: Support for Rubidoux Community Services District's U.S. Bureau of Reclamation  
WaterSMART Water and Energy Efficiency Grant Application**

Dear Mr. Olson:

The Santa Ana Watershed Project Authority (SAWPA) wishes to express its support for the Rubidoux Community Services District's U.S. Bureau of Reclamation WaterSMART Water and Energy Efficiency Grant application for full Advanced Metering Infrastructure ("AMI") implementation. The Rubidoux Community Services District ("District") services a population of over 35,000 residents within the City of Jurupa Valley including disadvantaged low-income neighborhoods. The current meter infrastructure is outdated and labor intensive requiring meter readers to drive throughout the district to read meters on a 30-day cycle. Many water utilities have replaced its outdated meter infrastructure with AMI, however this has been cost prohibitive to the District.

The proposed project will include the purchase and installation of AMI meters that will increase water use efficiency through near real time data on water usage. Full conversion to AMI will assist the District in proactively identifying water leaks, reduce real system losses, and reduce greenhouse gas emission by not driving around the service area for meter reading. Conserved water is also estimated to save energy by decreasing water treatment and pumping demands.

Thank you for your consideration of this important grant for the Rubidoux Community Services District that will help the District reach its water use efficiency goals. Please do not hesitate to contact me with any questions at (951) 354-4240, or [jmosher@sawpa.org](mailto:jmosher@sawpa.org).

Very Respectfully,

Jeffrey J. Mosher  
General Manager

Marco Tala  
Chair  
Inland Empire  
Utilities Agency

Bruce Whitaker  
Vice Chair  
Orange County  
Water District

Mike Gardner  
Secretary-Treasurer  
Western Municipal  
Water District

June D. Hayes  
Commissioner  
San Bernardino Valley  
Municipal Water District

David J. Lawson  
Commissioner  
Eastern Municipal  
Water District

Jeffrey J. Mosher  
General Manager

11615 Sterling Avenue, Riverside, CA 92503 | 951.354.4220 | [www.sawpa.org](http://www.sawpa.org)

2023 WaterSMART Water and Energy Efficiency Grant  
Rubidoux Community Services District Advanced Metering Infrastructure Implementation Project

MARK TAKANO  
41<sup>ST</sup> DISTRICT, CALIFORNIA

COMMITTEE ON VETERANS AFFAIRS  
COMMITTEE ON EDUCATION AND THE WORKFORCE



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

DC OFFICE  
1507 LONGWORTH HOUSE OFFICE BUILDING  
WASHINGTON, DC 20515  
PHONE: (202) 225-2305  
FAX: (202) 225-7018

DISTRICT OFFICE  
3403 10<sup>TH</sup> ST., STE 610  
RIVERSIDE, CA 92501  
(951) 222-0203

TAKANO.HOUSE.GOV

Darren Olson  
U.S Bureau of Reclamation  
6th Avenue and Kipling  
Denver, CO 80225

RE: Support for Rubidoux Community Services District's U.S. Bureau of Reclamation WaterSMART Water and Energy Efficiency Grant Application

Dear Mr. Darren Olson,

I am offering my support for the Rubidoux Community Services District's U.S. Bureau of Reclamation WaterSMART Water and Energy Efficiency Grant application for full Advanced Metering Infrastructure ("AMI") implementation.

Located in the 41st Congressional District, the Rubidoux Community Services District ("District") services a population of over 35,000 residents within the City of Jurupa Valley including disadvantaged low-income neighborhoods. The current meter infrastructure is outdated and labor-intensive requiring meter readers to drive throughout the district to read meters on a 30-day cycle. Many water utilities have replaced its outdated meter infrastructure with AMI; however, this has been cost prohibitive to the Rubidoux Community Services District.

The proposed project will include the purchase and installation of AMI meters that will increase water use efficiency through near real time data on water usage. Full conversion to AMI will assist the district in proactively identifying water leaks, reduce real system losses, and reduce greenhouse gas emission by not driving around the service area for meter reading. Conserved water is also estimated to save energy by decreasing water treatment and pumping demands.

Thank you for your consideration of this import grant for the Rubidoux Community Services District that will help the district reach its water use efficiency goals.

Sincerely,

A handwritten signature in black ink that reads "Mark Takano".



2023 WaterSMART Water and Energy Efficiency Grant  
Rubidoux Community Services District Advanced Metering Infrastructure Implementation Project

CAPITOL OFFICE  
1021 O STREET  
SUITE 7510  
SACRAMENTO, CA 95814  
TEL (916) 651-4031  
FAX (916) 651-4931

DISTRICT OFFICE  
3737 MAIN STREET  
SUITE 104  
RIVERSIDE, CA 92501  
TEL (951) 680-6750  
FAX (951) 680-6757

SENATOR.ROTH@SENATE.CA.GOV

California State Senate

SENATOR  
RICHARD D. ROTH  
THIRTY-FIRST DISTRICT



COMMITTEES  
BUSINESS, PROFESSIONS &  
ECONOMIC DEVELOPMENT  
CHAIR  
HEALTH  
INSURANCE  
MILITARY & VETERANS  
AFFAIRS  
BUDGET SUBCOMMITTEE #4  
ON STATE ADMINISTRATION &  
GENERAL GOVERNMENT

July 7, 2022

Darren Olson  
Supervisory Grant Management Specialist  
U.S Bureau of Reclamation  
6th Avenue and Kipling  
Denver, CO 80225

**RE: Support for Rubidoux Community Services District's U.S. Bureau of Reclamation WaterSMART  
Water and Energy Efficiency Grant Application**

Dear Mr. Olson:

I am pleased to share my strong support for the Rubidoux Community Services District's (RCSD) U.S. Bureau of Reclamation's WaterSMART Water and Energy Efficient Grant application for full Advanced Metering Infrastructure ("AMI") implementation.

Since its establishment as California's first community services district, RCSD has grown remarkably to serve over 35,000 residents within the City of Jurupa Valley. While RCSD has evolved over the years to meet the needs of our region, the current metering infrastructure in place has become increasingly outdated and onerous, requiring meter readers to drive throughout the district to read meters on a 30-day cycle. The resulting delays in identifying water leaks has detrimental cost and environmental impacts on its customers—including some of our region's most disadvantaged and under-resourced residents. Many water utilities have addressed this issue by replacing inefficient meter infrastructures with AMI, however, this has been cost prohibitive to the RCSD.

With the Bureau of Reclamation's investment, RCSD can initiate the purchase and installation of AMI meters that will increase water use efficiency through near real-time data on water usage. Full conversion to AMI will assist the RCSD in proactively identifying water leaks, reducing real system losses, and mitigating greenhouse gas emissions by not driving around the service area for meter reading. Conserved water is also estimated to save energy by decreasing water treatment and pumping demands.

As California continues to combat the lasting impacts of climate change and its statewide drought emergency, local service providers must be empowered to be part of the solution. Rubidoux Community Services District's AMI implementation proposal is a vital step in the direction of mindful conservation and an excellent candidate for the WaterSMART Water and Energy Efficiency Grant Program. Thank you for your time and consideration. I look forward to the opportunity to discuss this project further in the future.

Sincerely,

Handwritten signature of Richard D. Roth in black ink.

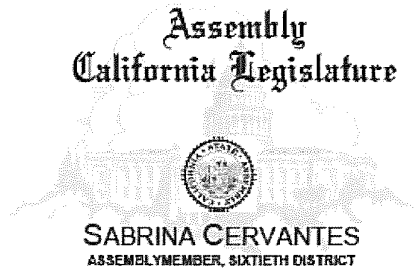
**RICHARD D. ROTH**  
Senator, 31<sup>st</sup> District

2023 WaterSMART Water and Energy Efficiency Grant  
Rubidoux Community Services District Advanced Metering Infrastructure Implementation Project

STATE CAPITOL  
P.O. BOX 942849  
SACRAMENTO, CA 94249-0061  
(916) 319-2360  
FAX (916) 319-2160

DISTRICT OFFICE  
391 N MAIN STREET, SUITE 210  
CORONA, CA 92576  
(951) 371-6860  
FAX (951) 734-4160

E-MAIL  
Assemblymember.Cervantes@assembly.ca.gov



COMMITTEES  
CHAIR: JOBS, ECONOMIC DEVELOPMENT,  
AND THE ECONOMY  
BANKING AND FINANCE  
COMMUNICATIONS AND CONVEYANCE  
INSURANCE

SELECT COMMITTEES  
CHAIR: VETERAN EMPLOYMENT AND  
EDUCATION

July 11, 2022

Mr. Darren Olson  
U.S. Bureau of Reclamation  
6<sup>th</sup> Ave. and Kipling  
Denver, CO 80225

RE: Letter of Support for Rubidoux Community Services District's WaterSMART Water and Energy Efficiency Grant Application

Dear Mr. Olson,

As the Assemblymember representing California's 60<sup>th</sup> District, I am pleased to support the Rubidoux Community Services District (RCSD) in its application for the U.S. Bureau of Reclamation WaterSMART Water and Energy Efficiency Grant for full Advanced Metering Infrastructure (AMI) implementation.

Serving over 35,000 residents within the City of Jurupa Valley, RCSD provides water and wastewater services to one of the fastest-growing populations in the state of California. RCSD's operations are vital to a city where more than 70 percent of residents consider themselves Hispanic or Latino, and where the poverty rate is higher than the state and national average.

With the state of California currently in a declared drought emergency, and Water Year 2021 being the second driest on record, ensuring our water districts have the tools they need to build efficient water distribution networks and promote efficient water consumption is more necessary than ever. The WaterSMART Grant will enable RCSD to update its outdated, labor-intensive meter readers to AMI meters. This will assist RCSD in proactively identifying water leaks and will provide real-time data on water usage that will give valuable insights in order to help develop strategies to promote efficient water use. In so doing, RCSD will help advance California's goals to achieve water use reductions in a region that has been, and continues to be, severely impacted by drought.

Furthermore, RCSD's proposed project to install AMI meters will help streamline operations, resulting in reduced costs and additional benefits to ratepayers through quicker, more responsive service. In addition, by promoting water use reductions, this project will help meet California's goal of reducing greenhouse gas emissions by 80 percent of 1990 levels by 2050 by minimizing vehicle trips for meter inspections and eliminating energy costs associated with water pumping and treatment.

As California's oldest community services district, RCSD has long prioritized access to water that is both equitable and sustainable. I am confident that RCSD will continue that tradition in its application for the WaterSMART Grant. Thank you for your time and consideration of my recommendation.

Sincerely,

A handwritten signature in black ink that reads "Sabrina Cervantes". The signature is written in a cursive, flowing style.

SABRINA CERVANTES  
Assemblymember, 60<sup>th</sup> District

# Appendix B

## Resolution

**RESOLUTION NO. 2022-894**

**A RESOLUTION OF THE BOARD OF DIRECTORS OF THE RUBIDOUX  
COMMUNITY SERVICES DISTRICT AUTHORIZING THE GENERAL MANAGER,  
OR DESIGNEE, TO APPLY FOR, RECEIVE, AND ENTER INTO A COOPERATIVE  
AGREEMENT, AND ADMINISTER A GRANT FOR THE 2023 BUREAU OF  
RECLAMATION WATER AND ENERGY EFFICIENCY GRANT**

**WHEREAS**, the General Manager, or designee, of the Rubidoux Community Services District ("DISTRICT"), may legally bind the DISTRICT by his/her signature; and

**WHEREAS**, the DISTRICT wishes to enter into the Bureau of Reclamation's Water and Energy Efficiency Grant for the DISTRICT to receive funding in the amount not to exceed \$1,500,000 under the WaterSMART: Water and Energy Efficiency Grant for FY 2023 to implement water and energy efficiency through Advanced Metering Infrastructure; and DISTRICT will provide the amount of funding and/or in-kind contributions specified in the funding plan; and

**WHEREAS**, the DISTRICT Board of Directors and the General Manager have reviewed and support the application submitted, and

**WHEREAS**, the DISTRICT will work with the Bureau of Reclamation to meet established guidelines for entering into a cooperative agreement.

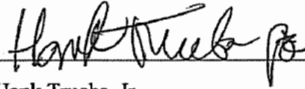
**NOW BE IT THEREFORE, BE IT RESOLVED** that the Board of Directors of the DISTRICT, hereby supports the application submitted and authorizes the General Manager to execute any and all documents associated with this grant process.

**ADOPTED** at the regular meeting of the Board of Directors of the Rubidoux Community Services District, held on the 7<sup>th</sup> day of July, 2022

*<signatures on following page>*

2023 WaterSMART Water and Energy Efficiency Grant  
Rubidoux Community Services District Advanced Metering Infrastructure Implementation Project

**RUBIDOUX COMMUNITY SERVICES  
DISTRICT**



Hank Trueba, Jr.  
Board President

AYES: A. Muniz, B. Murphy, J. Skerbelis, H. Trueba, Jr., F. Forest Trowbridge

NOES:

ABSTAIN:

ABSENT:

ATTEST:



Jeffrey D. Sims,  
General Manager/Secretary  
Rubidoux Community Services District